CASE WESTERN RESERVE UNIVERSITY EST. 1826

Faculty Senate Executive Committee
Tuesday, December 5, 2017
10:00a.m. – 12:00 p.m., Adelbert Hall, Room M2

10:00 a.m.	Approval of Minutes from the November 13, 2017, Executive Committee Meeting, *attachment*	Juscelino Colares
10:05 a.m.	President and Provost's Announcements	Barbara Snyder Bud Baeslack
10:10 a.m.	Chair's Announcements	Juscelino Colares
10:15 a.m.	Graduate Studies Committee: MS/PhD in Biomedical and Health Informatics, *attachment*	Mendel Singer Paul MacDonald
10:25 a.m.	Proposed Revisions to MSASS By-Laws, *attachment*	Jerry Mahoney
10:35 a.m.	Proposed Revisions to SOM By-Laws, *attachment*	Cathy Carlin Jo Ann Wise
10:40 a.m.	SON Representative Report	Evelyn Duffy
10:45 a.m.	Report from the Committee on Women Faculty	Leena Palomo
10:55 a.m.	Information on Upcoming University Compliance Training, *attachment*	Lisa Palazzo
11:05 a.m.	FSCUE: Process for Considering Modifications to Academic Calendar	Gary Chottiner
11:15 a.m.	FSCUE: Student Records Retention Policy; Transition of Records from Blackboard to Canvas	Gary Chottiner Tina Oestreich
11:35 a.m.	SODM Representative Report	Ibrahim Tulunoglu
11:40 a.m.	Proposed Faculty Senate Resolution	Kimberly Emmons
11:45 a.m	CUE Update	Kimberly Emmons
11:50 a.m.	Approval of Faculty Senate Agenda, *attachment*	Juscelino Colares

Faculty Senate Executive Committee
Minutes of the December 5, 2017 Meeting
Adelbert Hall, Room M2

Committee Members in Attendance
Barbara Snyder, President
Bud Baeslack, Provost
Juscelino Colares, LAW, chair
Peter Harte, SOM, past chair
Cynthia Beall, CAS, vice chair
Kimberly Emmons, CAS
Evelyn Duffy, SON
Jo Ann Wise, SOM
Robert Strassfeld, LAW
Roger Quinn, CSE

Others Present:
Gary Chottiner, chair, FSCUE
Kenneth Ledford, chair, By-Laws Committee
Paul MacDonald, chair, Graduate Studies Committee
Jerry Mahoney, chair, Faculty Compensation
Maureen McEnery, chair, Nominating Committee

Absent:
Leon Blazey, WSOM
David Miller, MSASS
Ibrahim Tulunoglu, SODM

Guests:
Don Feke
Genevieve Mathieson Kilmer
Tina Oestreich
Lisa Palazzo
Satya Sahoo
Mendel Singer

Call to Order
Professor Juscelino Colares, chair, Faculty Senate, called the meeting to order at 10:00 a.m.

Approval of Minutes
The minutes of the November 13, 2017 meeting of the Faculty Senate Executive Committee were reviewed and approved. *Attachment*

President's Announcements

The President reported on the federal government's proposed tax bill and the negative effects on higher education. Updates will be provided to the campus community as they are known.

Provost's Announcements

The Provost had no announcements.

Chair's Announcements

Professor Colares said he has reached out to Senate standing committee chairs about reporting on their committee's activities. Several chairs will be reporting to the Executive Committee in the spring semester. Professor Leena Palomo, chair of the Senate Committee on Women Faculty, will be reporting at today's meeting.

Prof. Colares said that chairs of standing committees have reported that attendance at committee meetings has been good to excellent. Prof. Colares also reminded Executive Committee members of the importance of attending meetings.

Graduate Studies Committee: MS and PhD in Biomedical and Health Informatics

Professor Mendel Singer, SOM, presented the proposed MS and PhD in Biomedical and Health Informatics. There is an increased use of computing and informatics in the field of biomedical and population health, and a growing need for those to work in this field. The program is sponsored by the Center for Computational Biology and will have administrative support from the department of Population and Quantitative Health Sciences. The programs have three main areas of focus: Biomedical and Heath, Computation and System Design, and Data Analytics. Students will come from various backgrounds including medical residents/staff, clinical staff, engineering management, biostatistics, biomedical engineering, and others. Prof. Singer said he thought that approximately four master's degree students would enroll in the PhD program. A member of the Executive Committee asked whether there were sufficient library resources for this program, and whether the Library Content and Resources Review Process (approved by the Senate last spring) had been completed. Prof. Singer said that he anticipates that there are sufficient resources but will complete the review process prior to the December 11th Senate meeting. The Executive Committee voted to include the degree programs on the agenda for the Senate meeting as long as a library review is completed before the meeting. *Attachment*

Proposed Revisions to MSASS By-Laws

Professor Jerry Mahoney, MSASS, presented proposed revisions to the MSASS By-Laws. The Executive Committee voted to forward the By-Laws to the Faculty Senate By-Laws Committee for review. *Attachment*

Proposed Revisions to SOM By-Laws

Prof. Colares reported that an issue had arisen regarding the appropriate faculty member to present the third set of proposed revisions to the School of Medicine's By-Laws. When the proposed revisions were sent to the Faculty Senate from the SOM, it had been suggested that the former chair of the SOM By-Laws Committee be designated as presenter. Other faculty from the SOM questioned why the

current chair, who replaced the former chair half way through the year was not designated as the presenter. A motion was made and seconded to forward the SOM By-Laws to the Senate By-Laws Committee for review without a presentation to the Executive Committee. The Executive Committee approved the motion. Prof. Colares said the broader question of who should present school By-laws revisions would be included on the agenda for the January Executive Committee meeting. *Attachment*

SON Representative Report

Professor Evelyn Duffy, representative from the SON, reported on activities within the school. The current SON dean is resigning and the search committee process is beginning. Prof. Duffy said that the search is confidential and commented that there had been more participation by faculty in previous searches. The Provost said that the current trend is to conduct confidential searches in order to attract the strongest candidates, and to allow internal candidates such as sitting deans or department chairs to apply. Faculty may be involved during the interview process if they sign confidentiality agreements.

Prof. Duffy also said that there is a national recommendation within the advanced practice nursing profession that a practice doctorate be required for those who seek to work at this level. The CRNA (Certified Registered Nurse Anesthetist) credentialing body has mandated a doctorate for all new graduates and the SON has revised the CRNA curriculum to accommodate this mandate. The midwifery, clinical nurse specialist, and nurse practitioner credentialing bodies have not instituted similar mandates, but they may be on the horizon. This will require the SON to revise all of its advanced practice curricula.

Prof. Duffy said that the SON By-Laws permit non-tenure track faculty to vote on the promotion of other non-tenure track faculty. This issue had come up last month when the Executive Committee reviewed proposed revisions to the CSE By-Laws.

Report from the Committee on Women Faculty

Professor Leena Palomo, chair, Senate Committee on Women Faculty, reported on various committee activities. The committee is partnering with the Flora Stone Mather Center on various projects, and has recognized advances made by the Faculty Parents of Young Children group (led by Professor Eileen Anderson-Fye) which supports CWRU faculty. The committee is also partnering with Deputy Provost Lynn Singer on gender salary equity issues. The committee is continuing to seek partnerships and collaborations with other organizations across campus and is planning to publish a white paper in order to better promote recent advances for women at CWRU.

Information on Upcoming University Compliance Training

Lisa Palazzo, University Chief Compliance and Privacy Officer, reported on upcoming compliance training for faculty and staff. This will be the third year of compliance training and each year there is new content. This year's training will address CWRU's alcohol and tobacco free campus policies as well as university policies regarding youth on campus. Results from a 2017 survey informed the development of the upcoming module. The most common suggestion in the survey was to make training more interesting and interactive, perhaps by including video/visual content. Faculty and staff will have until the end of March to complete the training. Live sessions will supplement the online

training for those working with youth, and for staff who don't regularly use computers. The module should take approximately 30-40 minutes to complete. *Attachment*

FSCUE: Process for Considering Modifications to Academic Calendar

Professor Gary Chottiner, chair of FSCUE, reported on changes to the university's academic calendar which had been discussed but not finalized during the 2016-2017 academic year. Prof. Chottiner sought guidance from the Executive Committee on how to proceed since the CUE recommendations might also affect the calendar. The Executive Committee decided that FSCUE should informally continue its discussion of changes already under consideration in the committee, and that a formal charge might be made after the deadline for feedback on the CUE recommendations (January 30, 2018). *Attachment*

FSCUE: Student Records Retention Policy; Transition of Records from Blackboard to Canvas

Prof. Chottiner reported that a question has come up about retention of course records as the university transitions remaining materials from Blackboard to Canvas. The transition must be completed by June of 2018 when the university will lose access to Blackboard. Prof. Chottiner said that he has been unable to find a policy on retention of course records such as syllabi, exams, student papers and coursework, etc… and wanted to bring this to the Executive Committee for discussion. Tina Oestreich and Genevieve Mathieson Kilmer from UTech presented an update on the transition to Canvas, and UTech's work to create a policy and process for retention of records remaining in Blackboard. UTech is currently working with academic leadership across campus and with the Office of General Counsel to determine data needs. The Executive Committee decided that FSCUE should interface with UTech on these issues and report back early in the spring semester.

Proposed Faculty Senate Resolution

Professors Ken Ledford and Kimberly Emmons drafted a proposed Senate resolution denouncing the government's proposal to tax graduate student tuition waivers. The goal is to show solidarity with graduate students and with the administration who have worked to defeat this measure. Members of the Executive Committee expressed support for the proposed resolution but there was also some concern about waiting until December 11th for a Faculty Senate endorsement. A motion to include the proposed resolution on the agenda for the Senate meeting was approved. *Attachment*

CUE Update

Prof. Emmons said she has already received some comments on the CUE recommendations and that the deadline for schools to submit feedback is January 30th, 2018.

Approval of Faculty Senate Agenda

The Executive Committee approved the agenda for the December 11th Faculty Senate meeting with several changes. *Attachment*

The meeting was adjourned at 12:00 pm.

Mendel Singer, PhD MPH

MS/PhD Degree Program in Biomedical and Health Informatics

Why?

- Increasing use of computing and informatics in biomedical and population health
- Fast growing demand for people who do it, and people who understand it (forecast 22% growth 2012-2022)
- Major shortage of properly trained people to do it
  - People with complementary knowledge doing it anyway
- Directive from Dean Davis to develop MS/PhD in Health Informatics

Run by

- Sponsored by the Institute for Computational Biology (ICB)
  - Center for Education and Training in Health Informatics (CETHI)
  - Collaborative across schools and affiliated institutions
- Administrative support from Population and Quant. Health Sciences
  - Vice Chair for Education, Mendel Singer PhD MPH
  - Administrative Director for Non-Clinical Education, Nickalaus Koziura MEd
- Leadership
  - Program Director: David Kaelber, MD (Metro) and Satya Sahoo, PhD
  - Mendel Singer, PhD MPH

Concentration Areas and Training

- Biomedical and Health
  - Focus on Clinical Research Informatics
  - Example course: Medical Imaging Fundamentals
- Computation and System Design
  - Focus on Computational Informatics
  - Example course: Machine Learning and Data Mining
- Data Analytics
  - Focus on Data Modeling and Analysis
  - Example course: Applied Probability and Stochastic Processes for Biology
- Experiential Learning and Career Guidance
  - Multiple courses with project-based learning
  - Thesis or mentored project for M.S. / Dissertation for Ph.D.
  - Career guidance provided by faculty trainers through seminars, professional development presentations, and career talks by invited speakers and panels from industry

What?

- Based on core competencies from the American Medical Informatics Association (AMIA), US National Library of Medicine (National Institutes of Health). Content divided into 3 areas:
  - Biomedical and Health
  - Computation and System Design
  - Data Analytics
- MS – 30 credits
  - 9 credits of required courses
    - HSMC 432 Introduction to Health Informatics
    - PQHS 431 Statistical Science I
    - PQHS 416 Foundations of Computing in Biomedical and Health Informatics
  - Distributional requirements: 3 credits from each of three content areas
  - Concentration: 6-9 additional credits in one of the three areas (6 for Plan A; 9 for Plan B)
  - Plan A: 24 credits of coursework, 6 credits of thesis.
  - Plan B: 27 credits of coursework, 6 credits of mentored M.S. project
- PhD in Biomedical and Health Informatics (36 credits courses + 18 credits of 701)
  - 3 required M.S. courses and Statistical Science II (PQHS 432) for a total of 12 credits
  - 3 credits in each of three content areas for a total of 9 credits
  - 12 credits of electives determined by mentoring committee according to student's desired specialization
  - Ethics (1 credit) and Communication (2 credits)

Students From Many Backgrounds

- Medical Residents/Fellows
- Clinical Staff
- Engineering Management
- Health Care Management
- Population and Public Health
- Biostatistics
- Computer/Data Science
- Biomedical Engineering
- Biological Sciences

Tuition

- Tuition follows the program
- Special arrangement with Weatherhead to use HSMC 432 as a required core course. $750/credit hour.
  - Only required course from outside PQHS
- Other courses from outside SOM done collegially
  - Mutual benefit: Courses in program will also strengthen Medical Informatics concentration in M.S. Computer Science and Future Data Science MS/PhD
- University policy on tuition across schools coming soon?
  - If so, it will supersede this arrangement.

Pamela B. Davis, MD, PhD
Dean
Senior Vice President for Medical Affairs
Office of the Dean

10900 Euclid Avenue
Cleveland, Ohio 44106-4915

Visitors and Deliveries
Biomedical Research Bldg., Room 113

phone 216.368.2825
fax 216.368.2820

casemed.case.edu

November 16, 2017

Juscelino Colares
Chair, Faculty Senate
c/o Rebecca Weiss
Secretary of the University Faculty
Adelbert Hall

Dear Professor Colares:

On behalf of the Faculty of Medicine, I forward a proposal to establish an MS and PhD degrees granting program in biomedical and health informatics. I understand that the process for further review includes review and approval by the Faculty Senate's Graduate Studies Committee and the Faculty Senate as a whole.

This unique program will address the growing need for professionals in health information technology, especially the use of computing and information technology in biomedical and health research to advance knowledge, contribute to scholarship, and to improve patient care.

The proposed program has been recommended for approval by the School of Medicine's Faculty Council, as described in the accompanying memo from Dr. Phoebe Stewart, Faculty Council Chair, after prior review according to established School of Medicine procedures.

I strongly support approval of the program.

Please let me know if I can provide additional information. Thank you.

Sincerely,

Pamela B. Davis, MD, PhD

cc: Paul MacDonald, Chair Faculty Senate Graduate Studies Committee
Phoebe Stewart, Chair, Faculty Council
Mendel Singer, Vice Chair for Education, Department of Population and Quantitative Health Sciences
Nicole Deming, Assistant Dean for Faculty Affairs and Human Resources

Memorandum

To: Pamela B. Davis, MD, PhD
Dean, School of Medicine
Case Western Reserve University

From: Phoebe Stewart, PhD
Chair, Faculty Council

Re: Biomedical Health Informatics MS/PhD Proposal

Date: October 27, 2017

At its October 16, 2017 meeting, the Faculty Council voted to recommend approval of a new MS/PhD program in Biomedical and Health Informatics. Dr. Mendel Singer, Associate Professor and Vice Chair for Education in the Department of Population and Quantitative Health Sciences, presented the proposal to the Faculty Council.

As Dr. Singer noted, there is a major shortage of people with MS and PhD degrees in this field. Administrative support will be provided by the Department of Population and Quantitative Health Sciences (Vice Chair for Education, Mendel Singer, PhD, MPH; Administrative Director for Non-Clinical Education, Nickalaus Koziura, MEd). Leadership will be provided by David Kaelber, MD, PhD and Satya Sahoo, PhD (program directors) with Mendel Singer assisting.

A motion was made and seconded to approve the new graduate certificate. A vote was taken, 28 members were in favor, 2 were opposed, and 2 abstained. The motion passed.

After your review, I hope you will join me in recommending approval of the new MS/PhD program in Biomedical and Health Informatics.

Please let me know if I can provide any additional information.

Thank you for your consideration.

Sincerely,

Phoebe L. Stewart

Phoebe L. Stewart, Ph.D.
Faculty Council Chair
Professor of Pharmacology
Case Western Reserve University School of Medicine

cc: Nicole Deming, JD, MA
Dan Anker, PhD, JD

CWRU Action Form for Majors/Minors/Programs/Sequences/Degrees **Docket # _____**
(instructions on back)

College/School: _____**School of Medicine**_____
Department: _____**Population and Quantitative Health Sciences**_____

PROPOSED: _____ **major**
_____ **minor**
____ **program**
_____ **sequence**
___ **X** __ **degree**

TITLE: ___ **PhD and MS Program in Biomedical and Health Informatics**_____
_____

EFFECTIVE: ___**Fall**___ **(semester)** __**2018**____ **(year)**

DESCRIPTION: The MS/PhD program in Biomedical and Health Informatics (BHI) will provide students from different backgrounds a common set of educational experience and skills to meet their career objectives in BHI.

1. Health Informatics is a fast growing area and there has been great interest on the part of Dean Davis (SOM) to create graduate programs in BHI. This MS/PhD degree program will enable CWRU to establish and lead the development methodologies in the fast growing field of BHI by leveraging several unique advantages, including biomedical research.
2. The program is a project of the Institute for Computational Biology, a collaborative venture. This MS/PhD program is in collaboration with SOM, Engineering and Weatherhead. The department of Population and Quantitative Health Sciences (formerly Epidemiology and Biostatistics) is assisting with administration of the program.
3. The program will be open to clinical residents and fellows, clinical staff and students in computer science, statistics, mathematics, biological sciences, physics among other programs.
4. All faculty/staff resources required are currently in place and available with new planned course to be offered by existing faculty members.

Is this major/minor/program/sequence/degree: __**X**___ **new**
_____ **modification**
_____ **replacement**

If modification or replacement please elaborate: _____

Does this change in major/minor/program/sequence/degree involve other departments? ____**Yes**_ __**X**__**No**

If yes, which departments? _____

Contact person/committee: _**Mendel Singer, mendel@case.edu 368-1951**_____

SIGNATURES: **DATE**

Department Curriculum Chair(s)/Program Directors: ___ Mendel E. Singer _____**August 29 2017**
Department Chair: _____
College/School Curriculum Committee Chair: _____
College/School Dean(s): _____
FSCUE Curriculum Subcommittee Chair: _____

File copy sent to: _____**Registrar** _____**Office of Undergraduate Studies/Graduate Studies**
_____**Other:** _____

Case Western Reserve University
MS and PhD Program in Biomedical and Health Informatics

Proposal

Contents

Department of Population and Quantitative Health Sciences

School of Medicine

1. Introduction

The increasing use of computing and information technology in biomedical and population health research for managing and leveraging data to provide novel insights and improve patient care requires critical investments in creating an appropriately trained workforce. The US Bureau of Labor Statistics projects that employment related to health informatics to grow 22% from 2012 to 2022, however there is a growing shortage of trained workers. The National Institutes of Health (NIH) and in particular the US National Library of Medicine (NLM) have made significant investments in training of investigators in computer science and mathematical statistics with applications in biomedical, clinical and translational research, and public health.

To address the growing need for health information technology (IT), the Office of the National Coordinator (ONC) for health information technology within the Department of Health and Human Services has initiated the "Health IT Workforce Development" program. The program has funded 82 community colleges across the 50 states to create or upgrade existing training programs in health informatics. Similarly, the US NLM supports 16 educational institutions to train investigators in biomedical informatics and data science. In 2011, the American Medical Informatics Association (AMIA) announced the approval of a new subspecialty certification called "Clinical Informatics" by the American Board of Medical Specialty. Given these national initiatives and growing recognition of the need for biomedical and health informatics training, it has become important to develop a degree program at Case Western Reserve University (CWRU) to keep pace with peer educational institutions and also contribute to the development of biomedical and health informatics education.

Therefore, the new MS/Ph.D. program in **Biomedical and Health Informatics (BHI)** at CWRU brings together a diverse group of multi-disciplinary and interdisciplinary faculty members from across the university campus to educate and train students. Biomedical and health informatics is key to the success several initiatives in precision medicine, accountable healthcare, and reproducible science. The growing volume of multi-modal and heterogeneous data in biomedical and health domain needs to be effectively leveraged to realize the objectives of these initiatives through translational research enabled by informatics platforms. The US NLM recommends biomedical and health informatics training to focus on "principles and concepts" of informatics and data science, mathematical and statistical methods, computer science, and domain specific training in biomedicine and health. This interdisciplinary training will allow researchers to advance biomedical and health informatics research. In addition, it will also help administrators and managers using or supervising the use of computing systems in health care, biomedical, and translational research to advance their career objectives.

CWRU is uniquely positioned to establish a MS/PhD program in biomedical and health informatics by building on its pioneering work in medical and graduate education, which has been adopted nationally. In addition, it has leading programs in the School of Engineering and the Weatherhead School of Business that have close relation with the School of Medicine, which are essential for developing a truly interdisciplinary biomedical and health informatics graduate program. **This proposal describes a clearly defined plan to create a graduate program in biomedical and health informatics that brings together faculty from multiple departments and schools across the university campus**. This multi-disciplinary synergistic approach will enable students and program participants to be taught the principles of sound and rigorous methodology for research as well as operational applications (e.g., for MS students).

A graduate program in biomedical and health informatics requires faculty members with expertise and experience in basic biological sciences, medicine, public health, computer science, mathematics, and statistics. CWRU has an outstanding record of innovation and accomplishments in these domains with a strong culture of collaborations and interdisciplinary research both at individual and institutional leadership levels. The recently established Institute for Computational Biology (ICB) has enabled academic collaboration between CWRU, University Hospitals, and the Cleveland Clinic Foundation. ICB aims to use computational methods for analyzing large and diverse biomedical data to expand our fundamental knowledge of human biology to improve our ability to diagnose, treat, prevent, and deliver healthcare.

In addition to ICB, the participating departments and CWRU schools have built significant research presence in medicine, genetics, genomics, epidemiology, biostatistics, computer science, engineering, and business management, which can enable effective use of biomedical and health data for advancing research as well as patient care delivery. The biomedical and health informatics MS/PhD program is designed to build on these existing strengths and develop into a highly successful graduate program to serve local, national, and international researchers and students.

We anticipate enrollment increasing over 5 years up to a cap of 30 per year. Below is a table that projects the expected enrollment targets in the BHI program, which also includes projected international student enrollment. The PhD students admitted to the program are expected to be full-time students.

Table 1: Projected enrollment of students in the BHI program

Program	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
MS/PhD BHI Program - **New Enrollees**	10-20	20-30	20-30	30	30

2. Academic Quality

The biomedical and health informatics (BHI) program leverages the experience and expertise of faculty members from across the campus. Several faculty members from the School of Medicine, School of Engineering, and the Weatherhead School of Business are committed to the BHI program. These faculty members have the demonstrated experience and accomplishments in genetic and quantitative biology, medicine, clinical research, computer science, and mathematical statistics to establish a high-quality graduate program that provides unique multi-disciplinary training in BHI. The BHI program will use a combination of existing courses across the three participating CWRU schools and also develop customized programs of study for participating students based on their area of focus, prior background, and future career objectives. The students graduating from the BHI program are expected to have minimum competencies in three fundamental areas of: **Data Analytics**; **Biomedical and Health**; and **Computation and System Design**. The initial program trainers have experience of teaching many students in the past five years.

Environment

CWRU has systematically created and expanded infrastructure as well as research program that is necessary to create a nationally competitive BHI graduate program.

- The Department of Population and Quantitative Health Sciences (PQHS), which is the academic home of the BHI program have invested significant resources in faculty recruitment and acquiring computing as well as data infrastructure for computational biology and clinical research using quantitative approaches.
- The ICB is leading two initiatives for integrative biomedical and health research using Big Data technologies. The Safely Held Electronic Data (SHED) project is creating an integrated database to support investigator initiated studies in biomedicine. In addition, a data warehouse for Electronic Health Record (EHR) data called CLEARPATH will hold de-identified EHR data.
- In addition, there has been continuing investments in genetic epidemiology and biostatistics research in the PQHS department for integrative research in personalized medicine using advances in genetics.
- CWRU supports and maintains Kelvin Smith Library. The library maintains a rich and diverse catalog of 2.75 million volumes that can be access through a variety of formats. Additionally, the library houses the University Technology (UTech) Services new renovated data center.
- The CWRU High Performance Computing Cluster (HPCC) is a facility provided by UTech to support Big Data projects in multiple domains, including biomedical and health research. The HPCC consists of "GPU nodes for higher end graphics processing, Xeon Phi node for massive parallelization, SMP nodes for intensive memory needs, and compute nodes for general purpose tasks."
- Each trainer in the BHI program has access to office and laboratory/research space to allow students to perform activities required in this program.
- Case Western Reserve holds membership in the Association of American Universities, and is fully accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools and by several nationally recognized professional accrediting associations.

Program Emphasis and Design

The BHI program will train students in (1) quantitative methods including statistical techniques; (2) computational methods including computer and information sciences; and (3) basic biology, medical, and/or public health application domains with appropriate cross-training that provides an integrative approach to tie them together. The program aims to provide students with both training and experience in interdisciplinary research and also training in innovative methods as well as approaches. This training may also include research rotations and project-based experience (specifically for Ph.D. students). The program will have a particular focus on biomedical and health Big Data (e.g., Electronic Health Records (ER), imaging, pathologic, electrophysiological, genomics, and other 'omics' data), which has significant potential to transform research and practice of biomedicine and health (see Appendix A for course descriptions). Therefore, the BHI program is distinct from the SYBB Bioinformatics MS/PhD program as it aims to address the needs to clinicians, biomedical researchers, and students interested in informatics research beyond basic biological sciences.

Through appropriate course work, the students will gain a broad understanding of biomedical and health informatics field. These courses are divided into a set of core courses that will be required for all students in the BHI program. The three core courses are designed to cover primary topics in biomedical and health informatics, computing technologies, and applied

statistics. In addition to the core courses, the students will be required to take three courses (from a number of selected courses as described in the Appendix A) spread across the three focus areas of this program and elective courses based on their area of interest, which will be decided in consultation with the student's mentorship/advisory committee. The broader objective of the BHI program coursework is interdisciplinary training that equips the students to leverage informatics as an integral component of biomedical and health research as well as practice.

Faculty Resources

The faculty trainers for the BHI graduate program have received significant funding from the NIH and the National Science Foundation (NSF) in the last five years. They also have a strong record of training students. The initial group of trainers will be selected based on a review of their NIH funding, previous training record, and publications that are relevant to the broader domain of informatics in biomedical and health research. We note that although junior faculty members may not have a history of funding or training, they are likely to have strong publication track record in biomedical and health informatics. Therefore, all faculty members with primary or adjunct appointment at CWRU are eligible for consideration to be a training faculty in the BHI program.

The Steering Committee for the program is co-chaired by Drs. David Kaelber and Satya Sahoo and includes Steering Committee members Mendel Singer, Associate Professor of Population and Quantitative Health Sciences, Alan Dowling, Professor in the Weatherhead School of Business, Rong Xu, Associate Professor of Population and Quantitative Health Sciences, Colin Drummond, Professor of Biomedical Engineering, Dana Crawford, Associate Professor Population and Quantitative Health Sciences, William Bush, Assistant Professor of Population and Quantitative Health Sciences, and Jill-Barnholtz-Sloan, Professor of Cancer Center (Primary) and Population and Quantitative Health Sciences (Secondary).

In addition to the listed faculty members, other faculty members from additional departments and schools across the University have committed to make significant contributions to the BHI program and will serve as founding trainers in the program. The initial group of trainers have significant achievements in biomedical, health, and informatics research.

3. Program Description

The BHI program aims to provide students from different backgrounds a common set of skills and educational experience that are essential for meeting their career goals in biomedical and health informatics. This BHI program consists of a set of core courses covering foundational topics of biomedical informatics research and elective courses that enables students to focus on specialized areas of bioinformatics, medical/clinical informatics, and population health informatics. In addition, participation in research seminar courses and practical research experience allows students in this program to have the necessary skills to lead biomedical and health informatics research projects to generate, process, and analyze data. This distinguishes the BHI program from other graduate programs that are exclusively focused on computational or basic sciences or clinical research.

The academic requirements of the BHI program are designed to enable students to have common foundation in biomedical informatics with minimum competencies in three focus domains of: (1) Biomedical and Health, (2) Computation and System Design, and (3) Data Analytics. These required competency and core courses are aimed to train students through a new interdisciplinary program that enables students to develop and apply novel computing and quantitative methodologies and techniques in biomedical application domains. This will be reflected in their

Thesis work (for PhD or MS Plan A students) or in their curriculum (MS, Plan B). Each student will have a mentoring or advisory committee (similar to the graduate student requirements in the PQHS department) who will guide the students in completing the appropriate coursework to gain required competencies during training and meet the requirements of different focus areas of biomedical and health, computation and system design, and data analytics with applications in public health, clinical research, or basic biology.

The general framework for fulfilling these competencies for the PhD is included in three example courses of study in the Appendix. An example course of study for the MS curriculum is also included in the Appendix also.

Ph.D. Program Summary

The BHI program differs from current CWRU programs in terms of its requirements for systematic understanding of three core focus areas of biomedical and health, computation and system design, and data analytics. The program includes a core set of courses, including Introduction to Health Informatics (MPHP 532/HSMC 432), Foundations of Computing in Biomedical and Health Informatics, and Statistics I (PQHS 431), and a set of three required distribution of courses in the three core focus areas together with Statistics II (PQHS 432) course for a total of 12 credits. In addition, the student is required to take 4 courses from a set of courses categorized into the three focus areas for a total of 12 credits based on the recommendations of the mentorship/advisory committee members and the area of interest for the student. The PhD student also has to take a course on Research Seminar, Research Ethics in Population Health Sciences, and Communicating in Population Health Science Research for a total of 3 credits. Finally, the student will have a qualifier exam, a PhD thesis, and oral defense that conforms to the requirements and guidelines of CWRU. A PhD student is required to take at least 54 credits (including 18 credits of dissertation research) that conforms to the CWRU graduate program requirements.

The PhD students in the BHI program will follow the same guidelines for dissertation proposal as other PhD students in the PQHS department. This involves the creation of a dissertation committee in consultation with their research mentor consisting of at least 4 university faculty members. The research advisor will be part of this committee, however a faculty member other than research advisor will be the committee chair. The third member of the committee should be a member of the PQHS department and the fourth member should be from another department of the university. A student will write a dissertation proposal based on their dissertation topic and defend the proposal in a public presentation (as described in the PQHS PhD student handbook). The student's written dissertation needs to conform to the guidelines described in the PhD student handbook and the final oral examination should be public with appropriate approval obtained from the School of Graduate Studies. The complete details of the PhD program dissertation committee and dissertation proposal defense are provided in the PQHS department PhD student handbook attached with this proposal as **Appendix B**.

Master's Degree Plan A Summary

The minimum requirements for the MS degree under Plan A are 24 semester hours of coursework (with at least 18 semester hours of course work at 400 level or higher) and 6 semester hours of thesis course with the thesis evaluated by the mentoring/advisory committee for a total of 30 hours. The courses must include Introduction to Health Informatics (MPHP 532/HSMC 432), Foundations of Computing in Biomedical and Health Informatics, and Statistics I (PQHS 431). The

student's course plan must be approved by the program steering committee and include appropriate set of course distribution covering the three focus areas of biomedical and health, computation and system design, and data analytics. The Appendix includes sample course schedules.

Each student must prepare an individual thesis that must conform to regulations concerning format, quality, and time of submission as established by the dean of graduate studies. For completion of master's degrees under Plan A, an oral examination (defense) of the master's thesis is required, where the examination is conducted by a committee of at least three members of the university faculty and the research advisor is a primary faculty appointment in the PQHS department. The students in the BHI MS program will conform to the degree requirements of the PQHS MS program requirements as described in details in the MS student handbook (attached with this proposal as **Appendix C**).

Potentials Dissertation or Theses Topics

- Natural Language Processing toolkit for EHR data.
- Ontology-driven integration of heterogeneous data.
- Drug-reposition using network analysis of drug-drug interactions.
- Social media data analysis for tracking depression in undergraduate student population.

Master's Degree Plan B Summary

The minimum requirements for the MS degree under Plan B are 30 semester hours of course work (with at least 18 semester hours of course work at the 400 level or higher) and a written comprehensive examination or major project with report that is evaluated by the student's mentorship/advisory committee). The coursework must include Introduction to Health Informatics (MPHP 532/HSMC 432), Foundations of Computing in Biomedical and Health Informatics, and Statistics I (PQHS 431). The student's course plan must be approved by the program steering committee and include appropriate set of course distribution covering the three focus areas of biomedical and health, computation and system design, and data analytics.

The course of study for each trainee will be customized and approved by the student's mentorship/advisory committee to ensure that the students have appropriate interdisciplinary training with core competencies in the three areas of focus. Students are expected to demonstrate competency in the three areas of focus through performance in courses and also by their participation in the program's research seminar. The overall study plan for each student must be completed and approved by the end of the first semester for MS students and by the end of the first year for PhD students.

The students will participate in research seminar, which will include activities for students to review and present research studies. The research seminar is designed to allow students to learn the essential skills for public presentation of research topics. Students are expected to participate in seminar throughout their graduate program. The students in the BHI MS program will conform to the degree requirements of the PQHS MS program requirements as described in details in the MS student handbook (attached with this proposal as **Appendix C**).

4. Program Administration

The BHI program will reside in the School of Medicine and it will be administered by the ICB. ICB will provide support in terms of a gradate coordinator who will coordinate with the

program faculty members and students to schedule program milestones, maintain admissions and financial records. A list of faculty members affiliated with the program will be reviewed periodically and faculty members will be re-appointed by majority vote of the Steering Committee and will consist of all faculty involved in the instruction of required and elective courses as well as training. The Program Director will serve at the pleasure of the Dean of the School of Medicine and will recommend, on a yearly basis, the composition of the Steering Committee for the Dean's approval. The Steering Committee will typically include four members plus the Program Director, for voting purposes.

The Program Director, Steering Committee and Graduate Coordinator are responsible for oversight of all admissions, academic and curricular issues including the addition of new trainers and shall be empowered to form subcommittees to support these functions. Under the auspices of the Office of Graduate Studies, the affiliated faculty will further develop and regularly review and update program requirements, conduct of qualifying examinations, and administer the final Dissertation Examination as per the rules of the University.

Entering students will be assigned a mentoring committee (by the Steering Committee) of two faculty members to guide them the first year and to recommend a course of study. The mentoring committee will guide the coursework choices of the student such that they have completed training in the three focus areas with additional coursework that meets the requirement for distribution of courses. The recommended course of study for each student will be approved by the mentorship/advisory committee to ensure interdisciplinary focus on computing and quantitative research techniques. After admission to candidacy, a PhD student will form a thesis committee that will include both faculty that have expertise in biomedical work (for example, Clinical Informatics or Bioinformatics) and computational or mathematical analysis to guide the thesis research plan such that includes all the three focus areas.

During the first year, the students will have an opportunity to participate in research projects led by the faculty trainers of this program. These research project participations will also conform to the rotations performed by other PhD students in PQHS (see handbook in Appendix). Students in MS Plan A or PhD program can select to continue working on the research project after approval from the student's advisory and mentorship/advisory committee members. The approval will also allow the advisory committee to review and approve the qualifying exam for the PhD student.

Students, at the end of their second year, will generate and defend an NIH or NSF style proposal based on their proposed thesis research in the qualifier exam; successful oral defense of this proposal and completion of core requirements will result in recommendation for formal Ph.D. candidacy. Candidates not successful at this stage have one more opportunity, which must be within 12 months, to defend successfully. A second failure will result in separation from the program.

Program Admission

Students will enter the Biomedical and Health Informatics program through direct admission to the program or through the "umbrella" admissions program of the medical school: the Medical Sciences Training Program (MSTP) http://mstp.case.edu/. Direct admission is for students who know they would like to earn either MS or PhD in biomedical and health informatics. Direct admission to the BHI program will be through the CWRU online application. Prospective students will complete Part A and Part B of the existing Graduate Application. About one-half of all CWRU SOM graduate students matriculate using direct application to a specific PhD program.

The “umbrella” BSTP program is designed to provide students who are interested in earning a PhD in a biomedical field an opportunity to explore various areas of research interest through laboratory rotations, while participating in a coordinated curriculum in cell and molecular biology. Students select an advisor and specific PhD program because of their research rotations and then become a member of that PhD program. The MSTP program is a highly selective combined MD/PhD program. Students in the MSTP Program take PhD course work in conjunction with MD course work. The MSTP students have 20 different PhD programs available to them including Systems Biology and Bioinformatics. Upon completion of their PhD course work, the students will work full time on their PhD and then upon completion of the PhD return to traditional medical school to complete their MD. Approximately 20% of CWRU SOM graduate students matriculate using this mechanism.

Admission to the Graduate School will follow the guidelines denoted in the General Bulletin of CWRU and the admissions committee will be comprised of the program steering committee or its designate. Candidates will be evaluated based on overall GPA and science GPA, GRE scores and performance on advanced tests (if available). Very important criteria will also include the student essay, 3 letters of reference, prior research experience, and on campus interviews. The TOEFL examination will be required for international students. For direct admit students, we will follow the General Bulletin guidelines regarding the demonstration of the necessary command of English for foreign students. MSTP students apply directly to the MSTP program and seek admission into medical school as well as a specific Ph.D. program. The MSTP steering committee reviews all applications and invites qualified students to campus to participate in the traditional medical school interview as well as an interview with potential MSTP mentors whose research focus matches the interests of the MSTP candidate. After the visit to campus, the MSTP Steering Committee makes admission decisions. Admittance to the MSTP program allows the student to pursue a PhD in one of the 20 affiliated PhD programs including BHI program. The MSTP student chooses a PhD program to complete base upon experience in their research rotations.

All program students will be expected to have an undergraduate or master’s degree in one the component disciplines of the program, for example biomedical and health sciences, mathematics and statistics, or computing and information sciences. The following undergraduate courses are strongly recommended for admission to the BHI program: Introductory Computer Science, Introductory Statistics, Introductory Biology, Calculus, Linear Algebra, and Discrete Mathematics. The admissions process will evaluate the suitability of students before they are admitted and will offer remedial course work prior to graduation. The remedial courses may be added to the student’s study program and additional semester of work may be added with no financial or academic penalty to the student.

Tuition Transfer

Tuition return for graduate students enrolled in a degree program, by default, is assigned to the student’s home school. Within the School of Medicine, a tuition sharing arrangement is already in place with a standard rate of $263 per credit hour. There is one course offered by the Weatherhood School of Management (WSOM) that is required of the MS and PhD students, 37.5% of the tuition for MS students taking this course will be transferred to WSOM, after allowing 4 new MS students per year to take it without transfer. There is no transfer of tuition for PhD students since they are generally not income generating (and new SOM rules assess no tuition for PhD students). We note that there has been some movement towards a University policy of tuition sharing for graduate students who take courses in a different school. That has not

happened as of the time of this proposal. If such a policy is accepted, it will be applicable to this program also.

Program Support

At present, first year PhD students are supported by the School of Medicine. In subsequent years, they are supported by individual PIs. Students in the BHI program will be supported in a similar manner. If the student joins a laboratory and support is lost, the mentor's home department will be financially responsible for the student. This support is assured by a required signoff from the mentor's Department Chair. Additional funds to add to these resources are being sought from the strategic plan funding, foundation and philanthropic support. After approval of this program, we plan to apply for NIH training grants to support students in the BHI program.

Classroom Space

The BHI program involves teaching of only 1 new course and we have administrative access to 3 classrooms. Therefore, classroom space for the new program is expected to be adequate.

5. Need for Biomedical and Health Informatics Training

The US Bureau of Labor Statistics projects that employment related to health informatics to grow 22% from 2012 to 2022. Despite this projected growth, the emergent field of health informatics education remains fragmented. According to the American Medical Informatics Association (AMIA), there are approximately 70 advanced degree programs in the United States offering a variety of programs, including institutions such as the University of Cincinnati and Ohio State University. Admission to these programs tends to not be competitive due to high market demand for graduates. Additionally, these programs typically utilize open enrollment policies as a way to generate revenue. There is not a coordinated professional program involving structured activity that balances health care and information technology. Many existing programs are "reactive" to the Affordable Care Act and are not all that relevant to the needs of the US health care system. Levels of technical instruction vary in these open enrollment programs; some courses center more heavily on strategy, others on statistics and "R" programming, and yet others on medicine.

This new interdisciplinary certificate program is designed to meet the increasing demand for clinical or health informatics professionals in healthcare research and biomedical research, both nationally and locally in the Greater Cleveland area and Northeastern Ohio (NEO). Although NEO is home to three renowned hospital systems (Cleveland Clinic Foundation, University Hospitals, The MetroHealth System), there has been a lack of centralized and structured education in clinical and health informaticists in this region. This new program will provide a centralized, coherently structured system that serves the health informatics domain in NEO and will provide a foundation of knowledge and an opportunity for professionals in fields that are increasingly incorporating health informatics into daily operations.

As described earlier, the ICB is an academic collaboration between Case Western Reserve University (CWRU), University Hospitals, and the Cleveland Clinic Foundation. Founded in November 2013, the ICB seeks to expand our fundamental knowledge of human biology and thus

improve our ability to diagnose, treat, prevent, and deliver healthcare through the application of computational methods to large and diverse datasets.

The Department of Population and Quantitative Health Sciences is a proud member of the CWRU School of Medicine. The School of Medicine is affiliated with some of the nation's best hospitals, such as University Hospitals Cleveland Medical Center, Cleveland Clinic Foundation, Veteran's Administration Medical Center, and The MetroHealth System. The proposed MS/PhD program will be administered by the Department of Population and Quantitative Health Sciences.

Notable graduate programs include:

- Biomedical Informatics program at Columbia University. (https://www.dbmi.columbia.edu/)
- Biomedical Informatics program at University of Pittsburgh (www.dbmi.pitt.edu/)
- Biomedical Informatics program at Stanford University (http://bmi.stanford.edu/)
- Medical Informatics program, University of Edinburgh, UK (http://www.ed.ac.uk/studying/postgraduate/degrees/index.php?r=site/view&id=924)

Access and Retention of Underrepresented Groups

Recruitment efforts for the BHI program are collaborative with those already established and ongoing within the MSTP, BSTP, and other programs at CWRU. Special efforts will be made to enroll minority students as part of the CWRU commitment to bringing more minorities and women into advanced fields of study. Although in the field of Basic and Translational Biomedical Research women are not underrepresented at the student and junior faculty levels, the representation of women in informatics is low. Thus, every effort will be made to foster a supportive environment in order to successfully mentor and retain minority and female Ph.D. candidates and guide these students into leadership roles in this new field.

Institutional History and Achievements. CWRU has well-established efforts to recruit and retain under-represented minority students to our graduate and medical schools. In 1971, the Office of Multicultural Programs was established to help and encourage minority students enter careers in medicine and biomedical research. Graduate programs across the campus have been successful in matriculating minority students. In 2007, of 823 domestic applicants, 192 matriculated and 46 were minorities (24%). To ensure that matriculated minority students are supported and are part of a community a Minority Graduate Student Organization (MGSO) was formed. Participation is voluntary, but strongly encouraged, to foster a student group identity and shared values. MGSO meeting topics are varied and cover many issues, including the experiences of the students in research.

The success of the medical and graduate minority recruitment efforts at CWRU can also be attributed to our institutional presence at various historically African American colleges and universities and at scientific conferences organized by underrepresented minority groups. The BHI Program will be represented at these ongoing recruitment efforts. In addition, we plan to send a representative of the Program to the national meeting of the Society for Advancement of Chicanos/Latinos and Native Americans in Science, the Annual Biomedical Research Conference for Minority Students, and the American Medical Informatics Association Annual Symposium.

The number of students enrolled in graduate programs from underrepresented groups has maintained steady over the last 15 years. Enrollment statistics by race:

- African Americans - 6 %

- Asians- between 6 -9%
- Hispanics –between 1-2%
- White between 67% and 53% (the trend of enrollment for white students has steadily decreased in the last 15 years. Currently only 53% of the graduate enrollment is white.
- Other /Unknown – between 4-8%. (the trend of enrollment of students of other/unknown race has fluctuated and is currently at 6%)
- International – between 16% and 22%. (the trend of enrollment of international students is currently 22%)

Additionally, the number of women students enrolled in graduate programs at CWRU has been higher than the number of men enrolled over the last 5 years.

Statewide Alternatives

The CWRU BHI program is distinct from other graduate programs in biomedical and health informatics offered across the state of Ohio. No other university in Ohio offers a MS/Ph.D. program in biomedical and health informatics that has a special emphasis on Big Data. At present, the Ohio State University (OSU) offers a MS program with specialization in biomedical informatics and a Ph.D. program in conjunction with biomedical sciences graduate program with two tracks: Computational Biology and Bioinformatics (CBB) and Translational Bioinformatics (TBI). The CBB track focuses on processing, integration and visualization of genomic sequencing, gene and protein expression profiling, and numerical simulation study data. The TBI track focuses on translation of biomedical data into actionable data for clinicians and researchers. Similarly, the University of Cincinnati (UC) offers a certificate and Ph.D. program in biomedical informatics. The Ph.D. program allows students to develop skills in data-driven biomedical sciences with training in clinical and laboratory information systems as well as general medical science. The UC programs requires at least 37 hours of coursework. The CWRU BHI program has three distinct focus of biomedical and health, quantitative data analytics, and computational and system design, which together with strong expertise in various areas of biomedical and health research, makes it well placed to deliver outstanding training to students. The specific emphasis on Big Data together with a focused biomedical and health informatics graduate program (in contrast to program tracks at OSU) is expected to ensure that the CWRU BHI program attracts students who have significant interest in biomedicine, health, and data sciences.

Due its physical proximity and close collaborative relationships to both University Hospitals and the Cleveland Clinic, the students enrolled in the BHI program will be uniquely positioned to take advantage of a multitude of learning opportunities to enhance their education in the biomedical and health informatics program. The students will have access to regularly scheduled presentations, talks, and seminars at the Cleveland Clinic and the University Hospitals.

SCHOOL OF MEDICINE
CASE WESTERN RESERVE UNIVERSITY

Jonathan L. Haines, PhD
Professor and Chairman
Department of Population & Quantitative Health Sciences
Mary W. Sheldon, MD Professor of Genomic Sciences
Director, Institute for Computational Biology
Wolstein Research Building
Suite 2-529
2103 Cornell Avenue
Cleveland, Ohio 44106
Phone 216.368.3197

August 15, 2017

David Kaelber, MD, PhD, MPH
Professor of Internal Medicine, Pediatrics, Population and Quantitative Health Sciences
Academic Program Co-Director, CWRU Center for Education and Training in Health Informatics
Clinical Informatics Fellowship Director, CWRU Clinical Informatics Fellowship Program

Satya Sahoo, PhD
Associate Professor of Population and Quantitative Health Sciences
Academic Program Co-Director, CWRU Center for Education and Training in Health Informatics

Dear David and Satya,

The Department of Population and Quantitative Health Sciences fully supports this proposal for new interdisciplinary MS and PhD degree programs in Biomedical and Health Informatics. These degrees will fill a void that currently exists here at CWRU. I think this is an important program for the University, and am prepared to provide the necessary resources of faculty and staff time. Students in these degree programs are welcome to take the department courses identified in this proposal.

As indicated in the proposal, Biomedical and Health Informatics is represented in courses across the University but currently there is no entry point at CWRU for healthcare professionals, researchers, and others to gain exposure through a structured and curated program. These new interdisciplinary MS and PhD degree programs will be administered by my department and housed in the ICB I direct, but will be fully collaborative with many other departments across CWRU. These new degree programs will provide current graduate students, healthcare professionals, and researchers the opportunity to further their knowledge of this diverse and ever expanding field.

I am fully committed to supporting these new MS and PhD degree programs.

Sincerely,

Jonathan L. Haines, PhD
Chair, Department of Population & Quantitative Health Sciences
Mary W. Sheldon, MD Professor of Genomic Sciences
Director, Institute for Computational Biology

CASE SCHOOL
OF ENGINEERING
CASE WESTERN RESERVE
UNIVERSITY

James D. McGuffin-Cawley, PhD
Office of the Dean

10900 Euclid Avenue
Cleveland, Ohio 44106-7220

phone 216.368.3227
fax 216.368.6939

engineering.case.edu

September 22, 2017

David Kaelber, MD, PhD, MPH
Professor of Internal Medicine, Pediatrics, Population and Quantitative Health Sciences
Academic Program Co-Director, CWRU Center for Education and Training in Health Informatics
Clinical Informatics Fellowship Director, CWRU Clinical Informatics Fellowship Program

Satya Sahoo, PhD
Associate Professor of Population and Quantitative Health Sciences
Academic Program Co-Director, CWRU Center for Education and Training in Health Informatics

Dear David and Satya,

I am pleased to write this letter in support of the proposal new interdisciplinary MS and PhD degree programs in Biomedical and Health Informatics from the Institute of Computational Biology (ICB). I believe this new degree programs will provide students unique opportunities to expand their quantitative skills and understanding. I particularly like that this proposal is a collaborative effort that spans both departments and schools here at CWRU to maximize current resources.

The new interdisciplinary MS and PhD degree programs in Biomedical and Health Informatics utilize several of our courses for distributional requirements and electives including: EMBE 410, EBME 419, EBME 473, EECS 458, EECS 433, EECS 454, EECS 477, EECS 493, EECS 494 (see Appendix A of the full proposal). I approve the use of these courses for these new degree programs.

Regarding tuition, it is expected that only a small percentage of students in the MS or PhD in Biomedical and Health Informatics program will be able to meet the prerequisites for relevant Engineering classes. We similarly expect students from Engineering in the Computer Science and the developing Data Science graduate programs will be taking courses in SOM/PQHS. Accordingly, we will begin this arrangement with no tuition sharing taking place, with the expectation that this will be reviewed periodically for possible imbalances and addressed as necessary. This tuition sharing agreement will be superseded by any future university-wide agreement on tuition sharing.

I look forward to the approval of these new degree programs.

Sincerely,

James D. McGuffin-Cawley
Interim Dean, Case School of Engineering
Arthur S. Holden Professor of Engineering

CASE WESTERN RESERVE UNIVERSITY
WEATHERHEAD SCHOOL OF MANAGEMENT

Simon Peck
Associate Dean of Graduate Programs
Associate Professor of Strategy
Department of Design & Innovation

Case Western Reserve University
10900 Euclid Ave.
Cleveland, Ohio 44106-7235

Phone: 216/368-3824
Fax: 216/368-4785
E-mail: simon.peck@case.edu
http://weatherhead.case.edu

September 25, 2017

David Kaelber, MD, PhD, MPH
Professor of Internal Medicine, Pediatrics, Population and Quantitative Health Sciences
Academic Program Co-Director, CWRU Center for Education and Training in Health Informatics
Clinical Informatics Fellowship Director, CWRU Clinical Informatics Fellowship Program

Satya Sahoo, PhD
Associate Professor of Population and Quantitative Health Sciences
Academic Program Co-Director, CWRU Center for Education and Training in Health Informatics

Dear David and Satya,

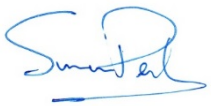
I am pleased to write this letter in support of the proposal new MS and PhD degrees Biomedical and Health Informatics from the Institute of Computational Biology (ICB). I believe these two new degrees will provide students a unique opportunity to expand their quantitative skills and understanding. I particularly like that this proposal is a collaborative effort that spans both departments and schools here at CWRU to maximize current resources.

The MS and PhD degrees in Biomedical and Health Informatics utilizes several of our courses as potential distributional electives: including HSMC 421, HSMC 420, HSMC 412, HSMC 456, and ACCT 401H. Two required core courses for the MS and PhD program will also utilize courses taught by Dr. Alan Dowling. I approve the use of these courses as electives and the one required core course for the proposed degree programs.

Regarding tuition, for MS in Biomedical and Health Informatics students, $750 of the WSOM per credit tuition for the core course(s) (home based in WSOM) will be billed by WSOM to the student's home school. This tuition sharing agreement will be superseded by any future university-wide agreement on tuition sharing.

I look forward to the approval of these exciting new MS and PhD degrees in Biomedical and Health Informatics.

Sincerely,



Simon Peck
Associate Dean of MBA Programs

Electrical Engineering and Computer Science
10900 Euclid Avenue
Glennan Building 321
Cleveland, OH 44106-7071
Phone 216.368.2800
engineering.case.edu/eecs

September 6, 2017

David Kaelber, MD, PhD, MPH
Professor of Internal Medicine, Pediatrics, Population and Quantitative Health Sciences
Academic Program Co-Director, CWRU Center for Education and Training in Health Informatics
Clinical Informatics Fellowship Director, CWRU Clinical Informatics Fellowship Program

Satya Sahoo, PhD
Associate Professor of Population and Quantitative Health Sciences
Academic Program Co-Director, CWRU Center for Education and Training in Health Informatics

Dear David and Satya,

I am pleased to write this letter in support of the proposal for the new interdisciplinary MS and PhD degree programs in Biomedical and Health Informatics from the Institute of Computational Biology (ICB). I believe these new degree programs will provide students unique opportunities to expand their quantitative skills and understanding across multiple fields. I particularly like that this proposal is a collaborative effort that spans departments and schools here at CWRU to maximize current resources.

I understand that the new interdisciplinary MS and PhD degree programs in Biomedical and Health Informatics require the students to choose at least 1 technical elective from the following: EECS 405, EECS 433, EECS 454, EECS 477, EECS 493, and EECS 494. These Electrical Engineering and Computer Science courses have been offered at least once in the past two years, and I anticipate most, if not all, of these courses will be offered in the future. The department will advise the program of any curricular changes in EECS to ensure that such changes are reflected in programmatic requirements of the degree programs, as applicable.

I look forward to collaborating with the faculty and students in this exciting new program.

Sincerely,

Alexis R. Abramson, Ph.D.

Interim Chair, Electrical Engineering and Computer Science
Milton and Tamar Maltz Professor of Energy Innovation

WEATHERHEAD
SCHOOL OF MANAGEMENT
CASE WESTERN RESERVE
UNIVERSITY

Department of Design and Innovation
330 Peter B. Lewis Buliding

10900 Euclid Avenue
Cleveland, Ohio 44106-7235

Phone 216.368.5326
Fax 216.368.4785

weatherhead.case.edu/degrees/phd-management/
design-and-innovation

18 August 2017

David Kaelber, MD, PhD, MPH
Professor of Internal Medicine, Pediatrics, Population and Quantitative Health Sciences
Academic Program Co-Director, CWRU Center for Education and Training in Health Informatics
Clinical Informatics Fellowship Director, CWRU Clinical Informatics Fellowship Program

Satya Sahoo, PhD
Associate Professor of Population and Quantitative Health Sciences
Academic Program Co-Director, CWRU Center for Education and Training in Health Informatics

Dear David and Satya,

I fully support the new interdisciplinary MS and PhD degree programs in Biomedical and Health Informatics. These degree programs will appeal to many students from diverse backgrounds. I am happy to have my course be required for these programs, Introduction to Health Informatics (MPHP 532/HSMC432), and lend my expertise as part of other core courses for the MS and PhD in Biomedical and Health Informatics curriculum.

I look forward to being a part of these new degree programs at CWRU.

Sincerely,

Alan F. Dowling, PhD, MS, MCS

afd4@case.edu
216-533-9200 (c)

Appendix A

Curriculum Requirements for MS in Biomedical and Health Informatics

1. Required core courses (3 courses, 9 credits)
    - Introduction to Health Informatics (MPHP 532/HSMC432)
    - Foundations of Computing in Biomedical and Health Informatics
    - Statistical Methods I (PQHS 431)

2. Required distribution of courses (3 courses, 9 credits), choose one from each core
    - Biomedical and Health (select a course from 4 courses)
    - Computation and System Design (select a course from 5 courses)
    - Data Analytics (select a course from 11 courses)

3. Elective courses (2-3 courses, 6-9 credits), choose additional electives from cores or from other approved electives (14 other courses))
    - Plan A: Concentration-specific elective courses (6 credits)
    - Plan B: Concentration-specific elective courses (9 credits)

4. Required thesis (6 credits, Plan A) or project (3 credits, Plan B)
    - Master's Thesis (PQHS 651, Plan A)
    - Master Project Research (PHQS 601, Plan B)

Total credits - 30

Students may obtain concentration designations as part of their MS in Biomedical and Health Informatics in the following three areas is they fulfill additional distribution requirements:

- Health Informatics Management
- Clinical Informatics
- Bioinformatics

Curriculum Requirements for PhD in Biomedical and Health Informatics

1. Required core courses (3 courses, 9 credits)
    - Introduction to Health Informatics (MPHP 532/HSMC432)
    - Foundations of Computing in Biomedical and Health Informatics
    - Statistical Methods I (PQHS 431)

2. Required distribution of courses (4 courses, 12 credits), choose one course from each core
    - Statistics II (PQHS 432)
    - Biomedical and Health (select a course from 4 courses)
    - Computation and System Design (select a course from 5 courses)
    - Data Analytics (select a course from 11 courses)

3. Elective courses (4 courses, 12 credits), choose additional electives from cores or from other approved electives (14 other courses))
    - The selection of elective courses is made by student in consultation with mentoring/advising committee

4. Required research activities (3 credits)
    - Research Seminar (0 credits - must take for at least 6 semesters)
    - Research Ethics: IBMS 500 (1 credit) AND PQHS 445 (0 credits)
    - Communicating in Population Health Science Research (PQHS 444) (2 x 1 credit)

5. Required Dissertation (at least 18 credits)
    - Required to pass written/oral qualifying exam prior to dissertation credits

Total Credits - at least 54 credits

Curriculum Details for MS/PhD Program in Biomedical and Health Informatics

Three sample programs for PhD. (Required courses in bold)

Example One: Bioinformatics focused PhD program.

Semester 1	**Courses**	**Title**	Credits	Graded or P/F
	MPHP 532/HSMC 432	**Introduction to Health Informatics**	3	Graded
	PQHS 431	**Statistics I**	3	Graded
	EECS 433	Database Systems	3	Graded
	PQHS 501	Research Seminar	0	P/F
		Total Credits	**9**	
Semester 2	New Course	**Foundations of Computing in Biomedical Informatics**	3	Graded
	PQHS 471	Machine Learning & Data Mining	3	Graded
	PQHS 432	**Statistical Methods II**	3	Graded
	PQHS 501	Research Seminar	0	P/F
	PQHS 445	Research Ethics in Population Health Sciences	0	P/F
	IBMS 500	On Being a Professional Scientist: The Responsible Conduct of Research	**1**	P/F
		Total Credits	**10**	
Semester 3	EECS 454	Analysis of Algorithms.	3	Graded
	PQHS 483	Causal Inference	3	Graded
	PQHS 444	Communicating in Population Health Science Research	1	Graded
	PQHS 501	Research Seminar	0	P/F
		Total Credits	**7**	
Semester 4	PQHS 453	Categorical Data Analysis	3	Graded
	EECS 493	Software Engineering	3	Graded
	EECS 494	Introduction to Information Theory	3	Graded
	PQHS 444	Communicating in Population Health Science Research	1	Graded
	PQHS 501	Research Seminar	0	P/F
		Total Credits	**10**	
Semester 5	PQHS 701	Dissertation Ph.D.	3	P/F
	PQHS 501	Research Seminar	0	P/F
Semester 6	PQHS 701	Dissertation Ph.D.	3	P/F
	PQHS 501	Research Seminar	0	P/F
Semester 7	PQHS 701	Dissertation Ph.D.	3	P/F
Semester 8	PQHS 701	Dissertation Ph.D.	3	P/F
Semester 9	PQHS 701	Dissertation Ph.D.	3	P/F
Semester 10	PQHS 701	Dissertation Ph.D.	3	P/F
		Total Credits for 5 year Ph.D. Program	**54**	

Example Two: Clinical Informatics focused PhD program.

Semester 1	**Courses**	**Title**	Credits	Graded or P/F
	MPHP 532/HSMC 432	**Introduction to Health Informatics**	3	Graded
	PQHS 431	**Statistics I**	3	Graded
	PQHS 440	Introduction to Population Health	3	Graded
	PQHS 501	Research Seminar	0	P/F
		Total Credits	**9**	
Semester 2	New Course	**Foundations of Computing in Biomedical Informatics**	3	Graded
	PQHS 432	**Statistics II**	3	Graded
	EECS 443	Database Systems	3	Graded
	PQHS 501	Research Seminar	0	P/F
	PQHS 445	Research Ethics in Population Health Sciences	0	P/F
	IBMS 500	On Being a Professional Scientist: The Responsible Conduct of Research	**1**	P/F
		Total Credits	**10**	
Semester 3	PQHS 515	Secondary Analysis of Large Health Care Data Sets	3	Graded
	HSMC 420	Health Finance	3	Graded
	PQHS 468	The Continual Improvement of Healthcare	3	Graded
	PQHS 444	Communicating in Population Health Science Research	1	Graded
	PQHS 501	Research Seminar	0	P/F
		Total Credits	**10**	
Semester 4	PQHS 467	Comparative and Cost Effectiveness Research	3	Graded
	PQHS 459	Longitudinal Data Analysis	3	Graded
	PQHS 444	Communicating in Population Health Science Research	1	Graded
	PQHS 501	Research Seminar	0	P/F
		Total Credits	**7**	
Semester 5	PQHS 701	Dissertation Ph.D.	3	P/F
	PQHS 501	Research Seminar	0	P/F
Semester 6	PQHS 701	Dissertation Ph.D.	3	P/F
	PQHS 501	Research Seminar	0	P/F
Semester 7	PQHS 701	Dissertation Ph.D.	3	P/F
Semester 8	PQHS 701	Dissertation Ph.D.	3	P/F
Semester 9	PQHS 701	Dissertation Ph.D.	3	P/F
Semester 10	PQHS 701	Dissertation Ph.D.	3	P/F
		Total Credits for 5 year Ph.D. Program	**54**	

Example Three: Public Health/Analytics focused PhD program.

Semester 1	**Courses**	**Title**	Credits	Graded or P/F
	MPHP 532/HSMC 432	**Introduction to Health Informatics**	3	Graded
	PQHS 431	**Statistics I**	3	Graded
	PQHS 490	Epidemiology: Introduction to Theory and Methods	3	Graded
	PQHS 501	Research Seminar	0	P/F
		Total Credits	**9**	
Semester 2	New Course	**Foundations of Computing in Biomedical Informatics**	3	Graded
	PQHS 432	**Statistics II**	3	Graded
	PQHS 465	Design and Measurement in Population Health Sciences	3	Graded
	PQHS 501	Research Seminar	0	P/F
	PQHS 445	Research Ethics in Population Health Sciences	0	P/F
	IBMS 500	On Being a Professional Scientist: The Responsible Conduct of Research	**1**	P/F
		Total Credits	**10**	
Semester 3	MPHP 406	History and Philosophy of Public Health	3	Graded
	PQHS 515	Secondary Analysis of Large Health Care Data Sets	3	Graded
	PQHS 440	Introduction to Population Health	3	Graded
	PQHS 444	Communicating in Population Health Science Research	1	Graded
	PQHS 501	Research Seminar	0	P/F
		Total Credits	**10**	
Semester 4	PQHS 459	Longitudinal Data Analysis	3	Graded
	PQHS 471	Machine Learning & Data Mining	3	Graded
	PQHS 444	Communicating in Population Health Science Research	1	Graded
	PQHS 501	Research Seminar	0	P/F
		Total Credits	**7**	
Semester 5	PQHS 701	Dissertation Ph.D.	3	P/F
	PQHS 501	Research Seminar	0	P/F
Semester 6	PQHS 701	Dissertation Ph.D.	3	P/F
	PQHS 501	Research Seminar	0	P/F
Semester 7	PQHS 701	Dissertation Ph.D.	3	P/F
Semester 8	PQHS 701	Dissertation Ph.D.	3	P/F
Semester 9	PQHS 701	Dissertation Ph.D.	3	P/F
Semester 10	PQHS 701	Dissertation Ph.D.	3	P/F
		Total Credits for 5 year Ph.D. Program	**54**	

Example Curriculum Outline: MS in Biomedical and Health Informatics

Year-by-year outline of study for the MS. Plans A and B: Required courses in Bold. Electives also listed.

Semester 1	**Courses**	**Title**	Credits	Graded or P/F
	MPHP 532/HSMC 432	**Introduction to Health Informatics**	3	Graded
	PQHS 431	**Statistics I**	3	Graded
	EECS 433	Database Systems	3	Graded
		Total Credits	**9**	
Semester 2	New Course	**Foundations of Computing in Biomedical Informatics**	3	Graded
	PQHS 471	Machine Learning & Data Mining	3	Graded
	PQHS 432	Statistical Methods II	3	Graded
	PQHS 501	Research Seminar	0	P/F
		Total Credits	**9**	
Semester 3	EECS 493	Software Engineering	3	Graded
	PQHS 432	Statistical Methods II	3	Graded
	Plan A: PQHS 651	Master's Thesis **(Plan A)**	3 **(A)**	P/F
	Plan B: ACCT 401H	Accounting for Healthcare **(Plan B)**	3 **(B)**	Graded
		Total Credits	**9**	
Semester 4	**Plan A:** PQHS 651	Master's Thesis **(Plan A)**	3 **(A)**	P/F
	Plan B: PQHS 601	Master's Project Research (Plan A)/Elective Course **(Plan B)**	3 **(B)**	P/F
		Total Credits	**3**	
		Total Credits for M.S. Program	**30**	

Academic Requirements for Master's Degree in Biomedical and Health Informatics

Plan A – MS with a thesis based on research and final oral examination
Plan B – MS requiring written comprehensive examinations or major project (no thesis)

Required: **Core** Course Descriptions
Total number of course: 3
Total course credits: 9

Course Number: MPHP 532/HSMC432
Course Title: Introduction to Health informatics/ Health Informatics Core Issues
Offered:
Duration: 1 semester
Credits: 3
Purpose: Introduction to biomedical and healthcare informatics, use of computational techniques in biomedical and healthcare settings, focus on clinical, biological, translational, and public health informatics. Review the use of computing technologies in biomedical and healthcare research as well as applications. Introduction to electronic health records (EHR), use of EHR systems in biomedical research, patient care, and impact of computing technology on healthcare. Explore the information requirements of healthcare and user community, current approaches to biomedical and healthcare data management.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

NEW COURSE
Course Title: Foundations of Computing in Biomedical and Health Informatics
Offered:
Duration: 1 semester
Credits: 3
Purpose: Explore techniques in programming and mathematical foundations of data analysis in biomedical and healthcare context. The topics include algorithm design and analysis, logic and reasoning foundations, data management concepts, including survey of database management systems. Explore natural language processing techniques, information retrieval, and image informatics. Introduction to Big Data technologies, including parallel and distributed computing, cloud infrastructure, and scalable systems.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 431
Course Title: Statistics I
Offered:
Duration: 1 semester
Credits: 3
Purpose: Application of statistical techniques with particular emphasis on problems in the biomedical sciences. Basic probability theory, random variables, and distribution functions. Point and interval estimation, regression, and correlation. Problems whose solution involves using packaged statistical programs. First part of year-long sequence. Offered as ANAT 431, BIOL 431, CRSP 431, PQHS 431 and MPHP 431.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Required: **Biomedical and Health** Course Descriptions
Total number of course: 1

Total course credits: 3

Course Number: EBME 410
Course Title: Medical Imaging Fundamentals
Offered:
Duration: 1 semester
Credits: 3
Purpose: Physical principles of medical imaging. Imaging devices for x-ray, ultrasound, magnetic resonance, etc. Image quality descriptions. Patient risk. Recommended preparation: EBME 308 and EBME 310 or equivalent. Prereq: Graduate standing or Undergraduate with Junior or Senior standing and a cumulative GPA of 3.2 or above
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: MPHP 406
Course Title: History and Philosophy of Public Health
Offered:
Duration: 1 semester
Credits: 3
Purpose: The purpose of this course is to introduce students to the science and art of public health through an understanding of the history and philosophies that represent its foundation. Students will learn about the essentials of public health and applications of those precepts throughout history and in the present. The course will examine public health case histories and controversies from the past and present, in order to better understand solutions for the future. Offered as MPHP 306 and MPHP 406. Prereq: Enrollment limited to MPH students (Plan A or Plan B) and EPBI students or instructor consent.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 440
Course Title: Introduction to Population Health
Offered:
Duration: 1 semester
Credits: 3
Purpose: Introduces graduate students to the multiple determinants of health including the social, economic and physical environment, health services, individual behavior, genetics and their interactions. It aims to provide students with the broad understanding of the research development and design for studying population health, the prevention and intervention strategies for improving population health and the disparities that exist in morbidity, mortality, functional and quality of life. Format is primarily group discussion around current readings in the field; significant reading is required.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 451
Course Title: A Data-Driven Introduction to Genomics and Human Health
Offered:
Duration: 1 semester

Credits: 3
Purpose: This course introduces the foundational concepts of genomics and genetic epidemiology through four key principles: 1) Teaching students how to query relational databases using Structure Query Language (SQL); 2) Exposing students to the most current data used in genomics and bioinformatics research, providing a quantitative understanding of biological concepts; 3) Integrating newly learned concepts with prior ones to discover new relationships among biological concepts; and 4) providing historical context to how and why data were generated and stored in the way they were, and how this gave rise to modern concepts in genomics. Offered as PQHS 451, GENE 451, and MPHP 451. Prereq: PQHS 431, PQHS 490 or requisites not met permission.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 465
Course Title: Design and Measurement in Population Health Sciences
Offered:
Duration: 1 semester
Credits: 3
Purpose: This course focuses on common design and measurement approaches used in population health sciences research. This course covers the preliminary considerations used in selecting qualitative, quantitative and mixed methods research approaches including an understanding of different philosophical worldviews, strategies of inquiry and methods and procedures for each approach. The course also includes an introduction to survey design and related concepts of latent variables, factor analysis and reliability and validity. Students will develop an in-depth knowledge of these design and measurement approaches through readings, lectures, group discussions and written and oral project presentations. Prereq: PQHS 440, PQHS 431, PQHS 490, PQHS 432, PQHS 460, PQHS 444 and PQHS 445.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 490
Course Title: Epidemiology: Introduction to Theory and Methods
Offered:
Duration: 1 semester
Credits: 3
Purpose: This course provides an introduction to the principles of epidemiology covering the basic methods necessary for population and clinic-based research. Students will be introduced to epidemiologic study designs, measures of disease occurrence, measures of risk estimation, and casual inference (bias, confounding, and interaction) with application of these principles to specific fields of epidemiology. Classes will be a combination of lectures, discussion, and in-class exercises. It is intended for students who have a basic understanding of the principals of human disease and statistics. Offered as PQHS 490 and MPHP 490. Prereq or Coreq: PQHS 431 or requisites not met permission.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Required: **Computation and System Design** Course Descriptions
Total number of course: 1

Total course credits: 3

Course Number: EECS 458
Course Title: Introduction to Bioinformatics
Offered:
Duration: 1 semester
Credits: 3
Purpose: Fundamental algorithmic methods in computational molecular biology and bioinformatics discussed. Sequence analysis, pairwise and multiple alignment, probabilistic models, phylogenetic analysis, folding and structure prediction emphasized. Recommended preparation: EECS 340, EECS 233
Assessment of Competency: Grades

Course Number: EECS 433
Course Title: Database Systems
Offered:
Duration: 1 semester
Credits: 3
Purpose: Basic issues in file processing and database management systems. Physical data organization. Relational databases. Database design. Relational Query Languages, SQL. Query languages. Query optimization. Database integrity and security. Object-oriented databases. Object-oriented Query Languages, OQL. Recommended preparation: EECS 341 and MATH 304.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: EECS 454
Course Title: Analysis of Algorithms
Offered:
Duration: 1 semester
Credits: 3
Purpose: This course covers fundamental topics in algorithm design and analysis in depth. Amortized analysis, NP-completeness and reductions, dynamic programming, advanced graph algorithms, string algorithms, geometric algorithms, local search heuristics. Offered as EECS 454 and OPRE 454. Prereq: EECS 340.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: EECS 477
Course Title: Advanced Algorithms
Offered:
Duration: 1 semester
Credits: 3
Purpose: Design and analysis of efficient algorithms, with emphasis on network flow, combinatorial optimization, and randomized algorithms. Linear programming: duality, complementary slackness, total unimodularity. Minimum cost flow: optimality conditions, algorithms, applications. Game theory: two-person zero-sum games, minimax theorems. Probabilistic analysis and randomized algorithms: examples and lower bounds. Approximation algorithms for NP-hard problems: examples, randomized rounding of linear programs.

Prereq: EECS 302, EECS 340, MATH 201, MATH 380
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: EECS 493
Course Title: Software Engineering
Offered:
Duration: 1 semester
Credits: 3
Purpose: Introduction to software engineering; software lifecycle models; development team organization and project management; requirements analysis and specification techniques; software design techniques; programming practices; software validation techniques; software maintenance practices; software engineering ethics. Undergraduates work in teams to complete a significant software development project. Graduate students are required to complete a research project. Offered as EECS 393, EECS 393N, and EECS 493. Counts as SAGES Senior Capstone.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 471
Course Title: Machine Learning & Data Mining
Offered:
Duration: 1 semester
Credits: 3
Purpose: Vast amount of data are being collected in medical and social research and in many industries. Such big data generate a demand for efficient and practical tools to analyze the data and to identify unknown patterns. We will cover a variety of statistical machine learning techniques (supervised learning) and data mining techniques (unsupervised learning), with data examples from biomedical and social research. Specifically, we will cover prediction model building and model selection (shrinkage, Lasso), classification (logistic regression, discriminant analysis, k-nearest neighbors), tree-based methods (bagging, random forests, boosting), support vector machines, association rules, clustering and hierarchical clustering. Basic techniques that are applicable to many of the areas, such as cross-validation, the bootstrap, dimensionality reduction, and splines, will be explained and used repeatedly. The field is fast evolving and new topics and techniques may be included when necessary. Prereq: PQHS 431
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Required: **Data Analytics** Course Descriptions
Total number of course: 2
Total course credits: 6

Required Course for PhD
Course Number: PQHS 432
Course Title: Statistical Methods II
Offered:
Duration: 1 semester

Credits: 3
Purpose: Methods of analysis of variance, regression and analysis of quantitative data. Emphasis on computer solution of problems drawn from the biomedical sciences. Design of experiments, power of tests, and adequacy of models. Offered as BIOL 432, PQHS 432, CRSP432 and MPHP 432. Prereq: PQHS 431 or equivalent.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: EBME 419
Course Title: Applied Probability and Stochastic Processes for Biology
Offered:
Duration: 1 semester
Credits: 3
Purpose: Applications of probability and stochastic processes to biological systems. Mathematical topics will include: introduction to discrete and continuous probability spaces (including numerical generation of pseudo random samples from specified probability distributions), Markov processes in discrete and continuous time with discrete and continuous sample spaces, point processes including homogeneous and inhomogeneous Poisson processes and Markov chains on graphs, and diffusion processes including Brownian motion and the Ornstein-Uhlenbeck process. Biological topics will be determined by the interests of the students and the instructor. Likely topics include: stochastic ion channels, molecular motors and stochastic ratchets, actin and tubulin polymerization, random walk models for neural spike trains, bacterial chemotaxis, signaling and genetic regulatory networks, and stochastic predator-prey dynamics. The emphasis will be on practical simulation and analysis of stochastic phenomena in biological systems. Numerical methods will be developed using a combination of MATLAB, the R statistical package, MCell, and/or URDME, at the discretion of the instructor. Student projects will comprise a major part of the course. Offered as BIOL 319, EECS 319, MATH 319, SYBB 319, BIOL 419, EBME 419, MATH 419, PHOL 419, and SYBB 419
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 459
Course Title: Longitudinal Data Analysis
Offered:
Duration: 1 semester
Credits: 3
Purpose: This course will cover statistical methods for the analysis of longitudinal data with an emphasis on application in biological and health research. Topics include exploratory data analysis, response feature analysis, growth curve models, mixed-effects models, generalized estimating equations, and missing data. Prereq: PQHS 432.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 453
Course Title: Categorical Data Analysis
Offered:
Duration: 1 semester
Credits: 3
Purpose: Categorical data are often encountered in many disciplines including in the fields of clinical and

biological sciences. Analysis methods for analyzing categorical data are different from the analysis methods for continuous data. There is a rich a collection of methods for categorical data analysis. The elegant "odds ratio" interpretation associated with categorical data is a unique one. This online course will cover cross-sectional categorical data analysis theories and methods. From this course students will learn standard categorical data analysis methods and its applications to the biomedical and clinical studies. This particular course will focus mostly on statistical methods for categorical data analysis arising from various fields of studies including clinical studies; those who take it will come from a wide variety of disciplines. The course will include video lectures, group discussion and brainstorming, homework, simulations, and collaborative projects on real and realistic problems in human health tied directly to the student's own professional interests. Focus will be given to logistic regression methods. Topics include (but not limited to) binary response, multi-category response, count response, model selection and evaluation, exact inference, Bayesian methods for categorical data, and supervised statistical learning methods. This course stresses how the core statistical principles, computing tools, and visualization strategies are used to address complex scientific aims powerfully and efficiently, and to communicate those findings effectively to researchers who may have little or no experience in these methods. Recommended preparation: Advanced undergraduate students, and graduate students in Biostatistics or other quantitative sciences with a background in statistical methods (at least one statistics course, equivalent to the PQHS 431 course experience)
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 515
Course Title: Secondary Analysis of Large Health Care Data Sets
Offered:
Duration: 1 semester
Credits: 3
Purpose: Development of skills in working with the large-scale secondary data bases generated for research, health care administration/billing, or other purposes. Students will become familiar with the content, strength, and limitations of several data bases; with the logistics of obtaining access to data bases; the strengths and limitations of routinely collected variables; basic techniques for preparing and analyzing secondary data bases and how to apply the techniques to initiate and complete empirical analysis. Recommended preparation: PQHS 414 or equivalent; PQHS 431 or PQHS 460 and PQHS 461 (for HSR students).
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 458
Course Title: Statistical Methods for Clinical Trials
Offered:
Duration: 1 semester
Credits: 3
Purpose: This course will focus on special statistical methods and philosophical issues in the design and analysis of clinical trials. The emphasis will be on practically important issues that are typically not covered in standard biostatistics courses. Topics will include: randomization techniques, intent-to-treat analysis, analysis of compliance data, equivalency testing, surrogate endpoints, multiple comparisons, sequential testing, and Bayesian methods. Offered as PQHS 458 and MPHP 458. Prereq: PQHS 432 or MPHP 432.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 467

Course Title: Comparative and Cost Effectiveness Research
Offered:
Duration: 1 semester
Credits: 3
Purpose: Comparative effectiveness research is a cornerstone of healthcare reform. It holds the promise of improved health outcomes and cost containment. This course is presented in a convenient 5-day intensive format in June. There are reading assignments due prior to the 1st session. Module A, Days 1-2: Overview of comparative effectiveness research (CER) from a wide array of perspectives: individual provider, institution, insurer, patient, government, and society. Legal, ethical and social issues, as well as implications for population and public health, including health disparities will also be a component. Module B, Day 3: Introduction to the various methods, and their strengths, weaknesses and limitations. How to read and understand CER papers. Module C, Days 4-5: Cost-Effectiveness Analysis. This will cover costing, cost analysis, clinical decision analysis, quality of life and cost-effectiveness analysis for comparing alternative health care strategies. Trial version of TreeAge software will be used to create and analyze a simple cost-effectiveness model. The full 3-credit course is for taking all 3 modules. Modules A or C can be taken alone for 1 credit. Modules A and B or Modules B and C can be taken together for a total of 2 credits. Module B cannot be taken alone. If taking for 2 or 3 credits, some combination of term paper, project and/or exam will be due 30 days later. Offered as PQHS 467 and MPHP 467
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Required: PhD Courses Descriptions
Total number of course: 2
Total course credits: 2

Course Number: PQHS 444
Course Title: Communicating in Population Health Science Research
Offered:
Duration: 1 semester
Credits: 2
Purpose: Doctoral seminar on writing journal articles to report original research, and preparing and making oral and poster presentations. The end products are ready-to-submit manuscripts and related slide and poster presentations for the required first-year research project in the PhD program in the Department of Epidemiology and Biostatistics. While this course provides a nucleus for this endeavor, students work intensively under the supervision of their research mentors, who guide all stages of the work including providing rigorous editorial support. Seminar sessions are devoted to rigorous peer critiques of every stage of the projects and to in-depth discussions of assigned readings. Recommended preparation: PhD students in the Department of Biostatistics and Epidemiology. Non-PhD EPBI students permitted if space available. Fluency in English writing (e.g., in accord with the Harbrace College Handbook). Prereq: EPBI 431 and EPBI 490. Coreq: EPBI 432.
Course Format: Formal classroom-based course/Mentor
Assessment of Competency: Grades

Course Number: PQHS 501
Course Title: Research Seminar
Offered:

Duration: 1 semester
Credits: 0
Purpose: This seminar series includes faculty and guest-lecturer presentations designed to introduce students to on-going research at the University and elsewhere. Seminars will emphasize the application of methods learned in class, as well as the introduction of new methods and tools useful in research.
Course Format: Classroom seminar
Assessment of Competency: P/F

Electives

Course Number: ACCT 401H
Course Title: Accounting for Healthcare
Offered:
Duration: 1 semester
Credits: 3
Purpose: This course exposes MSM-Healthcare students to ways that accounting information helps managers monitor and improve the performance of organizations. After studying the nature and limitations of accounting information, we explore how financial, cost, tax, and regulatory accounting are used by various stakeholders. From this effort, students become comfortable evaluating accounting recognition, valuation, classification, and disclosure issues that arise in an executive's career. Finally, we study how accounting is a feedback loop that enables managers to assess consequences of past decisions and think about what should be done going forward. Feedback loops, in turn, can give rise to observer effects and/or unpredictable outcomes. Course content contributes to achieving the program goal of strengthening a student's ability to promote positive change in healthcare. Prereq: MSM Healthcare students only.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: BETH 417
Course Title: Introduction to Public Health Ethics
Offered:
Duration: 1 semester
Credits: 3
Purpose: The course will introduce students to theoretical and practical aspects of ethics and public health. This course will help students develop the analytical skills necessary for evaluating of ethical issues in public health policy and public health prevention, treatment, and research. Will include intensive reading and case-based discussions. Evaluation based on class participation, a written exercise and a case analysis. Open to graduate students with permission from instructors
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: BETH 503
Course Title: Research Ethics and Regulation
Offered:
Duration: 1 semester
Credits: 3

Purpose: This course is designed to introduce students to the ethical, policy, and legal issues raised by research involving human subjects. It is intended for law students, post-doctoral trainees in health-related disciplines and other students in relevant fields. Topics include (among others): regulation and monitoring of research; research in third-world nations; research with special populations; stem cell and genetic research; research to combat bioterrorism; scientific misconduct; conflicts of interest; commercialization and intellectual property; and the use of deception and placebos. Course will meet once per week for 2 hours throughout the semester. Grades will be given based on class participation and a series of group projects and individual short writing assignments. Offered as BETH 503, CRSP 603 and LAWS 5225
Assessment of Competency: Grades

Course Number: BETH 422
Course Title: Clinical Ethics: Theory & Practice
Offered:
Duration: 1 semester
Credits: 3
Purpose: This course will focus on both theoretical and practical issues in clinical ethics. Clinical ethics will be distinguished from other areas of bioethics by highlighting distinctive features of the clinical context which must be taken into account in clinical ethics policy and practice. Fundamental moral and political foundations of clinical ethics will be examined, as will the role of bioethical theory and method in the clinical context. Topical issues to be considered may include informed consent; decision capacity; end of life decision making; confidentiality and privacy; the role and function of ethics committees; ethics consultation; the role of the clinical ethicist; decision making in various pediatric settings (from neonatal through adolescent); the role of personal values in professional life (e.g., rights of conscience issues, self disclosure and boundary issues); dealing with the chronically non-adherent patient; ethical issues in organ donation and transplant; health professional-patient communication; medical mistakes; and other ethical issues that emerge in clinical settings.
Assessment of Competency: Grades

Course Number: CRSP 401
Course Title: Introduction to Clinical Research Summer Series
Offered:
Duration: 1 semester
Credits: 3
Purpose: This course is designed to familiarize one with the language and concepts of clinical investigation and statistical computing, as well as provide opportunities for problem-solving, and practical application of the information derived from the lectures. The material is organized along the internal logic of the research process, beginning with mechanisms of choosing a research question and moving into the information needed to design the protocol, implement it, analyze the findings, and draw and disseminate the conclusion(s). Prereq: M.D., R.N., Ph.D., D.D.S., health professionals.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: EECS 494
Course Title: Introduction to Information Theory
Offered:
Duration: 1 semester
Credits: 3
Purpose: This course is intended as an introduction to information and coding theory with emphasis on the

mathematical aspects. It is suitable for advanced undergraduate and graduate students in mathematics, applied mathematics, statistics, physics, computer science and electrical engineering. Course content: Information measures-entropy, relative entropy, mutual information, and their properties. Typical sets and sequences, asymptotic equipartition property, data compression. Channel coding and capacity: channel coding theorem. Differential entropy, Gaussian channel, Shannon-Nyquist theorem. Information theory inequalities (400 level). Additional topics, which may include compressed sensing and elements of quantum information theory. Recommended Preparation: MATH 201 or MATH 307. Offered as MATH 394, EECS 394, MATH 494 and EECS 494.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: HSMC 412
Course Title: Lean Services Operations
Offered:
Duration: 1 semester
Credits: 3
Purpose: The course will be delivered over four modules: 1) Service Process Blueprints, 2) Managing Capacity in Service Systems, 3) Mapping the Value Stream (current and future state), and 4) Inventory Management in Service Systems. The topics considered are viewed in the context of healthcare management, financial services, insurance firms, call centers, back-office operations, and other applications. Through these topics, the participants will be trained in tools that help them understand customers' expectations and needs and to identify service system characteristics that can meet these needs. We will learn how to identify errors in service and troubleshoot these problems by identifying the root causes of errors. Subsequently, we will discuss how one can modify the product or service design so as to prevent defects from occurring. Finally, we will establish performance metrics that help evaluate the effectiveness of the Lean system in place. These efforts will result to improved quality. This course is not oriented toward specialists in service management. Its goal is to introduce you to the environments and help you appreciate the problems that operations managers are confronted with. Then, we will typically discuss some system specifics and emphasize the principles and issues that play key role in their management. Offered as HSMC 412 and OPMT 412.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: HSMC 420
Course Title: Health Finance
Offered:
Duration: 1 semester
Credits: 3
Purpose: Exploration of economic, medical, financial and payment factors in the U.S. healthcare system sets the framework for the study of decisions by providers, insurers, and purchasers in this course. The mix of students from various programs and professions allows wide discussion from multiple viewpoints. Offered as BAFI 420 and HSMC 420. Prereq: ACCT 401 or ACCT 401H
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: HSMC 421
Course Title: Health Economics and Strategy
Offered:

Duration: 1 semester
Credits: 3
Purpose: This course has evolved from a theory-oriented emphasis to a course that utilizes economic principles to explore such issues as health care pricing, anti-trust enforcement and hospital mergers, choices in adoption of managed care contracts by physician groups, and the like. Instruction style and in-class group project focus on making strategic decisions. The course is directed for a general audience, not just for students and concentration in health systems management. Offered as ECON 421, HSMC 421, and MPHP 421.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: HSMC 456
Course Title: Health Policy and Management Decisions
Offered:
Duration: 1 semester
Credits: 3
Purpose: This seminar course combines broad health care policy issue analysis with study of the implications for specific management decisions in organizations. This course is intended as an applied, practical course where the policy context is made relevant to the individual manager. Offered as HSMC 456 and MPHP 456.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: IBMS 500
Course Title: On Being a Professional Scientist: The Responsible Conduct of Research
Offered:
Duration: 1 semester
Credits: 1
Purpose: The goal of this course is to provide graduate students with an opportunity to think through their professional ethical commitments before they are tested, on the basis of the scientific community's accumulated experience with the issues. Students will be brought up to date on the current state of professional policy and federal regulation in this area, and, through case studies, will discuss practical strategies for preventing and resolving ethical problems in their own work. The course is designed to meet the requirements for "instruction about responsible conduct in research" for BSTP and MSTP students supported through NIH/ADAMHA institutional training grant programs at Case. Attendance is required.
Assessment of Competency: Grades

Course Number: NEUR 478
Course Title: Computational Neuroscience
Offered:
Duration: 1 semester
Credits: 3
Purpose: Computer simulations and mathematical analysis of neurons and neural circuits, and the computational properties of nervous systems. Students are taught a range of models for neurons and neural circuits, and are asked to implement and explore the computational and dynamic properties of these models. The course introduces students to dynamical systems theory for the analysis of neurons and neural learning, models of brain systems, and their relationship to artificial and neural networks. Term project required. Students enrolled in MATH 478 will make arrangements with the instructor to attend additional lectures and complete additional assignments addressing mathematical topics related to the course. Recommended

preparation: MATH 223 and MATH 224 or BIOL 300 and BIOL 306. Offered as BIOL 378, COGS 378, MATH 378, BIOL 478, EBME 478, EECS 478, MATH 478 and NEUR 478.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 457
Course Title: Current Issues in Genetic Epidemiology: Design and Analysis of Sequencing Studies.
Offered:
Duration: 1 semester
Credits: 3
Purpose: Statistical methods to deal with the opportunities and challenges in Genetic Epidemiology brought about by modern sequencing technology. Some computational issues that arise in the analysis of large sequence data sets will be discussed. The course includes hands-on experience in the analysis of large sequence data sets, in a collaborative setting. Prereq: PQHS 451 and PQHS 452.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 468
Course Title: The Continual Improvement of Healthcare: An Interdisciplinary Course
Offered:
Duration: 1 semester
Credits: 3
Purpose: This course prepares students to be members of interprofessional teams to engage in the continual improvement in health care. The focus is on working together for the benefit of patients and communities to enhance quality and safety. Offered as PQHS 468, MPHP 468, NURS 468.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: PQHS 651
Course Title: MS Thesis
Offered:
Duration: 1-2 semesters
Credits: 1-6 units per semester
Purpose: Master's thesis course
Assessment of Competency:

Course Number: SYBB 459
Course Title: Bioinformatics for Systems Biology
Offered:
Duration: 1 semester
Credits: 3
Purpose: Description of omic data (biological sequences, gene expression, protein-protein interactions, protein-DNA interactions, protein expression, metabolomics, biological ontologies), regulatory network inference, topology of regulatory networks, computational inference of protein-protein interactions, protein interaction databases, topology of protein interaction networks, module and protein complex discovery, network alignment and mining, computational models for network evolution, network-based functional

inference, metabolic pathway databases, topology of metabolic pathways, flux models for analysis of metabolic networks, network integration, inference of domain-domain interactions, signaling pathway inference from protein interaction networks, network models and algorithms for disease gene identification, identification of dysregulated subnetworks network-based disease classification. Offered as EECS 459 and SYBB 459.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Course Number: SYBB 421/ EBME 473
Course Title: Fundamentals of Clinical Information Systems.
Offered:
Duration: 1 semester
Credits: 3
Purpose: Technology has played a significant role in the evolution of medical science and treatment. While we often think about progress in terms of the practical application of, say, imaging to the diagnosis and monitoring of disease, technology is increasingly expected to improve the organization and delivery of healthcare services, too. Information technology plays a key role in the transformation of administrative support systems (finance and administration), clinical information systems (information to support patient care), and decision support systems (managerial decision-making). This introductory graduate course provides the student with the opportunity to gain insight and situational experience with clinical information systems (CIS). Often considered synonymous with electronic medical records, the "art" of CIS more fundamentally examines the effective use of data and information technology to assist in the migration away from paper-based systems and improve organizational performance. In this course, we examine clinical information systems in the context of (A) operational and strategic information needs, (B) information technology and analytic tools for workflow design, and (C) subsequent implementation of clinical information systems in patient care. Legal and ethical issues are explored. The student learns the process of "plan, design, implement" through hands-on applications to select CIS problems, while at the same time gaining insights and understanding of the impacts placed on patients and health care providers. Offered as EBME 473, IIME 473 and SYBB 421.
Course Format: Formal classroom-based course
Assessment of Competency: Grades

Faculty Trainers (Confirmed and Potential Faculty Members)

Alan Dowling, PhD, MCS, MS
David Kaelber, MD, PhD, MPH, FAAP, FACP, FACMI
Satya Sahoo, PhD
Colin Drummond, PhD, MBA
Mendel Singer, PhD, MPH
Rong Xu, PhD
William Bush, PhD
Dana Crawford, PhD
Mehmet Koyuturk, PhD
Jing Li, PhD
Jill S. Barnholtz-Sloan, PhD

2017 – 2018

Department of Population & Quantitative Health Sciences

Student Handbook

PhD in Epidemiology & Biostatistics

SCHOOL OF MEDICINE
CASE WESTERN RESERVE UNIVERSITY

Department of Population & Quantitative Health Sciences

School of Medicine, Wood Building, Room WG-57
Case Western Reserve University
10900 Euclid Avenue
Cleveland, Ohio 44106-4945
http://epbiwww.case.edu

Jonathan Haines, PhD
Chair, Mary W. Sheldon Professor of Genomic Sciences

Ena McDowell
Assistant to the Chair

Scott Williams, PhD
Graduate Program Director
Email: scott.m.williams@case.edu
Phone: 216.368.5659

Mendel Singer, PhD, MPH
Vice Chair for Education, Department of Population & Quantitative Health Sciences
Email: mendel@case.edu
Phone: 216.368.1951

Nickalaus Koziura, EdM
Administrative Director of Non-Clinical Graduate Education
Email: nickalaus.koziura@case.edu
Phone: 216.368.5957

School of Graduate Studies
Tomlinson Hall, Room 203
(216) 368-4390 (phone)
(800) 368-4723 (toll free)
(216) 368-2000 (fax)
gradstudies.case.edu

Charles Rozek, PhD, Vice Provost & Dean

Lynmarie Hamel, JD, Associate Dean of Graduate Studies

Brandon Bowman, Manager of Graduate Academic Affairs

Additional University Offices

Access Services (IDs & Parking)
Crawford Hall, Room 18
(216) 368-2273
www.case.edu/finadmin/security/access/access.htm

Career Center
Sears Building, Room 206
(216) 368-4446
studentaffairs.case.edu/careers

Financial Aid
Yost Hall, Room 417A
(216) 368-4530
finaid.case.edu

Free Computer Support & Service
11424 Bellflower Rd.
(216) 368-4357
help.case.edu

Registrar
Yost Hall, Room 110
(216) 368-4310
www.case.edu/registrar

Student Affairs
Adelbert Hall, Room 110
(216) 368-2020
studentaffairs.case.edu

University Health Service (Student Medical Center)
2145 Adelbert Rd.
(216) 368-2450
studentaffairs.case.edu/health

University Counseling Services
Sears Building, Room 201
(216) 368-5872
studentaffairs.case.edu/counseling

Police & Security Services
Emergency - 911
Urgent Matters; Safe Ride; Escort Service: (216) 368-3333
Safe Ride Program (7pm-3am)
Security Escort Service (24 Hours)
Security (Information) - (216) 368-4630
www.case.edu/finadmin/security/

University Circle Police
2100 Euclid Avenue
(216) 791-1234

Welcome from the Graduate Program Director

Welcome to the Doctoral Program in Epidemiology and Biostatistics of the Department of Population and Quantitative Health Sciences at Case Western Reserve University, School of Medicine. This handbook is a general summary of academic program information for Ph.D. students and should be used in consultation with an academic adviser. Students should also review the Case Western Reserve University's Student Handbook that describes the University requirements for graduation (http://case.edu/gradstudies/) The Ph.D. Program in Epidemiology and Biostatistics within the Department has expectations and requirements for graduation above and in addition to those of the University. If, after reading this Handbook and the University's Handbook, a student is uncertain about a requirement or discovers a conflict in requirements, then the student should bring this to the attention of her/his academic adviser. Any variation in policy or expectations will be documented and notification will be sent to impacted students.

I look forward to your time in program and your development into independent scientists!

Sincerely,

Scott Williams, PhD
Graduate Program Director

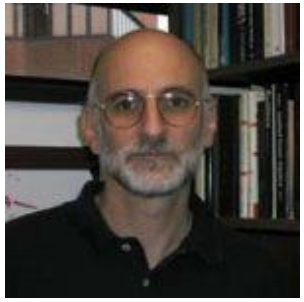


Table of Contents

Table of Contents (continued)

Mission, Values and General Orientation

The mission of the Doctoral Program in Epidemiology and Biostatistics is to prepare students for an active, fulfilling, and lifelong research career, having significant impact on human health and based on the concepts and tools of population and quantitative health sciences.

The program draws on the core disciplines of epidemiology and biostatistics, broadly defined, but may also include a wide range of other academic areas, ranging from human genetics to health policy. As part of their training students will develop the knowledge, skills, and competencies necessary to be leading researchers in areas that provide improved understanding of how to advance public health. Through challenging coursework and research opportunities, both independent and collaborative, students will develop a thorough understanding of the multiple determinants of population health outcomes, the individual and structural factors that may lead to disparities in those outcomes, and the way in which specific policies and interventions can influence the nature and impacts of population health determinants. A key aspect of the program is to train students to define important, unanswered questions and design appropriate strategies to solve our pressing health problems, locally, nationally and globally. In addition, the program in Epidemiology and Biostatistics is committed to developing the skills necessary for lifelong learning as we recognize this as being key to continued success.

The training program is designed to train students to address critical research questions to advance human and population health utilizing a wide variety of research tools and trans-disciplinary collaborations. This is distinct from historical training in a single discipline (e.g., statistics or genetics) or expertise in a small number of technical skills.

As part of their training in our program, students will master the rigorous scientific and analytic methods necessary to be at the forefront of efforts to not only describe, but effectively evaluate and improve population health. This mastery will include aspects of study design and advanced analyses of complex data. It is expected that students will develop an understanding of the complexity of solving health problems and how to draw on multiple areas of expertise to address them.

An integral part of our graduate education is the participation in student- and faculty-led seminars that provide an ongoing mechanism for keeping abreast of current literature, identifying important areas of research and collaborative

opportunities, and providing an open forum in which to discuss timely research questions. The seminars also serve to open dialogues among department members with the goal of stimulating new ways of thinking about health. Through our rigorous coursework, exposure to discussion of important health related issues, and their research experiences during graduate training, students will develop into junior colleagues of the faculty who through their training will develop the capacity to work independently. The department operates within a strong interdisciplinary framework involving faculty in the department, the School of Medicine, and across the entire university, as well as leaders in health care institutions and health-oriented organizations and agencies throughout the world.

The degree of Doctor of Philosophy is awarded in recognition of in-depth knowledge in a major field and comprehensive understanding of related subjects together with a demonstration of ability to perform independent investigation and to communicate the results of such investigation in a scholarly dissertation. Our goal is to produce leaders of the next generation of interdisciplinary health scientists. To prepare them, we train our students through courses and research to use analytic methods to understand biological, epidemiological, social and behavioral, and health service aspects of the population's health: ultimately to reduce and/or prevent morbidity and early mortality.

Admission

Graduates from accredited colleges and universities will be considered for admission to the department. All applicants must satisfy both CWRU School of Graduate Studies and departmental requirements for graduate admission. Students with broad backgrounds will be considered for admission, including but not limited to those who have studied biology, mathematics, statistics, epidemiology, and public and population health and health policy.

Students who receive financial support for their graduate training are expected to commit themselves full-time to the tasks necessary for both the completion of their degree and their professional development. For example, students are expected to work on their research activities, skills, knowledge, and professional development during the entirety of the program, including when classes are not in session. Fellowship, stipend, and other financial aid offers are made on an annual basis and will be renewed based upon performance (see additional discussion in Maintenance of Good Standing and Student Progress Reports) and availability of funds.

Professional Commitment and Culture

All students in the program are expected to maintain appropriate professional standards. This includes regular and on-time attendance at classes and seminars and participation in a variety of professional development activities. Strong involvement in research, service, and professional social activities is encouraged, with an emphasis on developing exceptional research credentials, independent critical thinking, and problem solving.

Students must recognize that enrollment in this rigorous graduate program may place demands on their time on evenings and weekends, and may prohibit them from participating in additional time-consuming activities. Pursuit of a doctoral degree takes time and commitment beyond that spent in the classroom, and students are expected to display maturity of character, interest in and enthusiasm for the practice of research, excellence in development of interpersonal communication, and high professional commitment to the program of study. The highest degree of integrity, honesty, and courtesy, all important professional values, is expected throughout their courses of study. Students are expected to contribute to their own professional development by taking initiative in organizing research seminars, leading journal clubs, organizing student-faculty retreats, and promoting other activities that enhance the stature of the program.

Planned Program of Study

In adherence with the School of Graduate Studies' policy, during the first semester of study, all students are responsible for ensuring that they have a Planned Program of Study (PPOS) on file, submitted through the Student Information System (SIS). The PPOS consists of all courses a student plans to take to meet the requirements for his/her degree. This includes all required coursework, electives, and seminars (even if they are for zero credit hours); however, the PPOS need not include registration of 701 credits. The PPOS must be approved by the student's academic adviser and should be submitted by October 15 of the first semester of study toward the degree specified, and updated, if necessary, by October 1 of each subsequent year in which the student is registered. Students are responsible for discussing their past background and future career goals with their academic adviser so that the best possible plan is developed. In the first year of study each student will be assigned an academic advisor by the department. After the student has chosen a research mentor (by the end of the first year of study) that faculty member will become the academic advisor. A complete step by step guide on how to submit a PPOS can be found through the University Registrar's webpage.

Student Responsibility

Students should consult with their academic adviser in their first year to develop their planned program of study (PPOS) to carry out their work towards the PhD. Nevertheless, it is solely the student's responsibility to become acquainted with and adhere to departmental and University rules, regulations, and administrative procedures governing graduate study, including the University's Standards of Conduct detailed in the Case General Bulletin, Graduate Student Handbook, School of Graduate Studies Statement of Ethics, University Guidelines on Authorship and Policy on Copyright, and the University Policy on Academic Integrity.

It is expected that students in the PhD program will take full responsibility for their academic progress. This will involve developing increasing independence as young scientists, who consult with their mentors and committee members. The gaining of independence during Ph.D. training represents a critical transition of students into full members of the scientific community.

It is also expected that all students in the PhD program will maintain the highest level of academic integrity. The expected standards of academic integrity can be found at: https://students.case.edu/policy/integrity.html

Academic Advisor

Upon acceptance into the PhD program, each student will be assigned an academic adviser with whom to confer about academic plans. The advisor will help guide the student through department and graduate school regulations, assist him/her in designing a PPOS, and track progress through the first year of the program. During this first year of study this faculty member will be key to ensuring that students make adequate progress in the required Core program of the department. In most cases, the initial academic advisor will be the Graduate Program Director. By the end of the first academic year, each student will select a research advisor who will serve as their academic advisor for the rest of their time in the program. Also, at the same time, in consultation with their new academic advisor each student will form a mentoring committee followed by a dissertation committee, as described later.

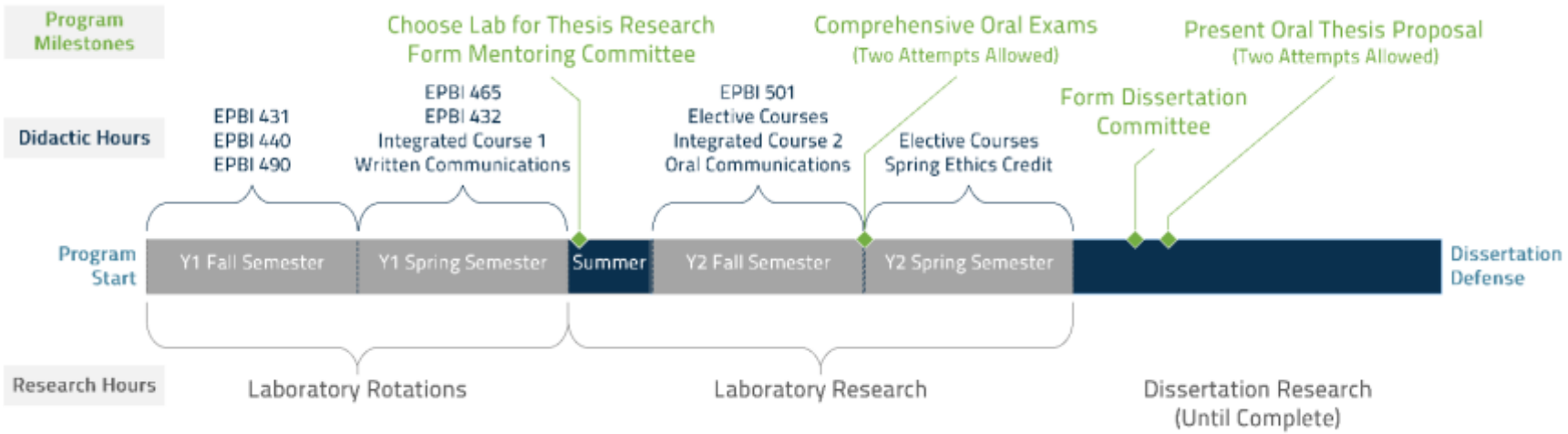
Students are required to meet with their academic advisor or mentoring/dissertation committee prior to registering each semester to discuss course plans for the semester. Once completed, the adviser will remove the "Advisor Hold" on the student's record within the Student Information System (SIS) so that he/she may register for classes.

During the course of their first year of study, students may request a change in academic advisor to another faculty member with a primary appointment in the department. To change advisors, students must complete and sign the form available on the department's website and deliver it to the Administrative Director of Non-Clinical Graduate Education. Subsequent changes of research advisors will follow the rules of the School of Graduate Studies.

Coursework for the Ph.D. Degree in Epidemiology and Biostatistics

All entering students will take a common set of courses into their second year. Students entering with prior graduate training may be eligible to enter with advanced standing and their coursework will be adjusted accordingly. Such situations will be handled on a case by case basis, following discussion with the Graduate Program Director.

Expected program of study is outlined below (Figure 1):



Year 1, Fall Semester		
PQHS 431	Statistical Methods I	3 Credit Hours
PQHS 440	Introduction to Population Health	3 Credit Hours
PQHS 490	Epidemiology : Introduction to Theory and Methods	3 Credit Hours
PQHS 501	Research Seminar	0 Credit Hours
		9 Credit Hours Total

Year 1, Spring Semester		
PQHS 432	Statistical Methods II	3 Credit Hours
PQHS 465	Design and Measurement in Population Health Sciences	3 Credit Hours
PQHS 444	Communicating in Population Health Sciences Research	1 Credit Hour
PQHS 472	Integrated Thinking in Population and Quantitative Health I	2 Credit Hours
PQHS 501	Research Seminar	0 Credit Hours
		9 Credit Hours Total

Students are required to enroll in PQHS 501 (Research Seminar) for at least 6 semesters. Beginning in their second year, students will be required to present their research at least once per year. This requirement applies to all students in the program, even those who have completed their PQHS 501 requirement. For more junior students, presentation of their research ideas or directions is expected. For more senior students, presentation of their research progress is expected. These presentations serve multiple purposes. The first is to help the student hone their speaking skills. The second is to encourage open discussion of projects with the hope that input from other department members will ultimately improve the research.

In addition to coursework in their first year all students will do three research rotations with potential mentors. Rotations will be at least 8 weeks and may begin the summer prior to matriculating. Students should discuss with prospective faculty mentors prior to rotations whether the faculty member has the resources to support the student after their first year. In case of ambiguity, the student should discuss options with the Graduate Program Director.

After each rotation both the student and the faculty member will report results of the rotation using an online form. Topics to be discussed by faculty may include each student's work ethic, skillset, and knowledge. Students may comment on faculty availability, mentoring style, and appropriateness of research projects for a PhD. Other relevant comments may also be added. All evaluations will be available to faculty who are considering having the students enter their research groups. Only the evaluations of the faculty will be available to students who are choosing research laboratories.

At the end of the first academic year students, in discussions with faculty with whom they have rotated, will choose a research laboratory in which to do their dissertation research. Only faculty with evidence of adequate financial support will be allowed to take students into their laboratories. Only a mentor who is a faculty member with a primary or secondary appointment in the department and is willing to be his/her research advisor may be chosen.

The research advisor will then assume the major responsibility for facilitating, guiding, and advising the student in his or her research. The research advisor will also assume financial responsibility for his/her students. This may include funding from other faculty on a collaborative basis. Each year a student support request form will be required to be filled out for each student by the research mentor and other faculty providing financial support. This form must then be submitted to the Administrative Director of Non-Clinical Graduate Education.

Mentoring Committee

Following the first academic year and choice of a research laboratory, students will also form a mentoring committee. This committee will consist of the research advisor and two other faculty members, at least one of whom who will have a primary appointment in the Department and will serve as the committee chair. This committee will help guide the student through his/her coursework and preliminary research. At the first committee meeting the PPOS will be re-assessed and revised.

The committee will meet at least once per semester until a dissertation committee is chosen. It is expected that all committee members will be present at each mentoring committee meeting. In rare cases, a member may participate via telephone or other electronic means, but he/she must still sign off on the post-meeting report.

After each meeting a report will be produced that describes the progress and goals for the overall academic and professional development plan, with specific milestones and corresponding timelines. After each meeting the committee is required to assess student progress and make an explicit statement about pace of progress (rated from outstanding to poor as listed on the meeting report form). In the case of a poor or fair evaluation the student, committee chair and research advisor will be required to meet with the Graduate Program Director to discuss remedying any issues. This

meeting may be with all parties or may involve individual meetings, depending on the situation. This report must be signed by all committee members. A template for the meeting report can be found on the department website.

Each committee meeting will begin with a brief consultation between the research advisor and the committee members in the absence of the student. Each meeting will also end with a similar consultation prior to reporting recommendations to the student. Finally, after the committee has reported its recommendations to the student, the committee will meet with the student in the absence of the research advisor to discuss either scientific or personal issues.

Year 2, Fall Semester		
PQHS 444	Communicating in Population Health Sciences Research	1 Credit Hour
PQHS 473	Integrated Thinking in Population and Quantitative Health II	2 Credit Hours
Electives as determined by Mentoring Committee		6Credit Hours
PQHS 501	Research Seminar	0 Credit Hours
		9 Credit Hours Total

Year 2, Spring Semester		
PQHS 445	Research Ethics in Population Health Sciences	0 Credit Hours
IBMS 500	Ethics & Biomedical Research	1 Credit Hour
Electives as determined by Mentoring Committee		8 Credit Hours*
PQHS 501	Research Seminar	0 Credit Hours
		9 -10 Credit Hours Total

*Students may need to take 9 credits (3 courses of 3 credits each) due to limited 2 credit options

By the end of the Fall semester of the 2nd year, all students will take the departmental general examination, which is a comprehensive oral examination (described below). Students may form their dissertation committee once they have passed their general examination.

Students who have passed their general examination have until the beginning of the fall semester of their third year to form a Dissertation Committee and defend a dissertation proposal (the "qualifying examination") to their committee. The format of the dissertation proposal is described below.

In summary the Doctor of Philosophy degree in the Department of Population and Quantitative Health Sciences comprises the following six components:

1. Core Curriculum (22 credits)
2. Electives (20 credits*)
3. Seminar Requirements
4. Passing the General Examination
5. Defending a Dissertation Proposal (including an oral public presentation of the proposal), the "qualifying examination".
6. Dissertation Research Credits (total of 18 credits)
7. Dissertation Completion (oral public defense and final written dissertation)

*Students may end up taking more than 20 credits in electives

General Examination

Students are required to sit for the department general examination before the beginning of the spring semester of their second year. This examination will be based on the analyses of a dataset chosen from several available sets given to the students at least 3 weeks prior to the oral examination. The student will perform analyses of the data, interpret the results in light of a defined scientific question, and design a next set of experiments/studies to be performed to follow-up the results. This will include the development of subsequent hypotheses in the area of research.

Each student will provide an in-depth oral analysis of the data set. This will include formal analysis and interpretation as well as the strengths and limitations of the provided data set. The student will also be expected to provide a research agenda on how they would extend the study from which the data was derived to better address the same problems or extend our understanding of the problem. This will be formally presented orally and an examining committee will determine whether the student has adequately analyzed and interpreted the data as well as proposed appropriate additional studies.

The examination will test the students' ability to the integrate materials and concepts they have learned across the core classes, providing evidence that they can think independently and can understand and apply the broader concepts underlying the core curriculum. In preparing for the examination, students should take the initiative to consider how the concepts and readings for one class apply to other classes and population health research in general. Students are encouraged to form discussion groups with their fellow students, read the relevant literature, and attend seminars to strengthen these skills.

The results will be presented to an examining committee made up of at least four but no more than 5 departmental faculty members. Each student will prepare an oral presentation lasting no more than 20 minutes. This will be followed by questioning regarding the analyses, interpretations and research plans going forward. It is expected that each student will be able to develop a cohesive research plan based on the analyses.

The examination may cover any topic covered in the PhD core coursework and contain questions that synthesize content across the different core courses. A student may pass the examination, pass the examination conditionally, or fail the examination. A conditional pass will be deemed appropriate when there exist minor deficiencies in the examination that

can be addressed by one or a few remedies within no more than one month. To pass or receive a conditional pass at least 4 members of the committee must support this decision. A student who fails the examination may retake the examination once no later than two months after the first attempt. A second failure will result in removal from the PhD program. A student who fails the department general examination may be eligible to complete requirements for a conciliatory MS degree. The requirements for an MS will be decided on a case by case basis by the PhD program Internal Oversight Committee.

Dissertation Committee

At the end of their second year in the program each student, in consultation with their research mentor (advisor), will choose a dissertation committee; inviting the committee members to be on their dissertation committee is the responsibility of the student. The committee will consist of at least four University faculty members and must include the research advisor, a committee chair (not the advisor), who must have a primary appointment in the department, a third member from the department, either primary or secondary, and according to Graduate School rules a fourth member from another department within the University. An additional member may be added to the committee but the total number should not exceed five. In exceptional cases committee members may come from outside the university but this requires permission of both the Graduate Program Director and (by petition) the Dean of the Graduate School. The petition is the responsibility of the student and the advisor. The Graduate Program Director will be an *ex officio* member of all dissertation committees.

The dissertation committee will meet at least once per semester throughout the course of graduate study. After each meeting a written report documenting progress and goals to be met prior to the next meeting will be prepared by the committee chair in consultation with the other members and the student. The final report must be signed and approved by all committee members. The report will be provided to the student and the Administrative Director of Non-Clinical Education no more than 2 weeks following the meeting. Progress will be judged in part by the accomplishment of described goals from prior meetings. A template for the meeting report can be found on the department website or supplied by request from the Administrative Director of Non-Clinical Graduate Education.

The dissertation committee will advise the student on his/her research program, evaluate progress towards the degree, and help in the professional development of the student. In addition, the committee will serve as the primary instrument for mediating any personal or professional issues that arise during the student's tenure at CWRU. This may involve addressing conflicts with the research advisor. The chair of the committee will ensure that all procedures of the program are followed and that meetings and all interactions between the student and the committee members proceed in a productive and professional manner. The committee chair will also be the first person who will address any issues regarding student performance or interactions with faculty. In the event that such conflicts arise that cannot be addressed by the committee or the committee chair, the committee chair will approach the Graduate Program Director to resolve the situation.

Each meeting will begin with a brief consultation between the research advisor and the committee members in the absence of the student. Each meeting will also end with a similar consultation prior to reporting recommendations to the student. Finally, after the committee has orally reported its recommendations to the students, the committee will meet with the student in the absence of the research advisor to discuss either scientific or personal issues.

To form a dissertation committee, students must complete the Dissertation Committee Notification from (available on the department website) and submit it to the Administrative Director of Non-Clinical Education. All dissertation committees must adhere to both the requirements of the School of Graduate Studies and the department and be approved by the Graduate Program Director.

Dissertation Proposal Defense

After passing their oral qualifying examination each student will choose a dissertation topic in consultation with their research mentor. Each student will write a dissertation proposal based on this topic. Although the student may receive advice on the dissertation proposal from the research mentor and other faculty, the document is to be written by the student in its entirety.

The proposal will be written in the format of an NIH R01 proposal. Each proposal must include a specific aims page. The main body of the proposal will be limited to 12 pages. The main body of the text will include a literature review delineating the background and significance of the proposed work, which research gaps it will fill and how it will fill them, its innovation, any preliminary data, and the explicit approaches designed to address the aims. The proposal should be written clearly, in English, at a level of understanding suitable for those outside the specialty area.

The proposal must be defended in a public presentation. At least two weeks prior to the scheduled oral presentation of the proposal, the proposal document must be made available to the entire committee. In the unusual circumstance in which there is concern about the dissertation, the committee may at this point recommend that the defense be postponed. At that same time, notice of the oral presentation of the proposal (including title, abstract, and official announcement of the proposal) must be submitted to the Administrative Director of Non-Clinical Graduate Education for public circulation including the departmental faculty and students. The oral presentation will be open to the public with an expected audience of Department faculty and students. All dissertation committee members are required to attend the public presentation.

Following the public proposal presentation and question and answer session, there is a closed oral defense before only the committee. The committee then meets privately to decide on whether to pass or fail the defense and decide on changes to be made to the proposal. The research advisor, optionally with the committee, then meets with the student to share the committee's decision. The committee will then submit to the Graduate Program Director its pass/fail recommendation and a copy of the written (possibly revised) proposal. A student may either pass, pass conditionally, or fail. In the case of failure, the student will have one more opportunity to defend the proposal. Two members of the committee voting to 'fail' will result in failure, regardless of the number of members on the dissertation committee. In the case of a conditional pass the range of changes requested can include minor revisions to the document or a second oral

defense of specific aspects of the proposed research; this is to be determined by the dissertation committee. The conditions must be met within four weeks after the proposal defense, unless otherwise specified by the committee and approved by the Graduate Program Director. Failure may necessitate rewriting of the written document, as determined by the committee, or simply another oral defense. In either case the exam will be retaken within two months of the first attempt.

In the case of a pass recommendation by the committee, the Graduate Program Director will review the documentation, materials, and committee recommendation. The Graduate Program Director will advance the student to candidacy except in the rare situations in which the Graduate Program Director deems there to be substantial concerns with the document or the oral defense. In this case, the Graduate Program Director will first consult with the Program Oversight Committee and then meet with the dissertation committee and the student to discuss how to remedy any deficiencies.

Once the proposal is approved, the student may commence independent research on his/her dissertation topic. This will include registration for PQHS 701 credits. To meet requirements for the Ph.D. each student must satisfactorily complete 18 credits of PQHS 701 in addition to the core courses and electives totaling to 42 credits. To register for PQHS 701, students must first complete and submit their Advancement to Candidacy form to the Administrative Director of Non-Clinical Education.

Students will be required to use the approved dissertation proposal as the basis of a grant proposal submission within six months of passing the proposal defense. In the case of US citizens and permanent residents this will usually be in the form of an NIH Ruth Kirchstein National Research Service Award (F31) application. For students not eligible or for those with topics not appropriate for an NRSA the student, the dissertation committee and Graduate Program Director will determine other appropriate venues for grant proposal submissions.

Advancement to Candidacy and PQHS 701

Students in the Ph.D. program advance to candidacy after:

1. Completion of all core courses.
2. Passing the general examination.
3. Completion and defense of a dissertation research proposal
4. Submitting the completed and signed advancement to candidacy form to the School of Graduate Studies.

Following admission to candidacy each student will engage primarily in their dissertation research. The Ph.D. dissertation research will be performed while in residence (see below) under the supervision of a faculty member (research adviser) of the department. Students who have advanced to candidacy may register for 1-9 credits of PQHS 701 each fall and spring semester (or up to 6 credits for the summer, when needed). Students should not register for dissertation credits, PQHS 701, until the student has been advanced to candidacy. In rare cases, a student may petition for permission to register for up to a total of 6 credits of 701 prior to advancement to candidacy. This requires a completed and signed Pre-Doctoral Standing form, approval by the research mentor and the Graduate Program Director and submitted to Office of Graduate Studies. Student should see the Administrative Director of Non-Clinical Graduate Education for details. Pre-Candidacy (Pre-Doctoral Standing) PQHS 701 credit hours can only be taken concurrently with course work upon both academic and research adviser approval and proper form submission. It is expected by both the department and the School of Graduate Studies that any student who applies for Predoctoral Standing, and begins taking 701 credit hours before advancing to candidacy, will advance to candidacy before the following semester. For permission to take 701 credits prior to candidacy see: students must compete and submit the Pre-Doctoral Standing form to the Administrative Director of Non-Clinical Graduate Education. In most cases individuals wishing to conduct research activities prior to advancement may elect to enroll in PQHS 601 Independent Research credits.

A minimum of 18 credit hours of PQHS 701 are required for the PhD degree. Once students have registered for PQHS 701, they must maintain registration (at least 1 credit) in each subsequent semester (fall and spring) until graduation, with the exception of approved leaves of absence. Note that leaves of absence do not extend the 5-year time limit to graduate after first enrolling in dissertation (PQHS 701) credit hours. Also note that there is no provision for "part-time" status during dissertation work. The School of Graduate Studies generally considers even a single credit hour of dissertation

research to represent full time student status. All students have a five year time limit, including leaves of absence, to complete their degree after registering for dissertation credit hours, unless they obtain an extension. A petition for extension of the 5-year limit must be approved by the research adviser and the Graduate Program Director, and submitted to the Dean of Graduate Studies. The extension should include a plan with a timeline for completion. If an extension is granted, the student must register for a minimum of 3 credit hours of 701 every semester.

Research Adviser Responsibilities

Becoming a mentor to a PhD student means that a faculty member assumes the commitment to be a life-long mentor to the student with the goal of helping each student to become a successful member of the scientific community. This includes:

- Commitment to the student's research project, helping with setting goals, and establishing research timelines.
- Meeting regularly with the student one-on-one to assess progress and provide guidance, preferably weekly if not more regularly.
- Aid in selecting other mentors, including the mentoring and dissertation committees.
- Help in developing communication skills essential to becoming a successful scientist.
- Provide guidance in the responsible conduct of research, rigor, and reproducibility. This includes issues of authorship, data sharing, ownership, and appropriate study design
- Encourage and support the student's participation in scientific meetings.
- Provide career advice.

- Finally, provide an intellectually stimulating and supportive environment in which each student can develop and flourish.

It is recognized that research work that is not the major focus of the student's dissertation may provide extremely useful training and when possible is encouraged. However, mentors may not demand that their students perform work that is unrelated to the student's dissertation research project or training unless agreed upon by both the student and the Mentor. In the case of possible disagreements, the dissertation committee will attempt to resolve any issues.

Advanced Standing for Students with a Prior Master's Degree

Some students will enter the PhD program after completing a relevant master's degree, such as a Master of Science (MS) or Master of Public Health (MPH) degree. If the student's MS or MPH degree is from CWRU, core courses that were taken as part of their master's degree need not be taken again as a PhD requirement, unless they were taken more than seven years prior to matriculation as a PhD student. In this case they will be evaluated on a case by case basis. Courses for which the student has had the equivalent elsewhere may be replaced (not waived, see below). However, a student entering with a related Master's degree may apply for advanced standing, thereby reducing the number of CWRU didactic credit hours required for the PhD.

Students who enter the PhD program with a related Master's degree may apply for advanced standing. Based on courses taken elsewhere but judged to be equivalent to CWRU courses, a student may have the total number of credits required for the PhD reduced. To be granted, the student must have a minimum of 12 credits of equivalent courses and may be granted a reduction in course requirements of up to 18 credits. If the student has fewer than 12 credits of equivalent courses, they may apply to waive or replace a course (see "Waiving or Replacing a Course"). Students who wish to apply for advanced standing may do so any time after acceptance into the program by submitting the appropriate form and attaching the syllabi for all courses being used as the basis for waiving courses. This petition must be signed by the student and Graduate Program Director.

Please note the following rules for a PhD student:

1. A minimum of 24 credit hours of coursework must be taken at CWRU.
2. All core courses (standard core or statistical alternative core) must be taken, except as waived by the Graduate Program Director, following consultation with the instructors of the core courses.
3. The student is responsible for everything covered in the core courses, and will take the full qualifying examination, regardless of whether any courses were waived.
4. An approved Master's degree may qualify for a reduction of 12-18 credits from the full 42 credit requirement. If fewer than 12 credits are considered "waivable", then it will not be deemed an approved Master's and the full 42 credits must be taken at CWRU – though the student may be able to replace courses equivalent to those taken elsewhere.
5. "Waiving" a course means that the student has taken, at another institution, nearly all or all of the material in the course being waived. If a student has taken a course that is deemed to be somewhat similar, but not equivalent, the student may be granted the right to "replace" the course with another course in the same subject area to strengthen the student's knowledge in the area. This will usually be a more advanced course. In this case, there would be no credit reduction.
6. The process for approving a waiver is similar to that of granting transfer credit. The instructor of the equivalent course will provide an evaluation based on materials submitted by the student, including at minimum, the course syllabus, as deemed appropriate by the instructor. In some cases, a short examination may be given to assess competency.

Waiving or Replacing a Course

To request being waived out of a required course, or to replace it, students may petition using the official Petition to Modify Course Requirements, which can be found on the department website. The petition must provide documentation of the relevant courses completed, with a grade of "B" or higher, a detailed description of the course(s), the syllabus, and textbook used in the completed course(s). The petition should be approved by the academic adviser and submitted to the Vice Chair for Education for approval.

The Graduate Program Director will approach the instructor of the course(s) in question with the petition. The instructor will then evaluate the student's petition, and can either approve or disapprove of the course being waived, or may instead approve replacing the required course with another, advanced course in the same area. In this last case, the replacement course needs to be specified with a plan for when to take it. Special attention must be paid to prerequisites for this replacement course and when it is offered.

For Core courses, it is important that students realize they will be held fully responsible for all content on the general exam, based on how it is taught here, even if the student got the course waived based on coursework elsewhere.

Students can petition to replace a maximum of 2 core courses.

Transfer of Credit

Transfer of credit from another university toward doctoral degree requirements is awarded for appropriate course work (not applied to another degree program) taken prior to admission. Transfer of credit should be requested in the student's first academic year, and must be appropriate for the student's planned program of study. No transfer of credit will be awarded towards the Ph.D. degree except by petition, and no credit for the doctoral dissertation may be transferred from another university. All transfer of credit requires approval from the student's academic adviser, the Graduate Program Director, and the Dean of Graduate Studies. Courses for which transfer credit is requested must have been taken within five years of first matriculation at CWRU and passed with grades of B or better.

Students who wish to receive credit for courses taken outside the university once they are enrolled must petition for approval prior to taking the courses.

Course Load and Financial Aid

Full-time students will normally take at least nine credit hours each semester. However, any time a student is registered for PQHS 701 (dissertation research), even if only for 1 credit hour, the student is considered by the University to be full-time.

All students entering the program as PhD students will be supported for the first year by institutional or departmental funds, unless fully funded through other, external sources. Following the first year, students will be eligible for training grant positions or for support from their research mentor or another faculty member. In addition, as stated above it is expected that students will seek independent funding to support their training; applying for external funding is considered part of the training.

It is expected that all students will be supported throughout their graduate tenure at CWRU by a combination of resources, as described above. However, to maintain support students are required to maintain a cumulative grade point average of 3.5.

Annual Progress Report

Students are reviewed twice annually (once per semester) by their mentoring or dissertation committees. If progress is deemed adequate by a committee, no other evaluations will be necessary and the reports signed the committee members will stand as the student evaluations. However, if progress is inadequate or marginal as determined by a student's committee, an additional evaluation by the Internal Advisory Committee will be performed in consultation with the student's adviser. A plan will be developed to remedy the problem and progress will be assessed at the next student committee meeting. If progress continues to be an issue, the student will meet with the Graduate Program Director to discuss options for continuation in the program. Options may include dismissal from the program with or without a Master's degree, depending on the stage at which the problem occurs. Such situations will be handled on a case by case basis.

The School of Medicine (SOM) requires PhD students after their first year to complete an Individualized Development Plan (IDP) by December 1 of each year. PhD students in their 1st year are asked by the SOM to complete their IDP after completion of their 1st year.

Conciliatory MS Degree

The department awards an MS degree in Biostatistics and a Master's of Public Health. The granting of a conciliatory MS degree option is available for PhD students, based on the university's Plan B model. To be granted a Conciliatory MS degree, students are required to complete 36 credit hours of graduate level course work. The Internal Advisory Committee will review these petitions and based on coursework taken and consultation with the student, create a new 36 credit PPOS. This may require additional courses for the granting of a degree. Courses already taken to fulfill department and concentration core requirements are counted toward the required 36 credit hours. The conciliatory degree is not an alternative terminal MS program, but rather is available for PhD students who are unable to complete their PhD studies.

Dissertation Defense

All candidates for the Ph.D. degree must submit a written dissertation as evidence of their ability to conduct independent research at an advanced level. The written dissertation must conform to the regulations of the School of Graduate Studies. Detailed instructions with regard to formatting and structure can be obtained from the School of Graduate Studies. Following successful defense of the dissertation, an unbound paper copy of the dissertation is to be submitted to the department.

The dissertation must represent a significant original contribution to existing knowledge in the area of research, and at least a portion of the content must be suitable for publication in a reputable professional journal or as a book or monograph. It is required that prior to the defense at least one paper will be published in a peer reviewed journal with the student as the first author. If this is not the case, permission to defend will be made by request to the Graduate Program Director and evaluated by the Internal Advisory Committee.

The final oral examination, chaired by the dissertation committee chair, must be widely publicized. A form with the date of defense must be signed, approved and submitted to the School of Graduate Studies (SGS) in time to obtain their approval at least three weeks prior to the date of defense. Students should endeavor to submit this form well in advance of the three-week deadline. SGS will not approve a defense date that is less than three weeks away. In such a case, the defense will have to be rescheduled. The examination consists of a defense of the dissertation and a final inquiry into the student's capabilities to conduct independent research.

All PQHS faculty members are encouraged to attend and participate in the student's Ph.D. examination. Students are also strongly encouraged to attend. All members of the dissertation defense committee are required to be present. Exceptions to this last rule must be approved by petition to the Dean of Graduate Studies and only under extraordinary circumstances; in any case, no more than one voting member can ever be absent, and the absent member must participate through real-time video or phone conferencing. Ph.D. candidates must submit the schedule for their final oral examination no later than three weeks before the date of the examination to the School of Graduate Studies and to the Administrative Director of Non-Clinical Graduate Education for circulation to the department. The members of the dissertation committee must have copies of this dissertation in hand at least two weeks before the defense. The student

must obtain all appropriate dissertation approval forms from the School of Graduate Studies and bring them to the examination.

The student passes the dissertation examination if not more than one member of the dissertation committee dissents. Additional work may be required based on the result of the examination prior to passing the student.

Maintenance of Good Standing

To remain in good standing within the PhD program, students must satisfy the following conditions:

- Respond in a timely fashion to department communications that require it (check Case e-mail!).
- Register each fall and spring semester unless on an official leave of absence that has been approved by the School of Graduate Studies.
- Maintain a minimum cumulative graduate GPA of 3.5 in all graduate work (including transfer courses).
- Receive a grade no lower than a "B" in any of the required core courses. Attend courses and seminars as scheduled. If illness or other circumstances intervene, the student must notify the course instructor and adviser as soon as possible.
- Satisfy all program deadlines and time limits as outlined in the Academic Guide.
- Remove Incomplete (I) grades within one semester, or by the time specified by the course instructor if that is later.
- Pass the General Exam within two attempts before the end of the spring semester of a student's second year
- Pass the Defense of the Dissertation Proposal within two attempts.
- Successfully defend the dissertation within five years of first PQHS 701 registration.

Students who fail to remain in good standing should expect to be placed on academic probation. Students on academic probation have 1 semester to return to good standing or risk being removed from the program. However, students who fail to pass either the General Exam or the Qualifying Exam (dissertation proposal) within two attempts will be removed from the program unless under rare circumstances, a special petition is granted to allow a third attempt. For the General

Exam, a petition would have to be approved by the Internal Advisory Committee, the Vice Chair for Education, and the Dean of Graduate Studies. For the qualifying exam, the petition must be signed by the research adviser and approved by the Internal Advisory Committee and the Vice Chair for Education.

Time Limitation

All requirements for the doctoral degree must be completed within a total of five consecutive calendar years beginning with the semester of the first credited registration in PQHS 701, Dissertation Research, including leaves of absence. Extensions may only be considered through formal petition to the School of Graduate Studies, signed by the research adviser and the Vice Chair for Education. To petition for an extension, students must complete and submit the Petition for an Extension form to the Administrative Director of Non-Clinical Graduate Education.

Changing a Course Grade

If a student needs to have a course grade changed from an incomplete, or from no entered grade, the instructor can change the grade online up to 1 year from the end of the semester. After that time period has elapsed, the instructor will need to fill out and sign a yellow change of grade card, and submit it to the Graduate Program Director for signature and submission to graduate studies.

Students have an obligation to check their course grades promptly after the end of the semester. On rare occasions, a student may feel the letter grade (A-F) assigned was incorrect or unfair. In such a case, the student needs to contact the instructor immediately. If the instructor feels the student is justified, the instructor may request a grade change using the yellow grade change card and submit to the Graduate Program Director for approval, signature, and submission to graduate studies. This request from the instructor must be made within 30 days of the grade posting to SIS, and must be accompanied by an e-mail to the Graduate Program Director explaining why the change is justified.

Repeating a Course

Graduate students may petition the Graduate Program Director to repeat a maximum of two courses during their degree program to improve their performance. A Course Repeat Request form must be completed and submitted to the Graduate Program Director.

Residency Requirement

Graduate students working toward the Ph.D. must meet minimal residency requirements. The intent of residency is to have continuity of the academic program as evidenced by course registration and contact with the program faculty. To fulfill the residency requirement, a student must be registered in at least six academic semesters (fall and spring) or six consecutive terms (fall, spring, and summer) between the time of matriculation and five years after the first credited hour of PQHS 701, Dissertation Research.

A foreign student must be registered for 9 credit hours per semester to maintain INS "residency as a full-time student". However, once a student has advanced to the dissertation stage, one hour of PQHS 701 per semester may be sufficient for this purpose. However, students should check with an international student adviser to be sure.

Academic Integrity

All students are held responsible for the preservation of standards of academic integrity. All forms of academic dishonesty, including forgery, cheating, plagiarism, misrepresentation, and obstruction, are violations of academic integrity standards. Plagiarism includes the presentation, without proper attribution, of another's words or ideas from printed or electronic sources. It is also plagiarism to submit, without the instructor's consent, an assignment in one class previously submitted in another (self-plagiarism). Student materials submitted to courses taken as part of the PQHS academic programs as well as seminars, dissertation proposals, dissertation documents, and other academic and research materials may be submitted by course instructors, advisors, and/or and the Graduate Program Director to electronic resources for evaluation of potential plagiarism.

The University's Academic Integrity Board can sanction violations by issuing failure in the work in question, failure in the course, university disciplinary warning, university disciplinary probation, university disciplinary suspension, or expulsion.

The University also has guidelines on authorship standards. Further details can be found in the University's policy on Academic Integrity.

Ethics in Conducting Research

All students within the Department of Population and Quantitative Health Sciences are required to complete training in Ethics in conducting health research, including intentional misrepresentation of data, interpretation of data, management practices, peer review, reporting research misconduct, collaboration and authorship, protection of human subjects, the institutional review board, humane treatment of animals, research involving vulnerable populations, and the use of unethically obtained data. To graduate, all students must complete the following requirements: (1) completion of the ethics requirement in the core curriculum (PQHS 445 for 0 credits; IBMS 500 for 1 credit) and (2) certification through the Continuing Research Education Credit (CREC) Program. More information regarding CREC certification can be found through the Office of Research and Technology Management.

All PhD students must complete their CREC certification by the end of the first semester enrolled in the program. Upon completion of the online certification program, students should provide the Student Affairs Coordinator a copy of their CREC certification. If a student comes into the program with a current certification, she/he should provide the certification to the Student Affairs Coordinator; however, if the certification expires within one year, a renewal certificate will be required. Thereafter, students are responsible for recertification before expiration of the original accreditation. Each student must give the department assistant the appropriate documents pertaining to recertification within two weeks of obtaining them. Students will not be allowed to pass the general qualifying examination and advance to candidacy without proof of certification, and lapses in status may affect the continuity of the Ph.D. research.

IRB Approval of all Research and Protection of Data

All dissertation work involving human subjects, even if involving only secondary data analysis, must have IRB approval or a documented IRB determination of exemption. The research adviser must be involved in this process. If the work is part of a larger project that has already received clearance, the student should be added as key personnel to the IRB protocol. All data must be securely maintained and privacy of participants protected. Students are required to adhere to the University's, School of Medicine's, and relevant IRB's data protection policies. Human subject data or study materials provided to, obtained from, or created by a student, may not be transmitted or shared with any other individuals (including another student) without explicit written permission from the study's principal investigator and/or the responsible investigator listed on the approved IRB protocol.

Publication of Electronic Thesis and Dissertation

The School of Graduate Studies partners with OhioLINK to electronically publish master's theses and doctoral dissertations through their ETD Center--a free, online database of Ohio's ETDs from participating OhioLINK member schools. It contains the abstract and full-text for all theses and dissertations, giving researchers immediate access to the most current research occurring on Ohio's campuses.

The ETD Center is freely accessible worldwide to anyone interested in searching, viewing, and downloading the theses and dissertations published in Ohio. Using a standard Web browser, users can search the database using basic keyword searching. Authors, university affiliation, and abstracts are all indexed.

When you submit your ETD to OhioLINK, you are giving OhioLINK and CWRU permission to make your ETD available for open access on the Internet, including access through major Internet search engines.

More information about the electronic dissertation process through OhioLINK can be found through the School of Graduate Studies.

Points to Consider Prior to Submitting Your ETD

All copyrighted material (e.g. previously published in a journal, monograph, or chapter) must have permission from the journal, monograph or chapter publisher for reproduction/inclusion in the ETD. If they have already published part of their ETD in a journal or monograph, and have not retained/negotiated the right to include it again in the completed ETD, students must obtain copyright permission for their own published work. Students cannot alter published figures from themselves or others without copyright release.

Inclusion of any intellectual property as imposed by Material Transfer Agreements or participation of collaborators must appropriately consider legal, collegial, and ethical obligations. In particular, any unpublished data from collaborators should not be included in the ETD unless written consent is demonstrated and appended to the ETD.

All information in the ETD will be published when the ETD is submitted to OhioLINK. If there are near future plans to publish a portion of the ETD in a journal or monograph, submitting the ETD might compromise such future publication(s), unless you have first discussed this with the journal or monograph publisher, or intend to embargo the ETD to allow for future publication. If you have chosen a publisher and plan to publish a portion of your ETD, check the publisher's policy. Since 2004, Elsevier (major publisher of academic and professional journals) has allowed their authors to retain rights for pre- and post-publication of articles. If you publish with Elsevier in a journal, you can later include the work in your ETD without asking permission from Elsevier.

The ETD may be embargoed (held without release) after submission for up to two years. Petition forms are available on the School of Graduate Studies website. An embargoed ETD is still considered to be a completed work, and may not undergo any modification before release by OhioLINK.

Grievance Procedure

Any student who has a grievance should consult for resolution, in order, the academic advisor, the Graduate Program Director (who will refer the case to the Internal Advisory Committee or an appointed grievance committee), the Vice Chair for Education, the Department Chair, the Associate Dean of Graduate Education (School of Medicine) and the Dean of Graduate Studies. If the Grievance is with the advisor the student should consult his/her committee chair first, then follow the order as described above. There id no need to go further than the stage at which the issue is resolved.

Furthermore, the School of Graduate Studies has a general policy to assure that all students enrolled for graduate credit at Case Western Reserve University have adequate access to faculty and administrative consideration of their grievances concerning academic issues. A three-step procedure has been established for graduate students to present complaints about academic actions they feel are unfair. These policies are detailed by the Division of Student Affairs.

Leaves of Absence and Other Time-off

All students who are admitted to the PhD program in the Department of Population and Quantitative Health Sciences are expected to pursue their studies according to a systematic plan. If it becomes necessary for a student to interrupt studies before completion of the degree, the student must request, in writing to the Graduate Program Director, a leave of absence. The leave does not ordinarily extend the time limitation on progress to the degree. Leaves of absence may not exceed two consecutive academic semesters, and the maximum amount of leave permitted per graduate program is four semesters. Petitions for a leave of absence require a form available from the School of Graduate Studies and require the approval of the student's academic adviser, Graduate Program Director, and Dean of Graduate Studies. Leaves of absence may be used for the medical conditions related to pregnancy and childbirth.

Trainees with stipends are eligible for a total of two weeks of vacation per year and holidays. The period between semesters is considered to be an active time of research and research training and is not considered to be a vacation or holiday. Vacation timinig must be approved by the research advisor.

Trainees may receive stipends for up to 15 calendar days of sick leave per year. Sick leave may be used for the medical conditions related to pregnancy and childbirth. Trainees may also receive stipends for up to 30 calendar days of parental

leave per year for the adoption or the birth of a child. The use of parental leave must be approved by the Department Chair and the trainee's academic and research advisers (these two possibly being the same person).

Many international students are not eligible to take a leave without jeopardizing their student status; prior approval from International Student Services is required.

Support for Students

Graduate study may be a stressful time for students, revealing a need to engage additional resources. It is helpful to set goals and personal deadlines. Students may consider tutoring support for learning disabilities through Student Affairs/Educational services, and/or counseling through University Counseling Services. University Counseling Services (UCS) and the Divisions of Collegiate Behavioral Health (CBH) and Prevention and Recovery Services (PRS) provide individual, group and couples counseling, psychiatric consultation, psychological and learning disabilities testing, and referrals for community services for all students and their spouses or partners.

Graduation

To receive a degree, the student is required to apply for graduation through the Student Information System (SIS) in the School of Graduate Studies before the posted deadline during the semester the student expects to complete all degree requirements, and must be registered during the semester in which the degree is awarded. It is the responsibility of the student to secure signatures and return the necessary forms to the School of Graduate Studies on time. Each student who applies for graduation should consult the calendar from the School of Graduate Studies for the various deadlines.

Program Administration

The Ph.D. Program will be administered by the Graduate Program Director in close consultation with an Internal Advisory committee. The Internal Advisory Committee will consist of at least 3 faculty members with primary appointments in the department and one student representative. The Internal Oversight Committee is available to the Program Director for consultation and guidance on the doctoral program, and may make recommendations to the Program Director and the Curriculum Committee as appropriate The Graduate Program Director will consult the Internal Oversight committee in case of grievances or other non-standard operational matters such as issues of inadequate student progress. In the case of discussions of individual student issues or other confidential information, the student representative will be excused. Decisions of the committee will be by a majority vote.

The Graduate Program Director will be responsible for overseeing all aspects of the Ph.D. program. He/she will do so in regular consultation with the Vice Chair for Education, the Department Chair, and with guidance from the Internal Advisory Committee as needed. The Graduate Program Director will serve as the official spokesman for the Ph.D. program and will serve as its representative in matters related to University policy and programs. The Graduate Program Director will be responsible for the maintenance of high standards in the academic program, including the continuing evaluation of all required and elective courses in the program, the qualifications and diversity of the faculty. The Graduate Program Director will initiate and coordinate recruitment activities and will be also responsible for identifying and applying for (or assisting others in applying for) internal and external support for graduate training.

Communication Among Students, Faculty, and Staff

All students enrolled at Case Western Reserve University are given a Case Email address and Network ID. The general format for a CWRU email address is firstname.lastname@case.edu. Students also receive a Network ID, which generally consists of their first, middle, and last name initials followed by a number (ex: abc123@case.edu). This Network ID will give you access to your Case Webmail account, SIS, and any other University-related login systems that you have access to. If you use another email account, please ensure that you read both accounts regularly or that you forward the CWRU email to your regular email.

Students are responsible for reading the information and content of communications sent to their Case Email account at least once a day. Faculty, students, and staff often use the CWRU email system to communicate information about courses, seminars, events, etc., particularly when personal notification (e.g. during class) is not possible. You will be held accountable for missed information if you fail to check your email in a timely manner.

Student Information System (SIS)

The Student Information System (SIS) is a secure, flexible, web-based environment for creating and managing academic records at Case Western Reserve University.

The Student Center section of the SIS is the main launching point for accessing academic, financial and personal information. SIS can be accessed via the "quick link" section at the bottom of the CWRU homepage.

Students can access training guides, information, references, and FAQs through the University Registrar.

This site is updated any time there are changes made regarding the SIS. The University registrar is also available to help with SIS-related issues. The number to the registrar's office is 216.368.4310.

2017 – 2018

Department of Population & Quantitative Health Sciences

Student Handbook

MS in Epidemiology & Biostatistics

SCHOOL OF MEDICINE
CASE WESTERN RESERVE UNIVERSITY

Department of Population & Quantitative Health Sciences

School of Medicine, Wood Building, Room WG-57
Case Western Reserve University
10900 Euclid Avenue
Cleveland, Ohio 44106-4945
http://epbiwww.case.edu

Jonathan Haines, PhD
Chair, Mary W. Sheldon Professor of Genomic Sciences

Ena McDowell
Assistant to the Chair

Mendel Singer, PhD, MPH
Vice Chair for Education, Department of Population & Quantitative Health Sciences
MS Program Director
Email: mendel@case.edu
Phone: 216.368.1951

Nickalaus Koziura, EdM
Administrative Director of Non-Clinical Graduate Education
Email: nickalaus.koziura@case.edu
Phone: 216.368.5957

School of Graduate Studies
Tomlinson Hall, Room 203
(216) 368-4390 (phone)
(800) 368-4723 (toll free)
(216) 368-2000 (fax)
gradstudies.case.edu

Charles Rozek, PhD, Vice Provost & Dean

Lynmarie Hamel, JD, Associate Dean of Graduate Studies

Brandon Bowman, Manager of Graduate Academic Affairs

Additional University Offices

Access Services (IDs & Parking)
Crawford Hall, Room 18
(216) 368-2273
www.case.edu/finadmin/security/access/access.htm

Career Center
Sears Building, Room 206
(216) 368-4446
studentaffairs.case.edu/careers

Financial Aid
Yost Hall, Room 417A
(216) 368-4530
finaid.case.edu

Free Computer Support & Service
11424 Bellflower Rd.
(216) 368-4357
help.case.edu

Registrar
Yost Hall, Room 110
(216) 368-4310
www.case.edu/registrar

Student Affairs
Adelbert Hall, Room 110
(216) 368-2020
studentaffairs.case.edu

University Health Service (Student Medical Center)
2145 Adelbert Rd.
(216) 368-2450
studentaffairs.case.edu/health

University Counseling Services
Sears Building, Room 201
(216) 368-5872
studentaffairs.case.edu/counseling

Police & Security Services
Emergency - 911
Urgent Matters; Safe Ride; Escort Service: (216) 368-3333
Safe Ride Program (7pm-3am)
Security Escort Service (24 Hours)
Security (Information) - (216) 368-4630
www.case.edu/finadmin/security/

University Circle Police
2100 Euclid Avenue
(216) 791-1234

Welcome from the Graduate Program Director

Welcome to the Masters of Science Program in Epidemiology and Biostatistics in the Department of Population and Quantitative Health Sciences at Case Western Reserve University School of Medicine! This handbook is a general summary of academic program information and should be used in consultation with an academic advisor. Students should also review the Case Western Reserve University's Student Handbook which describes the University requirements for graduation . The Department of Population and Quantitative Health Sciences has additional expectations and requirements. Those expectations are detailed in this handbook. If a student is uncertain about a requirement or perceives a conflict, then the student should bring this to the attention of her/his academic advisor. Any variation in policy or expectations will be documented and notification will be sent to impacted students.

Congratulations on taking your first step and we are excited to have you in our program!

Sincerely,

Mendel Singer, PhD, MPH
MS Program Director
Vice Chair for Education, Department of Population and Quantitative Health Sciences

Table of Contents

Mission, Values and General Orientation

The mission of this program is to train outstanding biostatistics professionals who will become important contributors to primarily health-related research. Our graduates are prepared to be extremely competitive in the job market, while also being prepared for doctoral studies, which many of our graduates choose to pursue.

Biostatisticians are professionals who are part of teams that determine the best ways to prevent and treat disease, and increase knowledge of human health and disease to pave the way for future discovery. Our faculty, students and graduates aren't just "numbers people". They are health research professionals who are passionate about using their natural talent and training to improve health and save lives. As a biostatistician, you will design and analyze studies to ensure the goals of the study can be met, effectively and consistently. You will work in collaboration with clinical and scientific experts, and learn a great deal about the subjects you study. Our graduates are ready to be full-fledged co-investigators.

Students will master the rigorous scientific and analytic methods necessary to be at the forefront of efforts to not only describe, but effectively evaluate and improve population health. Research and professional development seminars will help you keep abreast of current literature and identify important areas of research and collaborative opportunities, as well as guide you in choosing a career path and prepare for the job search. The department operates within a strong interdisciplinary framework involving faculty and staff in the department, the School of Medicine, and across the entire university, as well as leaders in health care institutions and health-oriented organizations and agencies throughout the wider community. More than 200 graduate students outside the Biostatistics program are pursuing the Master of Public Health, PhD in Epidemiology and Biostatistics, or the M.S. in Clinical Research –and there are certificate students as well. Our M.S. in Epidemiology and Biostatistics program was previously divided into separate programs for students pursuing Epidemiology and those pursuing Biostatistics. At present, we offer only the Biostatistics program. We plan to introduce a more specialized Global Health Epidemiology program, possibly as soon as Fall 2018. The rich atmosphere provided by this mix of students simulates the "team science" approach that dominates research today. The diversity in students mirrors the diversity in areas of faculty expertise. Students are encouraged to engage with students and faculty from other programs.

Graduates from accredited universities and colleges will be considered for admission to the department. All applicants must satisfy both CWRU and department requirements for graduate admission. All incoming MS students take a required 31-credit curriculum, which includes 18 credits of core and 9 track-specific credits, 1 Biostatistical Consulting credit, and 3 Internship/Practicum credits. Current track options for the MS in Biostatistics are: Biostatistics, Genomics and Bioinformatics, Health Care Analytics, and Social & Behavioral Science (see descriptions below). On completion of the internship/practicum requirements, students must submit a written report detailing the project and their role. This written report serves as a comprehensive exam for the MS program.

Biostatistics Track

The biostatistics-track students will receive a carefully designed balanced training in biostatistical theories, methods, and biomedical applications. This track student will gain mastery of basic probability theory and statistical inference, learn the methods of longitudinal analysis, and still have the flexibility to choose an elective from advanced courses. The didactic methods and theory, and hands on analytical training would lead to either the pursuit of an advanced relevant degree and/or work as a master's level biostatistician in various settings, e.g. academia, industry, or government agencies.

Track-Required Courses:

Introduction to Mathematical Statistics (PQHS 480)
Longitudinal Data Analysis (PQHS 459)
One of the following courses:
- Machine Learning and Data Mining (PQHS 471)
- Multivariate Analysis and Data Mining. (STAT 426)

Track Leader:

Dr. Abdus Sattar, PhD
Email: sattar@case.edu
Phone Number: (216) 368-1501
Website: sattar.case.edu

Genomics and Bioinformatics Track

Students will be trained to work in genomics and bioinformatics areas. In addition to the basics in biostatistics, they will learn the designs, methods, techniques, and tools that are commonly used in genetic epidemiology, statistical genomics, and bioinformatics research. Target job positions are analyst, statistician and bioinformatics in a genomics or genetic epidemiology research team in a research institute/university, pharmaceutical or biotech company.

Track-Required Courses:

Introduction to Genomics and Human Health (PQHS 451)
Statistical Methods in Genetic Epidemiology (PQHS 452)
Design & Analysis of Sequencing Studies (PQHS 457)
Machine Learning & Data Mining (PQHS 471)*

*Replaces Survival Analysis (PQHS 435) as core requirement

Track Leader:

Chun Li, PhD
Email: cxl791@case.edu
Phone Number: (216) 368-5633

Health Care Analytics

Biostatistics is a vital part of clinical research, which includes both observational studies and randomized clinical trials. Modern clinical, or patient, research takes advantage of innovative methodologies for the design and analysis of such studies to increase the likelihood of success and minimize patient burden and the use of scarce resources. Clinical research biostatisticians work as part of multi-disciplinary teams with clinical and statistical investigators to develop and execute study designs and analysis plans with scientific rigor, and in support of regulatory requirements by sanctioning bodies and funding agencies. Principal roles include the design, analysis, coordination and reporting of observational and trial-based clinical research studies. Most of a clinical research biostatistician's work is dedicated to evaluating, executing and reporting on well-designed studies to help investigators meet their scientific objectives. Related job titles include biostatistician, lead, senior or principal biostatistician, consulting statistician, statistical researcher, statistical programmer, clinical informaticist, data scientist and clinical research manager. Such positions require strong written and verbal communication skills, and the ability to work as part of a team with subject matter experts on protocol development and statistical reporting. Biostatisticians completing the Health Care Analytics track will be well-positioned to apply for positions in industry, academia (including teaching hospitals) and government. Recent graduates of similar programs have found excellent positions with pharmaceutical companies, university and health system-based research groups, and within various health industries.

Track-Required Courses:

Large Health Care Databases and Electronic Health Records (PQHS 515)
Two of the following courses:

- Longitudinal Data Analysis (PQHS 459)
- Observational Studies (PQHS 500)
- Clinical Trials (PQHS 450)
- Machine Learning and Data Mining (PQHS 471)

Track Leader:

Thomas Love, PhD
Email: tel3@case.edu
Phone Number: 216.778.1265

Social & Behavioral Science

Students will be trained to work as analysts and research assistants in the social and behavioral sciences, including anthropology, sociology, psychology, psychiatry, and social work. Students will be trained in the most common study designs and analytic methods in these application areas. Such work often involves collaboration with multidisciplinary teams in community-practice / biomedical settings, with a focus on developmental, social/behavioral, cognitive, and/or mental health outcomes. This track is intended for students whose undergraduate work involved a major or minor in one of the social and behavioral sciences. It was created to serve the needs of social and behavioral science researchers who need research analysts trained in statistics, but with an understanding of their field and familiarity with qualitative and mixed methods as well. Target job positions are in academia, government, and research institutes.

Track-Required Courses:

Longitudinal Data Analysis (PQHS 459) *

*Replaces Survival Analysis (PQHS 435) as core requirement

Structural Equation Modeling (NURS 632)

Qualitative and Mixed Methods (MPHP 482)

One of the following courses:

Measurement of Behavior (PSCL 412 or PQHS 412)

Track Leader:

Arin Connell, PhD
Email: arin.connel@case.edu
Phone Number: 216.368.1550

General Requirements

The degree of Masters of Science in Biostatistics is awarded in recognition of general knowledge of foundational areas of biostatistics and specialized study in an area of application (one of four tracks). Graduates will have demonstrated their ability to perform biostatistical analysis and to communicate the results in a formal written project report. Our goal is to produce biostatisticians who will be full-fledged and valued collaborators in health-related projects. Students will also be prepared for success in a doctoral program.

The Masters of Science in Biostatistics degree in the Department of Population and Quantitative Health Sciences comprises the following components:

- Core Curriculum (18 credit hours)
- Track-required course (9 credit hours)
- Biostatistical Consulting (1 credit hour)
- Internship/Practicum (3 credit hours)
- Written report from internship/practicum (Serves as final exam for MS degree)

Core Curriculum (19 credits)

The basic core curriculum is designed to provide MS students with the foundational material for all tracks within the Department. The Basic Core Curriculum is comprised of 18 credits in the following courses:

Data Management and Statistical Programming (3 credits) PQHS 414 (Fall)
Statistical Methods in Biological and Medical Sciences I (3 credits) PQHS 431 (Fall)
Statistical Methods in Biological and Medical Sciences II (3 credits) PQHS 432 (Spring)
Survival Analysis (3 credits) PQHS 435* (Spring)
Categorical Data Analysis (3 credits) PQHS 453 (Summer)
Introduction to Epidemiology (3 credits) PQHS 490 (Fall)
Introduction to Biostatistical Consulting (1 credit) PQHS 602 – Section 102 (Fall)

*Survival Analysis is replaced by Machine Learning (PQHS 471) in the Genomics and Bioinformatics track and by Longitudinal Data Analysis (PQHS 459) in the Social and Behavior Science track.

Tracks – Required Courses (9 credits)

The MS coursework requirement also consists of concentrated studies within one of the four tracks offered by our department: Biostatistics, Genomics and Bioinformatics, Health Care Analytics, Social and Behavioral Science.

Most MS students will specify a track when they apply to or after being accepted to the program. Students seeking to complete the program using the intensive 1-year format must declare a track prior to beginning of their first semester of courses. Students seeking to complete the program using the 2-year format must declare a track by the end of their first spring semester.

Track Required Courses

Biostatistics (9 credits)

Introduction to Mathematical Statistics (PQHS 480)
Longitudinal Data Analysis (PQHS 459)
One of the following courses:
Machine Learning and Data Mining (PQHS 471)
Multivariate Analysis and Data Mining. (STAT 426)

Genomics and Bioinformatics (9 credits)

Introduction to Genomics and Human Health (PQHS 451)
Statistical Methods in Genetic Epidemiology (PQHS 452)
Design & Analysis of Sequencing Studies (PQHS 457)
Machine Learning & Data Mining (PQHS 471)*
*Replaces Survival Analysis (PQHS 435) as core requirement

Health Care Analytics (9 credits)

Large Health Care Databases and Electronic Health Records (PQHS 515)
Two of the following courses:
Longitudinal Data Analysis (PQHS 459)

Observational Studies (PQHS 500)
Clinical Trials (PQHS 450)
Machine Learning and Data Mining (PQHS 471)

Social & Behavioral Science (9 credits)
Longitudinal Data Analysis (PQHS 459) *
*Replaces Survival Analysis (PQHS 435) as core requirement
Structural Equation Modeling (NURS 632)
Qualitative and Mixed Methods (MPHP 482)
One of the following courses:
Measurement of Behavior (PSCL 412or PQHS 412)

Internship/Practicum – 3 credits – PQHS 602

The internship/practicum is a crucial part of the student's training, where the student can experience the life cycle of an analysis and participate in the research process and see how a biostatistician collaborates. This experience helps prepare the student for future job interviews and jobs, and may lead directly to a job. All students must complete a 3 credit internship/practicum, registering for 3 credits of PQHS 602 in the section for their track leader. Each internship must be approved, using the form to be filled out by the student and signed by the preceptor and the student. The internship/practicum approval form is available from the Administrative Director for Non-Clinical Graduate Education. These may be completed at any time of year. It is perfectly fine for the time period to straddle more than 1 academic semester, in which case the student will typically register in the final semester in the internship/practicum period. We define an internship as being done on-site, while a practicum is done off-site under the supervision of a faculty member. The internship/practicum requires at least 160 hours of work (may be paid or unpaid) and be conducted under the supervision of a suitably trained preceptor, usually a biostatistician. We encourage off-campus internships (e.g. at affiliated hospitals or NIH or a pharmaceutical company) when appropriate. During an internship or practicum the student will complete an analysis from start to finish and write a full report of the project, with their role clearly stated. A typical report should include a substantive write-up of the study's background, methods, results and discussion – much like a published

paper or formal internal company study report. Students may not have been a participant in every aspect of the study, and should be clear in the write-up as to what they themselves did. Regardless of their role, the report should include relevant aspects of the background and methods sections so the study itself is adequately described. There should also be a one page abstract. Writing this report is an important part of the internship/practicum experience, and serves as the written exam for the MS degree. It is graded (A-F) by the track leader.

Track Comparison Chart

	Biostatistics	Health Care Analytics	Genomics & Bioinformatics	Social & Behavioral Science
Required Courses	PQHS 414 – Data Management and Statistical Programming (Fall) – 3 Credits			
	PQHS 431 (Section 100) – Statistical Methods in Biological and Medical Science I (Fall) – 3 Credits			
	PQHS 432 – Statistical Methods in Biological and Medical Science II (Spring) – 3 Credits			
	PQHS 453 Categorical Data Analysis (Summer) – 3 Credits			
	PQHS 490 – Epidemiology: Introduction to Theory and Methods (Fall) – 3 Credits			
	PQHS 602 (Section 102) – Introduction to Biostatistical Consulting (Fall) – 1 Credit			
	PQHS 602 – Internship/Practicum (Summer) – 3 Credits			
Track Specific Courses	PQHS 435 – Survival Analysis (Spring) – 3 Credits		PQHS 471- Machine Learning & Data Mining (Spring) – 3 Credits	PQHS 459 - Longitudinal Data Analysis (Spring) – 3 Credits
	PQHS 480 – Intro to Statistical Theory (Fall) – 3 Credits	PQHS 515 – Secondary Analysis of Large Health Care Data Bases (Fall) – 3 Credits	PQHS 451 – A Data Driven Introduction to Genomics and Human Health (Fall) – 3 Credits	NURS 632 – Advanced Statistics: Structural Equation Modeling (Spring) – 3 Credits
	PQHS 459 - Longitudinal Data Analysis (Spring) – 3 Credits	**Select 2 of the Following**	PQHS 452 – Statistical Methods for Genetic Epidemiology (Spring) – 3 Credits	MPHP 482 – Qualitative and Mixed Methods Research (Fall) – 3 Credits
	Select 1 of the Following	PQHS 459 - Longitudinal Data Analysis (Spring) – 3 Credits	PQHS 457 – Design & Analysis of Sequencing Studies (Spring) – 3 Credits	**Select 1 of the Following**
	PQHS 471- Machine Learning & Data Mining (Spring) – 3 Credits	PQHS 500 – Design & Analysis of Observational Studies (Spring) – 3 Credits		*PSCL 412- Measurement of Behavior (Spring) – 3 Credits
	STAT 426 – Multivariate Analysis & Data Mining (Spring) – 3 Credits	PQHS 450 Clinical Trials (Spring) – 3 Credits		*PQHS 412 - Measurement of Behavior (Spring) – 3 Credits
		PQHS 471- Machine Learning & Data Mining (Spring) – 3 Credits		* Taught in alternating years

Planned Program of Study

In adherence with the School of Graduate Studies' policy, during the first semester of study, all students are responsible for ensuring that they have a Planned Program of Study (PPOS) on file, submitted through the Student Information System (SIS). The PPOS consists of all courses a student plans to take to meet the requirements for his/her degree. This includes all required coursework and electives. The Planned Program of Study must be approved by the student's academic advisor and should be submitted by October 15 of the first semester of study toward the degree specified, and updated, if necessary, by October 1 of each subsequent year in which the student is registered. Students are responsible for discussing their background and future academic and career goals with their academic advisor so that the best possible plan is developed.

Students enrolled in the MS program are expected to successfully complete all coursework, research, and other requirements for the Masters of Science degree.

Academic Advisor

Upon acceptance into the MS program, each student will be assigned an initial academic advisor (usually the Program Director) who will guide the student through department and graduate school regulations, assist him or her in designing their first semester course registration and an initial draft of their program of study. Students will often switch their academic advisor to their track leader or other program faculty, and this is encouraged. This can be done by first contacting the current advisor and then emailing the Administrative Director of Non-Clinical Graduate Education. The academic advisor will track the student's progress toward degree completion, help with selecting electives and provide career advice.

Students are required to meet with their academic advisors prior to registering each semester to discuss course plans for the semester. Once completed, the advisor will remove the "Advisor Hold" on the student's record within the Student Information System (SIS) so that he/she may register for classes.

Student Responsibility

Students should consult with their academic advisor to plan their planned program of study (PPOS) in order to carry out their work in accordance with applicable laws, regulations, and procedures. Nevertheless, it is solely the student's responsibility to become acquainted with and adhere to Departmental and University rules, regulations, and administrative procedures governing graduate study, including the University's Standards of Conduct detailed in the Case General Bulletin, Graduate Student Handbook, School of Graduate Studies Statement of Ethics, University Guidelines on Authorship and Policy on Copyright, and the University Policy on Academic Integrity.

Sample Planned Program of Studies (PPOS)

Half-Time Planned Program of Study (PPOS)

Half-Time – Biostatistics Track

	Year 1			Year 2		
	Fall	**Spring**	**Summer**	**Fall**	**Spring**	**Summer**
	PQHS 431 - 100	PQHS 432	PQHS 453	PQHS 490	Track Elective	Practicum/Internship
	PQHS 480	PQHS 435		PQHS 414	Track Elective	
				PQHS 602 - 102(1)		
Total Credits	6 credits	6 credits	3 credits	7 credits	6 credits	3 credits

Half-Time – Genomics and Bioinformatics Track

	Year 1			Year 2		
	Fall	**Spring**	**Summer**	**Fall**	**Spring**	**Summer**
	PQHS 431 - 100	PQHS 432	PQHS 453	PQHS 414	PQHS 452	Practicum/Internship
	PQHS 490	PQHS 471		PQHS 451	PQHS 457	
				PQHS 602 - 102(1)		
Total Credits	6 credits	6 credits	3 credits	7 credits	6 credits	3 credits

Half-Time – Healthcare Analytics Track

	Year 1			Year 2		
	Fall	**Spring**	**Summer**	**Fall**	**Spring**	**Summer**
	PQHS 431 - 100	PQHS 432	PQHS 453	PQHS 414	Track Elective	Practicum/Internship
	PQHS 490	PQHS 435		PQHS 515	Track Elective	
				PQHS 602 – 102 (1)		
Total Credits	6 credits	6 credits	3 credits	7 credits	6 credits	3 credits

Half-Time – Social and Behavioral Science

	Year 1			Year 2		
	Fall	**Spring**	**Summer**	**Fall**	**Spring**	**Summer**
	PQHS 431 - 100	PQHS 432	PQHS 453	PQHS 414	NURS 632	Practicum/Internship
	PQHS 490	PQHS 459		MPHP 482	PSCL/PQHS 412	
				PQHS 602 – 102 (1)		
Total Credits	6 credits	6 credits	3 credits	7 credits	6 credits	3 credits

Intensive (11-month) Planned Program of Study

Intensive Format – Biostatistics Track

Fall	Spring	Summer
PQHS 431 - 100 (3 credits)	PQHS 432 (3 credits)	PQHS 453 (online) (3 credits)
PQHS 490 (3 credits)	PQHS 435 (3 credits)	PQHS 602 (3 credits)
PQHS 414 (3 credits)	PQHS 459 (3 credits)	
PQHS 480 (3 credits)	PQHS 471 or STAT 426 (3 credits)	
PQHS 602 – 102 (1 credit)		
13 credits	12 credits	6 credits

Intensive Format – Genomics and Bioinformatics Track

Fall	Spring	Summer
PQHS 431 - 100 (3 credits)	PQHS 432 (3 credits)	PQHS 453 (online) (3 credits)
PQHS 490 (3 credits)	PQHS 452(3 credits)	PQHS 602 (3 credits)
PQHS 414 (3 credits)	PQHS 457 (3 credits)	
PQHS 451 (3 credits)	PQHS 471 (3 credits)	
PQHS 602 – 102 (1 credit)		
13 credits	12 credits	6 credits

Intensive Format – Health Care Analytics Track

Fall	Spring	Summer
PQHS 431 - 100 (3 credits)	PQHS 432 (3 credits)	PQHS 453 (online) (3 credits)
PQHS 490 (3 credits)	PQHS 435 (3 credits)	PQHS 602 (3 credits)
PQHS 414 (3 credits)	Two of the Following:	
PQHS 515 (3 credits)	PQHS 450 (3 credits)	
PQHS 602 – 102 (1 credit)	PQHS 459 (3 credits)	
	PQHS 471 (3 credits)	
	PQHS 500 (3 credits)	
13 credits	12 credits	6 credits

Intensive Format – Social and Behavioral Science Track

Fall	Spring	Summer
PQHS 431 - 100 (3 credits)	PQHS 432 (3 credits)	PQHS 453 (online) (3 credits)
PQHS 490 (3 credits)	NURS 632 (3 credits)	PQHS 602 (3 credits)
PQHS 414 (3 credits)	PQHS 459 (3 credits)	
MPHP 482 (3 credits)	PQHS 412 or PSCL 412 (3 credits)	
PQHS 602 – 102 (1 credit)		
13 credits	12 credits	6 credits

Student Information System (SIS)

The Student Information System (SIS) is a secure, flexible, web-based environment for creating and managing academic records at Case Western Reserve University.

The Student Center section of the SIS is the main launching point for accessing academic, financial and personal information. SIS can be accessed via the "quick link" section at the bottom of the CWRU homepage.

Students can access training guides, information, references, and FAQs through the University Registrar.

This site is updated any time there are changes made regarding the SIS. The University registrar is also available to help with SIS-related issues. The number to the registrar's office is 216.368.4310.

Professional Commitment and Culture

The MS program in Biostatistics is a professional degree with a deep commitment to lifelong learning, and students in the program are expected to maintain appropriate professional standards. This includes regular, on-time attendance of classes and participation in a variety of professional development activities. Strong involvement in research, service, and professional social activities is encouraged, with an emphasis on developing impeccable research credentials, independent critical thinking, and problem solving. Students must recognize that voluntary enrollment in this rigorous graduate program may place demands on their time on evenings and weekends, and may prohibit them from taking on outside activities. Students must display maturity of character, interest in the practice of research, excellence in development of interpersonal communication, and high professional commitment to the program of study; they must espouse integrity, honesty, and courtesy, all important professional values.

Communication Among Students, Faculty, and Staff

All students enrolled at Case Western Reserve University are given a Case Email address and Network ID. The general format for a CWRU email address is firstname.lastname@case.edu. Students also receive a Network ID, which generally consists of their first, middle, and last name initials followed by a number (ex: abc123@case.edu). This Network ID will give you access to your Case Webmail account, SIS, and any other University-related login systems that you have access to. If you use another email account, please ensure that you read both accounts regularly or that you forward the CWRU email to your regular email.

Students are responsible for reading the information and content of communications sent to their Case Email account at least once a day. Faculty, students, and staff often use the CWRU email system to communicate information about courses, seminars, events, etc., particularly when personal notification (e.g. during class) is not possible. You will be held accountable for missed information if you fail to check your email in a timely manner.

Waiving a Course

If a student has taken a course elsewhere that is equivalent to a required course, the student may petition the MS Program Director to waive the course requirement and replace it with an elective. Waiving a requirement does not change the number of credits required at CWRU for the degree. Only petition for transfer of credits (using courses taken elsewhere that were not used towards a degree) can reduce the credit requirement.

If the course taken elsewhere is not deemed equivalent but has large overlap, the student may be given the option to replace the required course with another, more advanced one in the same subject area. Similarly, the student may initially request to replace the required course with a more advanced one, rather than to waive it entirely.

To request being waived out of a required course, or to replace it, students may petition using the official Petition to Modify Course Requirements, which can be found on the department website. The petition must provide documentation of the relevant courses completed, with a grade of "B" or higher, a detailed description of the course(s),

the syllabus, and textbook used in the completed course(s). The petition should be approved by the academic advisor and submitted to the MS Program Director for approval.

The MS Program Director will approach the instructor of the course(s) in question with the petition. The instructor will then evaluate the student's petition, and can either approve or disapprove of the course being waived, or may instead approve replacing the required course with another, advanced course in the same area. In this last case, the replacement course needs to be specified with a plan for when to take it. Special attention must be paid to prerequisites for this replacement course and when it is offered.

Students can petition to replace a maximum of 2 core courses.

Repeating a Course

Graduate students may petition the Vice Chair for Education to repeat a maximum of two courses during their degree program in order to improve their performance. The appropriate form, together with details of this policy can be found at http://gradstudies.case.edu/current/forms.html

Transfer of Credit

Transfer of credit from another university toward degree requirements is awarded for appropriate course work (not applied to another degree program) taken prior to admission. Transfer of credit should be requested in the student's first academic year, and must be appropriate for the student's planned program of study. Transferred credit is limited to six credits of graduate-level courses, and no credit for a master's thesis may be transferred from another university. No transfer of credit will be awarded towards the MS degree except by petition.

Students who wish to receive credit for courses taken outside the university once they are enrolled must petition for approval. All transfer of credit requires approval from the student's academic advisor, the MS Program Director, and the Dean of Graduate Studies. Such courses must have been taken within five years of first matriculation at CWRU and passed with grades of B or better.

Internal Transfer of Credit

Students of exceptional ability in the undergraduate programs of Case Western Reserve University who have the approval of the Office of Undergraduate Studies and the School of Graduate Studies may apply to receive credit for graduate courses completed in excess of the undergraduate degree requirements.

Graduate students who internally transfer to another degree program may seek approval to transfer coursework from the original degree program by petition.

Students who initially took program courses as non-degree students and later matriculate into the program, can have these courses transferred so they fully count towards degree requirements. In general, we discourage students from taking many courses non-degree without entering the program as this typically leaves them out of the advising loop and could potentially lead them to take courses that might not count for the program. Students are bound by the program rules in effect when they officially *enter* the program, not from when they started taking courses as a non-degree student.

Waiver of Registration

It is a requirement of the School of Graduate Studies that a student be registered for credit in the semester in which he or she completes all the requirements to graduate in accordance with established deadlines for that semester. If a student will not be able to meet the degree requirements to graduate in one semester, but will finish before the next semester begins, he or she can apply for a waiver of the requirement to be registered in the semester of graduation. To be granted a waiver of registration, students must be registered for the PQHS 602 in the semester (or summer session) immediately preceding the semester of graduation, complete all degree requirements including a current application to graduate, and submit a copy of all required materials to the Administrative Director of Non-Clinical Graduate Education and the originals to the School of Graduate Studies by the end of the Drop/Add period of the next semester.

A student who qualifies for the waiver will be awarded the degree at the next graduation without the need to be registered. If a student fails to meet the waiver deadline, he or she will be required to register for PQHS 602 in the next semester, and to reapply for graduation in that semester.

Ethics in Conducting Research

All MS students must complete their CREC certification prior to beginning their internship/practicum. Upon completion of the online certification program, students should provide the Administrative Director of Non-Clinical Graduate Education a copy of their CREC certification. If a student comes into the program with a current certification, she/he may provide that certification instead; however, if the certification expires within one year, a renewal certificate will be required. Thereafter the student is responsible for recertification upon expiry of the original accreditation. She/he must give the Administrative Director of Non-Clinical Graduate Education the appropriate documents pertaining to recertification within two weeks of obtaining them.

More information regarding CREC certification can be found through the Office of Research and Technology Management.

Academic Integrity

All students are held responsible for the preservation of standards of academic integrity. All forms of academic dishonesty, including forgery, cheating, plagiarism, misrepresentation, and obstruction, are violations of academic integrity standards. Plagiarism includes the presentation, without proper attribution, of another's words or ideas from printed or electronic sources. It is also plagiarism to submit, without the instructor's consent, an assignment in one class previously submitted in another (self-plagiarism).

The University's Academic Integrity Board can sanction violations by issuing failure in the work in question, failure in the course, university disciplinary warning, university disciplinary probation, university disciplinary suspension, or expulsion.

The University also has guidelines on authorship standards. Further details can be found in the

University's policy on Academic Integrity: http://www.case.edu/gradstudies/current/policies.html

Changing a Course Grade

If a student needs to have a course grade changed from an incomplete, or from no entered grade, the instructor can change the grade online up to 1 year from the end of the semester. After that time period has elapsed, the instructor will need to fill out and sign a yellow change of grade card, and submit it to the Vice Chair for Education for signature and submission to graduate studies. A guide on how to submit an online grade change can be found through the University Registrar.

Students have an obligation to check their course grades promptly after the end of the semester. On rare occasion, a student may feel the letter grade (A-F) assigned was incorrect or unfair. In such a case, the student needs to contact the instructor immediately. If the instructor feels the student is justified, the instructor may request a grade change using the online grade change form in SIS. Justification for the grade change needs to be included in online form. Once a grade

change has been submitted it will be sent to the Vice Chair for Education and then to the Office of Graduate Studies for approval. This request from the instructor must be made within 30 days of the grade posting to SIS.

Grievance Procedure

Any student who has a grievance should consult, in order, the academic advisor, the MS Program Director, and the Vice Chair for Education (who will refer the case to an appointed grievance committee) and the Department Chair. Further, the School of Graduate Studies has a general policy to assure that all students enrolled for graduate credit at Case Western Reserve University have adequate access to faculty and administrative consideration of their grievances concerning academic issues. A three-step procedure has been established for graduate students to present complaints about academic actions they feel are unfair. These policies are detailed in the Student Code of Conduct.

Leaves of Absence

All students who are admitted to the MS program in the Department of Population and Quantitative Health Sciences are expected to pursue their studies according to a systematic plan. If it becomes necessary for a student to interrupt studies before completion of the degree, the student must request, in writing to the Vice Chair for Education, a leave of absence. The leave does not ordinarily extend the time limit to complete the degree (see Graduation below). Leaves of absence may not exceed two consecutive academic semesters, and the maximum amount of leave permitted per graduate program is four semesters. Petitions for a leave of absence require a form available from the School of Graduate Studies and require the approval of the student's academic advisor, Vice Chair for Education and Dean of Graduate Studies. Leaves of absence may be used for the medical conditions related to pregnancy and childbirth.

Many international students are not eligible to take a leave without jeopardizing their student status; prior approval from International Student Services is required.

Support for Students

Graduate study may be a stressful time for students, revealing a need to engage additional resources. It is helpful to set goals and personal deadlines. Students may consider tutoring support for learning disabilities through Student Affairs/Educational services, and/or counseling through University Counseling Services. University Counseling Services (UCS) and the Divisions of Collegiate Behavioral Health (CBH) and Prevention and Recovery Services (PRS) provide individual, group and couples counseling, psychiatric consultation, psychological and learning disabilities testing, and referrals for community services for all students and their spouses or partners.

Maintenance of Good Standing

To remain in good standing within the MS program, students must satisfy the following conditions:

- Respond in a timely manner to all department communications requiring it (check Case e-mail!).
- Register each fall and spring semester unless on an official leave of absence that has been approved by the School of Graduate Studies.
- Maintain a minimum cumulative graduate GPA of 3.00 in all graduate work.
- Receive a grade no lower than a "B" in any of the required core courses. If illness or other circumstances intervene, the student must notify the course instructor and advisor as soon as possible.
- Satisfy all program deadlines and time limits as outlined in the Academic Guide.
- Remove Incomplete (I) grades within one semester, or by the time specified by the course instructor.
- Complete written report from internship/practicum

Graduation

To receive a degree, the student is required to apply for graduation through the Student Information System (SIS) in the Office of Graduate Studies before the posted deadline during the semester the student expects to complete all degree requirements, and must be registered during the semester in which the degree is awarded. It is the responsibility of the student to secure signatures and return the necessary forms to the Office of Graduate Studies on time. Each student who applies for graduation should consult the calendar from the School of Graduate Studies for the various deadlines. Questions about graduation can be directed to the Administrative Director of Non-Clinical Graduate Education.

All MS students need a minimum GPA of 3.0 to graduate, and have a maximum of 5 years from matriculation to complete the degree requirements. Students who fail to complete the degree requirements after 5 years may petition the Office of Graduate Studies for an extension. This petition must be approved by the academic advisor, the MS Program Director, and the Vice Chair for Education for the department.

Summary of Deadlines

Application Submission	June 30th of each year.
Application Decision	July 31st of each year
Deadline to submit a form indicating that the student has read the Handbook *(to be submitted to Administrative Director)*	September 15th of the first semester of study
Plan of Study *(submitted via SIS)*	October 15th of the first semester of study
University Calendar of Deadlines:	http://www.case.edu/gradstudies/current/calendar.ht
Commonly Used Forms:	http://www.case.edu/gradstudies/current/forms.html

BYLAWS OF THE FACULTY OF
JACK, JOSEPH AND MORTON MANDEL SCHOOL MANDEL SCHOOL OF
APPLIED SOCIAL SCIENCES
CASE WESTERN RESERVE UNIVERSITY

Revised by the Mandel School Faculty - 9/25/2017
Ratified by Faculty Senate – 03/20/2013

Formatted: Section start: Continuous
Formatted: Not Highlight
Deleted: THE
Deleted: Revised by MSASS Faculty – 01/28/2013

Article 1
Purpose

1:1 These bylaws and all amendments adopted as hereinafter provided shall constitute the rules and regulations governing the conduct and procedures of the constituent faculty of the Mandel School of Applied Social Sciences (hereinafter called the faculty) in the performance of its duties, as specified in and authorized by the constitution of the University Faculty of Case Western Reserve University.

Article 2
Membership

2:1 Members

Members of the faculty shall be all persons holding tenured or tenure track appointments, non-tenure track appointments, or special faculty appointments, as defined in Article I, sections A, B, and C, of the Organization and Constitution of the Faculty, in the constituent programs of the Jack, Joseph and Morton Mandel School of Applied Social Sciences (hereafter called the Mandel School). Special faculty members include persons holding part-time or full-time academic appointments with specific limited responsibilities for the duration of a specific project or for a limited duration, including visiting faculty at all ranks, research faculty (at the ranks of assistant professor, associate professor, and professor), adjunct faculty (at the ranks of instructor and senior instructor and called adjunct instructor or adjunct senior instructor), field education faculty (at the rank of instructor and called field education instructor), specific named professors (according to requirements established for the position), and clinical special faculty at all ranks. All types and titles of special faculty are subject to the approval of the provost.

Formatted: Font: (Default) Times New Roman

Secondary appointments are made as special faculty appointments. They are designed for persons who hold primary appointments in other schools/departments within the university. Such an appointment shall be at the rank of instructor, senior instructor, assistant professor, associate professor, or professor.

A faculty member shall be considered full-time if he/she is engaged fifty percent or more time in approved academic activities and the academic activity is conducted at an approved site. Faculty members holding part-time appointments

shall be invited to attend faculty meetings but shall not hold elective positions. For voting rights see 2:6.

2.2 The majority of appointments shall be tenured or tenure track.

By separate resolution the constituent faculty of the Mandel School of Applied Social Sciences sets the specific ratio of tenured/tenure track to non-tenure track faculty. However, as stated in Article I, Section D of the University Faculty Handbook, except under special circumstances which are reviewed by the Faculty Senate and approved by the provost, the majority of the voting university faculty members at all times within each constituent faculty shall be tenured or tenure track faculty.

2:3 Terminations in the Case of Financial Exigent Circumstances

In accordance with Chapter 3, Part One, I, E., 3. of the University Faculty Handbook, these bylaws set forth the following guidelines for termination of faculty in the event of financial exigencies facing the school. Special faculty, in reverse order of seniority of rank and years of service, would be terminated first. Then, if necessary, non-tenure track faculty in reverse order of seniority of rank and years of service would be terminated. Tenure track, but untenured faculty, in reverse order of seniority of rank and years of service would then be terminated. Finally, if all other remedies are exhausted, tenured faculty in reverse order of seniority of rank and years of service would be terminated.

2:4 *Ex-officio* Members

The president and provost shall be *ex-officio* members of the faculty as provided in the bylaws of the University Board of Trustees.

2:5 Student Representatives

One student from each class (first and second year) in the masters program and one at-large from the doctoral program students shall be voting members of the faculty. An alternate shall also be designated who shall have voting rights if a voting member is not present.

Students from the masters program are selected by the chair and members of the officially recognized student government organization. The doctoral student selected by the doctoral student body to represent them in the Doctoral Program Executive Committee shall act as the doctoral representative.

2:6 Voting Members

a. All tenured, tenure track and non-tenure track members of the faculty and student representatives may vote on general faculty matters. Student

representatives may not vote on any matters pertaining to their own or other students' candidacy for degrees. Special faculty members have no vote on any matters coming before the university faculty. However, specified categories of special faculty including Research and Clinical Special Faculty may vote on particular matters coming before the Mandel School faculty, with prior approval of the voting faculty..

b. Administrative directors without academic rank not defined as members of the faculty may vote on the Mandel School internal matters if so approved by the voting faculty members with prior notice.

2:7 Certification of Voting Members

The dean of the Mandel School of Applied Social Sciences shall certify the names of all administrative directors, faculty members, and students who are voting members of the faculty, and their respective ranks, titles, and positions within 30 days after the beginning of the academic year and thereafter as new appointments occur. This list shall be circulated to the faculty as soon as possible after the beginning of the academic year.

2:8 Faculty Roster

The dean shall furnish to the secretary of the university a list of all members of the faculty in accordance with Article 1, Section F, of the constitution of the University Faculty.

2:9 Voting Members of Committees

All tenured, tenure track, non-tenured track and special faculty are voting members of standing or *ad hoc* committees to which they are appointed or elected.

Article 3
Meetings

3:1 Regular Meetings

The faculty shall hold meetings as appropriate, but not less than two full meetings per semester, on dates to be determined by the dean.

Administrative directors without academic rank may be invited to attend faculty meetings but shall not hold elective positions.

3:2 Special Meetings

Deleted: and no vote on any matter coming before the MSASS faculty, unless specifically asked, with prior notice, to vote on a particular issue by the voting faculty

Deleted: MSASS

Formatted: Indent: First line: 0"

Formatted: Indent: First line: 0"

Formatted: Indent: First line: 0"

Special meetings shall be held at the request of the president or the dean, or on petition to the dean by 20 percent of the voting members of the faculty, stating the purpose of the proposed meeting.

3:3 Presiding Officer - Rules of Order

The president or designated deputy shall preside at both regular and special meetings and shall conduct such meetings in accordance with *ROBERTS RULES OF ORDER*, latest edition. A faculty parliamentarian may be appointed by the dean.

Formatted: Indent: Left: 0.5"

Deleted: ¶
Page Break

3:4 Minutes

A person shall be designated by the dean who shall record the attendance at all meetings of the faculty and shall keep the minutes of all such meetings.

3:5 Quorum and Procedure of Voting

Sixty percent of the voting members of the faculty shall constitute a quorum and all decisions shall be by majority vote of those present, providing a quorum is present, except as specified.

Article 4
Committees

4:1:1 Educational Policy Authority

The authority for educational policy rests with the faculty as a whole. Committees act in their behalf and are ultimately responsible to the faculty.

Formatted: Indent: First line: 0"

4:1:2 Standing Committees

Formatted: Indent: First line: 0"

Standing committees of the faculty shall be the Steering Committee, Faculty Committees for Promotion and Tenure, Masters Curriculum Committee, Committee on Students, Committee on the Doctoral Program, the Library Committee and the Information Technology Committee. Faculty and/or the dean may at any time establish committees to study and make recommendations on any matter within the jurisdiction of the faculty. Chairpersons of all standing committees shall be appointed by the dean except as specified in the bylaws. Unless exceptions are noted, only tenured, tenure track and non-tenure track faculty shall serve on standing committees.

4:1:3 Standing Committee Procedures

Formatted: Indent: First line: 0"

Members of the Steering Committee, Masters Curriculum Committee, the Doctoral Program Executive Committee and the Information Technology Committee shall be selected during the spring semester. Their terms of

membership and method of selection shall be as specified by faculty in procedures guiding operation of each committee.

4:1:4 Committee Rosters

The dean shall prepare and distribute annually to all faculty members a list of all members of standing, advisory, and *ad hoc* committees.

Formatted: Indent: First line: 0"

4:2:1 Steering Committee-Function

The purpose of the Steering Committee shall be to make recommendations to the faculty on policies related to the governance of the school. The functions of the Steering Committee shall include but not be limited to the following:

a. making recommendations to the faculty on the mission and overall direction of the school;

b. advising the dean and consulting with him/her on the appointment of major academic officers, on the granting of sabbatical leave requests, on formulation of the budget, on the allocation of the school's resources and facilities, on long-range planning, and other matters of similar concern to the faculty;

c. reviewing and monitoring the school's budget;

d. reviewing current programs, policies, and organizational structures with regard to their effectiveness, and exercising initiative in proposing the development and introduction of new programs, policies, and organizational structures; and

e. recommending bylaws revisions and amendments.

4:2:2 Steering Committee - Membership – Structure

The Steering Committee shall consist of the chairperson, six elected faculty members, and the faculty representative on the Senate Executive Committee *ex officio*. The dean, associate dean of academic affairs and the associate dean of research and training, the chairperson of the doctoral program, and the director of field education shall participate as *ex-officio* members.

The chairperson and faculty members of the Steering Committee shall be elected from the entire faculty eligible to vote. Elected members shall serve overlapping three-year terms. Vacancies shall be filled by election. Members shall be eligible for re-election.

A standing Budget Subcommittee appointed by the Steering Committee chair shall consult with the dean on the formulation and implementation of the school's

budget. Budget Subcommittee members can include faculty who are not members of the Steering Committee.

A standing Research & Training Subcommittee of the Steering Committee shall monitor the research and training activities of the school. The chair and members of this Subcommittee shall be appointed by the Steering Committee chair.

4:2:3 Steering Committee - Meetings

Meetings of the Steering Committee shall be held at least twice in a semester and on call of the chairperson who shall give appropriate notice of all meetings to each member of the committee, specifying time, place, and agenda of the meeting. Steering Committee meetings shall be open to all members of the faculty.

4:3:1 Faculty Committees for Promotion and Tenure

In accordance with the Faculty Handbook (Chapter 3, Part One, I, A., 3.), at the time of the initial appointment, the faculty member shall be provided with a general written description of 1) the criteria by which his/her performance will be judged, and 2) the teaching, research and scholarship, and service required to maintain faculty status and for renewal of appointment, promotion, and/or tenure, as applicable.

The criteria for each category of faculty appointment and for promotion and tenure are developed by the the Mandel School faculty and described in Bylaws Attachment A, subject to approval by the provost, as appropriate for its discipline, and following the criteria set forth in Chapter 3, Part One, I, F., 3. of the University Faculty Handbook. The the Mandel School faculty shall also set forth written procedures providing for an appropriate review of each member of the faculty, as defined in Chapter 3, Part One, I, F., 5. of the University Faculty Handbook. All faculty members, with the exception of part-time faculty, receive an annual review.

Deleted: MSASS

Deleted: MSASS

A Faculty Development Committee offers career guidance to each tenure track faculty member during the pre-tenure period. The option of forming an advisory committee for the purpose of career guidance and development shall be available to tenured faculty seeking promotion, non-tenure track faculty, research faculty and adjunct faculty as well.

The maximum pre-tenure period for the Mandel School tenure track faculty shall be six years. However, during the pre-tenure period, individual extensions may be granted in accordance with the guidelines set forth in Chapter 3, Part One, I, G., 5. and 6. of the University Faculty Handbook.

Deleted: MSASS

A committee consisting of all faculty eligible to vote shall meet to review candidates for promotion and tenure in accordance with the criteria and procedures for promotion and tenure established by the the Mandel School faculty.

Deleted: MSASS

These faculty shall consider all promotions and awards of tenure to insure the application of equitable standards for assessing credentials and to insure compliance with the personnel policy guidelines established by the university Faculty Senate.

On recommendations involving promotion of tenured and tenure track faculty, only tenured and tenure track faculty of rank equal or superior to the rank being considered shall be eligible to vote. On recommendations involving promotion of non-tenure track and special faculty, all voting faculty (tenured, tenure track, and non-tenure track) of rank equal or superior to the rank being considered shall be eligible to vote.

On recommendations involving tenure of tenure track faculty, only faculty with tenure shall vote.

The faculty committee considering promotion and/or tenure shall be chaired by the dean and shall make formal recommendations to the dean and university administration. The dean's position should not be included in the vote but should be transmitted to the university in a separate report accompanying the formal recommendations submitted by the committees.

The Mandel School criteria (approved 12/19/94) for consideration of promotion and tenure are organized into four areas, as specified in the CWRU Faculty Handbook. .
These are as follows:

Deleted: MSASS

1. expert knowledge of academic field and a commitment to continuing development of this competence;

2. effectiveness in facilitating learning;

3. implementation of a continuing program of research and scholarship;

4. assuming a fair share of school/university service and administrative tasks, including contributing to community and professional service.

The first criterion, “expert knowledge of academic field and a commitment to continuing development of this competence,” applies to all faculty: tenured, tenure track, non-tenure track, and special.

Deleted: MSASS

Tenured and tenure track faculty should provide evidence that they can and will continue to satisfy all of the other three criteria (2, 3 and 4).

Non-tenure track faculty should provide evidence that they can and will continue to satisfy at least two of the remaining three criteria (2, 3 and/or 4), depending on their initial appointment.

Special faculty should provide evidence that they can and will continue to satisfy at least one of the other three criteria (2, 3 and 4), depending on their initial appointment.

Faculty hired in the tenure track must remain in the tenure track. Faculty in the non-tenure track can apply for an open tenure track position, but if they move into a tenure track position, they cannot move back to a non-tenure track status.

The Mandel School shall provide an appropriate allocation of resources and time (taking into account rank and type of faculty appointment) for scholarly growth, academic achievement, and professional development, and shall delineate the commitment of resources that accompany an award of tenure.

Deleted: MSASS

Deleted: ¶
¶

4:3:2 Appointments Beyond Pre-Tenure Period

The Mandel School faculty members who have been denied tenure by the university may be given renewable term appointments not leading to tenure consideration, contingent upon full financial support from non-university resources. Such faculty members would be in the special faculty category.

Deleted: MSASS

4:4:1 Curriculum Committee - Function

Deleted: The

The purpose of the Curriculum Committee shall be to provide leadership, establish standards and initiate activities for overall planning, development, and coordination of the degree and non-degree or educational programs. It shall recommend to the faculty policies and procedures with respect to the following:

a. curriculum philosophy and standards;
b. overall structure;
c. alternative programs leading to the master's degree; and
d. requirements for matriculation and graduation.

It shall take responsibility for initiation and execution of ongoing and periodic assessment of programs; and shall establish criteria for reviewing educational programs and proposals.

It shall review the practices and proposals of sub-units to determine their appropriateness and compatibility with overall curriculum education policy and priorities.

The Curriculum Committee functions do not include doctoral education. All matters concerning doctoral program curriculum and standards are the purview of the Doctoral Program Faculty, as set forth in section 4:6:1.

4:4:2 Curriculum Committee – Membership

The committee consists of the following persons:

a. six full-time faculty members, balanced by rank and responsibility in the school, serving overlapping three-year terms;

b. the associate dean for academic affairs and/or designee;

c. two students elected by the officially recognized student government organization;

d. a representative selected by the Alumni Board;

e. one member from the adjunct faculty, appointed by the associate dean for academic affairs;

f. the administrator for student services;

g. the director of field education or a designee; and

h. a field instructor, recommended by the director of field education.

The committee chairperson shall be appointed by the dean.

Members of the faculty may submit nominations for committee membership to the chair of the committee and may nominate themselves. The Curriculum Committee will select nominees and, in the spring semester, present to the faculty a slate that meets the criteria for balance. The slate shall be sent to faculty at least one week in advance of the meeting at which the election is to occur. Any member of the faculty may submit an alternative slate.

Faculty shall be elected to overlapping three-year terms.

4:5:1 Committee on Students– Function

The Committee on Students shall be responsible for formulating policies related to carrying out its administrative functions and for recommending such policies to the Steering Committee and faculty for action.

The committee shall make administrative decisions regarding:

a. students whose behavior is determined by the Dean's Committee on Consultation to be in violation of the Professional Code of Conduct Policy (see the M.S.S.A. Program Instructor's Manual and the MSSA Student Handbook);

b. students who appear to be unable to make satisfactory progress in meeting field expectations;

c. students who wish to petition for reinstatement following termination.

Following deliberations in this administrative role, the committee shall recommend a plan of action to the associate dean for academic affairs including suspension, termination, reinstatement or no further action. The associate dean for academic affairs will provide the final decision on the committee's administrative action. At any point the committee may consult with the University Office of Student Affairs.

Formatted: Font: (Default) Times New Roman

Student appeals of Committee on Students' actions shall be made to the dean.

4:5:2 Committee on Students– Membership

The committee and its members shall be appointed by the dean. The committee includes the director of field education or his/her designee, the appointed chairperson of the committee and two other faculty members, one member of the Field Education Advisory Committee, two students, and alternates for faculty, field, and student members. The alternates serve when regular members are unable to attend.

The associate dean for academic affairs, or designee, should participate as an ex-officio member.

All faculty members shall have a responsibility to serve on the committee.

Faculty members shall be appointed for a maximum of a three-year term. Provision shall be made for staggering the terms of office, with no more than two rotating off in any one year. Vacancies shall be filled by the appointment of the dean.

The representative from the Field Education Advisory Committee shall be recommended to the dean by the chairperson of the Committee on Students. One student and an alternate from the first year class shall be elected by the officially recognized student government organization in January. An additional first year student is elected in May. Names of students are presented to the dean for appointment to the committee to serve until January and May of the following year.

All members, except ex-officio, are voting members. A quorum s defined as four voting members. Voting members who cannot attend a meeting are required to arrange for an alternate: faculty and student members, and the Field Education Advisory Committee representative arrange with their alternates and the director of field education with a designated field office staff member.

4:6:1 Doctoral Program Faculty

Deleted: The

The functions of the doctoral program faculty shall be to provide leadership, establish standards and initiate activities for overall planning, development and coordination of the doctoral program. Under the authority of the total faculty, it shall make decisions concerning:

a. degree requirements;
b. curriculum;
c. standards of admission; and
d. student standing and promotion.

The doctoral program faculty shall be members of the faculty as defined in Article 2, Section 1, who hold doctoral degrees, and other members teaching in the doctoral program. The doctoral program faculty shall report to the total faculty at least once a year.

4:6:2 Doctoral Program Executive Committee

Deleted: The

The Executive Committee of the doctoral program shall be composed of four members of the doctoral program faculty elected at-large, one student who shall be elected by the students enrolled in the doctoral program, the chairperson of the doctoral program, the dean, and those persons who have major responsibility for constituent areas of the doctoral curriculum. The term of office of elected members shall be two years with one half elected in the spring semester in alternate years.

The functions of the doctoral program Executive Committee shall be to act in behalf of the constituent faculty in matters related to the functions outlined in Section 4:6:1, making recommendations to the constituent faculty and decisions as directed.

4:6:3 Chairperson of the Doctoral Program Faculty

Deleted: The

The chairperson of the doctoral program faculty shall be appointed by the dean and shall be a full-time faculty member. He/she shall act as presiding officer of the doctoral program faculty and the doctoral program Executive Committee.

4:7:1 Library Committee

Deleted: The

The Library Committee shall review and make recommendations to the faculty concerning issues related to the library. The functions shall include, but not be limited to:

a. making recommendations to the faculty on the mission and overall direction of the library;

b. advising and consulting with the library director on the library's budget and long range planning; and

c. reviewing current library policies and making recommendations reflecting changing user needs.

The Library Committee shall meet at least twice during each of the fall and spring semesters and on call of the chair.

4:7:2 Library Committee – Membership

The Library Committee shall consist of four faculty members, the library director, one student representative from each of the masters and doctoral programs and one alumnus. The faculty members should represent, as far as possible, the various program and research constituencies in the school.

The faculty membership is to be appointed by the dean, the student representative by their own constituencies and the alumnus by the Alumnae Association. Terms of membership shall be overlapping two-year terms and members may be reappointed. The chair shall be selected by the dean with the library director not being eligible to chair the group.

4:8:1 Research & Training Subcommittee

The purpose of the Research & Training Subcommittee is to establish and assure a scholarly research environment within the school. Specifically, the committee shall:

- Provide leadership and initiate activities for overall planning and development of research and training grants and funding.
- Recommend to the Steering Committee policies and procedures with respect to supporting and advancing the research mission of The Mandel School.
- Assess the training and professional development needs of faculty, doctoral students and staff with respect to research and recommend programs to meet these needs.
- Prepare and deliver to the Steering Committee, at least yearly, a report on research and training programs and of The Mandel School research administration.

Deleted: MSASS

Deleted: MSASS

- Encourage and support faculty to develop research and training proposals.
- Oversee the investment funds for research and training development (i.e. funds for pilot studies and proposal preparation).
- Provide leadership and work with the Doctoral Program Executive Committee to develop research training and funding opportunities for doctoral students.
- Promote research visibility external to The Mandel School through developing a research newsletter, research content on the The Mandel School web site, research features in The Mandel School publications and research briefs. Receive reports from faculty representatives to University Research Council and Faculty Senate Research Committee, and serve as a conduit for bringing relevant University research issues to the Steering Committee.

4:8:2 Research & Training Subcommittee – Structure and Membership

Faculty (tenured, tenure track, non-tenure track, special), senior research associates, center directors and principal investigators are eligible for membership on the subcommittee. There should be a minimum of eight members of the subcommittee, including Associate Dean for Research and Training and the chair of the doctoral program. At least one member of the subcommittee should also sit on the curriculum committee for the purpose of assuring the flow of information. The dean of the school and Manager for Research & Training shall be *ex-officio* members of the subcommittee. The appointments should be staggered and for a three-year term.

4:9:1 Dean's Committee on Consultation – Function

The purpose of the Dean's Committee on Consultation is to provide consultation to any member of the academic team when a student situation presents which may not warrant immediate administrative action, but where members of the academic team believe that additional or different supporters may be needed to assure that the student has the opportunity to be successful in the program. The Dean's Committee on Consultation shall be responsible for formulating policies related to carrying out its consultative functions and for recommending such policies to the Steering Committee and faculty for action.

The committee shall make consultation decisions regarding:

a. Students who are presenting problems, either in the classroom or in the field, that are affecting their performance;
b. Students who are being placed on disciplinary warning or probation and develop a pattern of problematic performance in violation of the the Mandel School Professional Code of Conduct Policy found in the M.S.S.A. Program Instructor's Manual and MSSA Handbook;
c. Academic misconduct matters as outlined in the Case Western Reserve University Academic Integrity Standards has occurred;

Deleted: MSASS
Deleted: MSASS
Deleted: MSASS
Formatted: Indent: Left: 0.75", First line: 0"
Deleted: ¶
Deleted: Page Break
Formatted: Indent: Left: 0", First line: 0"
Deleted: MSASS

d. Other situations where a member of the academic team is concerned that the student's performance or behavior may not lead to successful completion of the program.

Following deliberations in this consultation role, the committee shall recommend a plan of action to the associate dean for academic affairs. In cases where serious academic misconduct is found, this plan may include referral to the Dean of Graduate Studies for possible action, as provided in the CWRU Academic Integrity Standards. If the alleged violation is one for which the penalty is separation from the university (defined as level 3 and level 4) in the Academic Integrity Standards for Graduate Students (Chapter 4, Article VI of the Case Western Reserve University Faculty Senate Handbook, then the dean of the Mandel School will automatically forward the case to the dean of graduate studies to be heard under the University Academic Policies and Procedures. In cases where students are having serious difficulties in meeting field requirements or when the students' behavior is in violation of the Professional Code of Conduct Policy (see the M.S.S.A. Program Instructor's Manual and the MSSA Student Handbook), the committee shall refer the student to the Committee on Students to consider administrative action.

The Dean's Committee will coordinate and continue to monitor the progress of students who are presenting problems in the classroom or in the field. At any point in the consultation process, the administrators of student services or academic affairs may consult with the University Office of Student Affairs.

4:9:2 Dean's Committee on Consultation – Membership

The Dean's Committee on Consultation is chaired by the Assistant Dean for Student Services and Director of Student Services or his/her designee. The committee includes the director of field education or his/her designee and the Associate Dean for Academic Affairs or his/her designee.

The designee for the director of field education shall be recommended to the dean by the director of field education. The student's field and academic advisor may be asked to meet with the committee. Other members of the academic team may be asked to meet with the committee as needed.

4:10.1 Information Technology Committee - Function

Formatted: Underline

Formatted: Indent: Left: 0.5"

The charge for this committee shall be to review and to make recommendations to the faculty concerning issues related to information technology at the Mandel School. The functions shall include, but not be limited to: making recommendations to the faculty on the mission and overall direction of IT; advising and consulting with the the Mandel School Director of IT on the IT budget and both short-range and long-range planning; reviewing current IT practices, priorities, and policies and making recommendations reflecting current

Deleted: MSASS

and projected user needs and act as interface with the University level IT committee and appropriate sub-committees.

4:10.2 Information Technology Committee – Structure and Membership

The Chair of this Standing Committee shall be a member of the the Mandel School faculty.Voting members of this Standing Committee shall include 3 elected representatives from the faculty, the Director of Information Technology, and one appointed representative each from master's students, doctoral students, and staff. Voting members shall serve two year overlapping terms. *Ex officio* members of the IT Standing Committee shall include the Dean of the Mandel School, Associate Dean for Research and Training, Associate Dean for Academic Affairs, Assistant Dean for Financial Administration, Chair of the Doctoral Program, Chair of the Master's Program, Director of the Harris Library, and The Mandel School Registrar.

Article 5
Constituent Programs of The Mandel School

5:1 Constituent Programs

Constituent programs are: Masters in Social Work Program, Doctoral Program, Continuing Education Program, and such other programs as shall be created.

Leaders of constituent programs shall be appointed by the dean in consultation with the Steering Committee. These persons shall be charged with responsibility for educational and administrative leadership of their programs, and will be responsible to the dean in all matters except those lying within the authority of the faculty as a whole, or where authority is shared with another program of the university.

Each constituent program shall be organized internally as specified in the bylaws or in consultation with the Steering Committee.

Article 6
Dean of The Mandel School

6:1 Appointment of Dean and Term of Office

The dean of The Mandel School shall be appointed for a specified term by the president after consultation with members of the faculty and the Steering Committee.

Formatted: Underline
Formatted: Indent: Left: 0.5"
Deleted: MSASS
Deleted: ¶
Deleted:
Deleted: MSASS
Deleted: ¶
Deleted: MSASS
Formatted: Indent: First line: 0"
Deleted: MSASS
Deleted: MSASS
Deleted: Executive Committee of the Senate

6:2 Functions of the Dean

The dean of the Mandel School shall be the chief executive officer of the school and chairperson of the faculty, charged with broad responsibility of representing its interest in the academic and administrative management of the university as a whole and shall perform such other duties as are specified elsewhere in these bylaws.

6:3 Other Administrative Officers

Appointments to or creation of any positions of associate dean, or other administrative offices shall be made by the dean in consultation with the Steering Committee.

Article 7
Representation in University Governance

7:1 University Representatives

The faculty of the Mandel School shall be represented in university governance by its dean, associate deans, and separate faculty members, as they shall from time to time be selected to serve on various university bodies.

The faculty of the Mandel School shall provide representatives to the Faculty Senate, and other university bodies in accordance with the bylaws of those bodies.

Article 8
Amendment of the bylaws

8:1 Amendment Procedures

These bylaws may be amended at any meeting of the faculty by a vote of 60 percent of the members present, provided however, that the quorum of such a meeting shall be 60 percent of the voting faculty, and provided that the dean shall have distributed to each voting member of the faculty a written copy of the proposed amendment at least 14 days before the meeting

Following initial amendment, the bylaws shall be submitted to the appropriate committee of the Faculty Senate for review. Changes suggested by that committee shall be presented to the Steering Committee for its approval and then forwarded to faculty for final review and approval using the procedure discussed above. Approved bylaws are then submitted to the Faculty Senate for ratification.

Article 9
Ratification of the bylaws

Deleted: Page Break ¶

Deleted: MSASS

Deleted: MSASS

Formatted: Indent: First line: 0"

Deleted: MSASS

Deleted: ¶ ¶ ¶

Formatted: Indent: First line: 0"

Deleted: ¶ Page Break

9:1 Procedures

These bylaws shall become effective when approved by the faculty and ratified by the Faculty Senate.

9:2 Current Bylaws

A copy of the current bylaws shall be provided to the faculty by the dean.

Approved by the Mandel School faculty
November 20, 1989
Revised December 22, 1992
Revised April 25, 1994
Revised February 20, 1995
Revised December 16, 2002
Revised February 18, 2003
Revised August 23, 2004
Revised September 20, 2004
Revised March 27, 2006
Revised January 14, 2008
Revised February 11, 2008
Revised October 20, 2008
Revised February 16, 2012
Revised April 16, 2012
Revised October 25, 2012
Revised January 28, 2013
Revised September 25, 2017

Ratified by Faculty Senate
January 28, 2003
October 27, 2004
April 27, 2006
September 24, 2008
October 25, 2012
March 20, 2013

Formatted: Indent: First line: 0"

Formatted: Indent: First line: 0.5"

Deleted: ¶
¶

Formatted Table

Deleted: MSASS

Deleted: Mandel School of Applied Social Sciences¶
Case Western Reserve University¶
¶
BYLAWS ATTACHMENT A¶
STANDARDS FOR APPOINTMENT, REAPPOINTMENT, PROMOTION AND TENURE¶
FOR TENURED, TENURE TRACK, NON-TENURE TRACK AND SPECIAL FACULTY¶
¶
(Numbers in parentheses refer to criteria area. Criteria 1 applies to all faculty.)¶
¶
MSASS criteria for consideration of promotion and tenure are organized into four areas drawn from the CWRU Faculty Handbook. These are as follows:¶
¶
<#>Expert knowledge of their academic field and a commitment to continuing development of this competence¶
<#>Effectiveness in facilitating learning¶
<#>Implementation of a continuing program of research and scholarship¶
<#>Assuming a fair share of school/university service and administrative tasks, including contributing to community and professional service¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
Tenured & Tenure Track¶
(Criteria 1- 4 apply for tenured and ¶
tenure track)

APPENDIX A

JACK, JOSEPH AND MORTON MANDEL SCHOOL OF APPLIED SOCIAL SCIENCES

CASE WESTERN RESERVE UNIVERSITY

STANDARDS FOR APPOINTMENT, REAPPOINTMENT, PROMOTION AND TENURE FOR TENURED, TENURE TRACK, NON-TENURE TRACK AND SPECIAL FACULTY

Revised by the Mandel School Faculty – 5/11/2015
Ratified by the Faculty Senate – 1/22/2016

I. Faculty Titles and Definitions

Members of the faculty shall be all persons holding full-time tenured or tenure track, non-tenure track and full- or part-time special faculty appointments. The Mandel School faculty titles and ranks are described in the MSASS by laws (1:2:1) and are summarized in Table 1. Table 1 is consistent with provisions of the CWRU Faculty Handbook (Summer 2003) and Mandel School by laws (approved 1/26/2004, revised 9-25-17).

- Per faculty resolution of May 11, 2015, the ratio of tenured/tenure track faculty to non-tenure track faculty must meet or exceed 60:40 at all times (i.e., 60% must be tenured/tenure track).

- Voting faculty is defined as the tenured/tenure track and the non-tenure track. These two groups of faculty have voting privileges as stated in the CWRU Faculty Handbook. Special faculty members have no vote on matters coming before the Mandel School faculty, unless specifically asked to vote on a particular issue by the voting faculty.

II. Qualifications and Standards

The Mandel School criteria for consideration of promotion and tenure are organized into four areas drawn from the CWRU Faculty Handbook. These are as follows:

1. Expert knowledge of their academic field and a commitment to continuing development of this competence

2. Effectiveness in facilitating learning

3. Implementation of a continuing program of research and scholarship

4. Assuming a fair share of school/university service and administrative tasks, including contributing to community and professional service

Deleted: MANDEL SCHOOL OF APPLIED SOCIAL SCIENCES¶ CASE WESTERN RESERVE UNIVERSITY¶

Deleted: Revised by MSASS Faculty – 5/11/2015¶ Ratified by the Faculty Senate – 1/22/2016¶ ¶

Deleted: .

Deleted: MSASS

Deleted: 1 is consistent with provisions of the CWRU Faculty Handbook (Summer 2003) and MSASS by laws (approved 1/26/2004).

Deleted: MSASS

Deleted: MSASS

These criteria are applicable to each faculty member, but the emphasis and the types of evidence required to support achievement of each criterion depends on the nature and type of the initial faculty appointment (tenure track, non-tenure track, special). In accordance with the Faculty Handbook (Chapter 3, Part One, I, A.3), at the time of the initial appointment, the faculty member shall be provided with a general written description of 1) the criteria by which his/her performance will be judged, and 2) the teaching, research and scholarship, and service required to maintain faculty status and for renewal of appointment, promotion, and/or tenure, as applicable.

III. Promotion and Tenure

Table 2 illustrates the criteria, evidence, and sources as applied for appointment, reappointment, promotion, and consideration for tenure. The criteria, general evidence, and sources of evidence listed have sufficient detail to be applicable to all faculty. Table 2 also demonstrates how quality and excellence are maintained, while providing opportunities for advancement and career development for all types of faculty.

Formatted: Indent: First line: 0"

1. The first criterion, "expert knowledge of academic field and a commitment to continuing development of this competence," applies to all MSASS faculty: tenure track, non-tenure track, and special.

2. Tenure track faculty should provide evidence that they can and will continue to satisfy all of the other three criteria (#s 2, 3, and 4).

3. Non-tenure track faculty should provide evidence that they can and will continue to satisfy at least two of the remaining three criteria (#s 2, 3, and/or 4), depending on their initial appointment.

4. Special faculty should provide evidence that they can and will continue to satisfy at least one of the other three criteria (#s 2, 3, and 4), depending on their initial appointment.

5. The criteria for promotion to associate professor are the same for all faculty types (tenure track, non-tenure track, and special), except that time limits do not apply to non-tenure and special tracks, and the focus of the initial appointment (teaching, research and/or service) may be different. MSASS provides an appropriate allocation of resources and time (taking into account rank and type of appointment) for scholarly growth, academic achievement and professional development.

6. Faculty hired in the tenure track must remain in the tenure track. Faculty in the non-tenure track can apply for an open tenure track position, but if they move into a tenure track position, they cannot move back to a non-tenure track status. The provost's office must approve a transfer into the tenure track. MSASS policy of 2/2000 and approved by the CWRU Faculty Senate states: "Although a one time, one way movement from a non-tenure track to a tenure track

position is possible, it is not allowable (a) to move back and forth between tenure track and non tenure track positions…… Someone appointed to a non-tenure track position may later be appointed to a tenure track position but then cannot move back to a non-tenure track position. Likewise, someone appointed to a tenure track position cannot move to a non-tenure track position and back to the tenure track".

7. The Mandel School by-laws (Section 4:3:2) state: "Mandel School faculty members who have been denied tenure by the university may be given renewable term appointments not leading to tenure consideration contingent upon full financial support from non-university resources. Such faculty members would be in the special faculty category."

8. Faculty in the tenure track who have served six (6) years in the school without being granted tenure should be offered a terminal appointment (except as indicated in point 7 above).

9. Tenure should be granted only at the levels of associate and full professor.

Table 3 summarizes procedures for faculty review of tenured, tenure track, non-tenure track and special faculty who seek a promotion in rank and/or tenure. The chart also shows ways in which a faculty member may receive guidance and feedback on job performance, including annual reviews, formation of advisory committees (Faculty Development Committees), and in the case of tenure track faculty in the pre-tenure period, 3rd year reviews.

1. All faculty members, with the exception of part-time faculty, receive an annual review, as required by the CWRU Faculty Handbook.

2. A Faculty Development Committee offers career guidance to each tenure track faculty member during the pre-tenure period. The option of forming an advisory committee for the purpose of career guidance and development shall be available to tenured faculty seeking promotion, non-tenure track faculty, and special research, adjunct, and clinical faculty as well.

3. On recommendations involving promotion, only faculty of rank equal or superior to that being considered shall be eligible to vote. On recommendations involving tenure, only faculty with tenure shall vote.

4. Promotion considerations to the rank of assistant level and higher require external evaluations.

5. Procedures for initial appointments and renewals of secondary appointments are summarized, following the policy statement on secondary appointments approved by the Mandel School faculty April 14, 2003 and listed later in this document.

Deleted: MSASS

Deleted: MSASS

Deleted: ¶

Formatted: Numbered + Level: 1 + Numbering Style: 1, 2, 3, … + Start at: 1 + Alignment: Left + Aligned at: 0.38" + Tab after: 0.63" + Indent at: 0.63"

Deleted: MSASS

IV. Procedures for Review for Promotion and/or Tenure Considerations

A. Review Committees

All candidates for promotion and/or tenure will be reviewed by all faculty who are eligible to vote at the rank being considered. On recommendations involving promotion of tenured or tenure track faculty, only tenured and/or tenure track faculty of rank equal or superior to the rank being considered shall be eligible to vote. On recommendations involving promotion of non-tenure track and special faculty, all voting faculty (tenured, tenure track, and non-tenure track) of rank equal or superior to the rank being considered shall be eligible to vote. On recommendations involving tenure of tenure-track faculty, only faculty with tenure shall vote. These faculty shall consider all promotions and awards of tenure to insure the application of equitable standards for assessing credentials and to insure compliance with the personnel policy guidelines established by the Faculty Senate. These faculty shall review candidates in accordance with the criteria for promotion and tenure and the procedures for promotion and tenure review established by the Mandel School and the guidelines established by the Faculty Senate.

Deleted: MSASS Faculty

The faculty committee shall be chaired by the dean and shall make formal recommendations to the dean and the university administration. The dean's position should not be included in the vote of the faculty, but should be transmitted to the university in a separate report accompanying the formal recommendations submitted by the committees.

B. Review of Tenure Track, Pre-Tenure Faculty

There shall be a yearly review by the dean of all tenure track faculty during the pre-tenure period which will be reported to the university. At the end of the first three years of the faculty appointment, there shall be a review conducted by the tenured faculty, which will assess the progress of the faculty member toward meeting the criteria for tenure and indicate areas of strength and concern. This report will be given to the candidate. The review report will be sent to the provost's office.

The intent of the yearly reviews and the three-year review is to keep the faculty member informed as to his/her progress in meeting the criteria for tenure, offer suggestions related to areas of concern, and provide the faculty member an early evaluation so as to enable the faculty member to consider options prior to the end of six-year pre-tenure period.

C. Preliminary Procedures

1. At the time of the appointment, incoming faculty will receive a copy of the procedures and criteria for promotion and tenure.

2. A formal consideration for promotion and/or tenure will ordinarily occur at the time of the faculty member's automatic review date but, if circumstances warrant, may be initiated earlier. Consideration may be initiated at the request of either the faculty member or the dean. Faculty members whose automatic review dates for promotion or tenure occur within a particular year shall be notified by the dean. If

warranted by special circumstances, individual extensions of the pre-tenure period may be made as described in the university's Faculty Handbook, subject to the provost's approval.

3. The list of candidates will be made known by the dean to all faculty by September 1 of each year in which there will be candidates. Colleagues may submit material regarding the performance of any person on the list to the dean by October 1. Submitted information will be included in the candidates' promotion and tenure materials in accordance with guidelines provided by the provost's office.

4. At no time shall an individual be considered for review without his/her knowledge.

5. Candidates may consult with members of review committees for guidance and advice regarding preparation of material prior to a scheduled review.

6. Candidates will receive both the Mandel School criteria for promotion and tenure and the guidelines provided by the provost's office.

Deleted: MSASS

Deleted: ¶

D. Material to be Reviewed

1. Candidates shall submit the following materials to the Dean:

   a. A current and complete *vitae*;

   b. written statements of self-evaluation covering the criteria for promotion and tenure;

   c. a selection of publication reprints or manuscript copies that the candidate considers representative of his/her strengths and contributions plus any reviews or commentaries on the work;

   d. a list of persons from whom the dean can request references. These should be persons who can comment knowledgably about the capabilities and contributions of the candidate. Table 3 indicates the numbers of external letters required of promotion and/or tenure candidates; and

   e. other material that the candidate believes will serve as evidence.

2. The dean's office shall submit the following material to the faculty eligible to review the candidate's promotion and/or tenure request:

   a. The material submitted by the candidate;

   b. if applicable, letters submitted by colleagues (internal and/or external to the school) solicited by the dean in consultation with the candidate and other colleagues;

c. evaluations requested from outside referees. The dean is responsible for the solicitation of letters or reference from outside referees. He/she assumes final responsibility for the content of the letters and for determining the referees that shall be solicited. Names of persons submitted by the candidate will be used selectively and will be supplemented by names submitted by members of the Faculty Committees for Promotion and Tenure;

d. the most recent three years of student ratings and written evaluations of the candidate's classroom and/or field teaching;

e. the responses from a random sample of current and former students who have taken courses from the candidate;

f. written review of the dean.

g. written third year review of the Faculty Committees for Promotion and Tenure.

The candidate may review submitted material with the exception of confidential evaluations from outside referees, colleague letters, and letters from students solicited by the school. He/She may provide a written rebuttal but cannot remove any material with which he/she disagrees.

Formatted: Indent: Left: 0.5"

Deleted: ¶

V. Procedures for Secondary Appointments

A. Definition

Formatted: Underline

Formatted: Numbered + Level: 1 + Numbering Style: A, B, C, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 0.5"

Formatted: Indent: Left: 0.5"

The CWRU Faculty Handbook (Summer 2003) states that in cases where an appointment applies to more than one constituent faculty or department, or to an administrative office as well as academic unit, one constituent faculty or department shall be identified as that of the primary appointment, and the other as secondary. Secondary faculty appointments are designed for persons who hold primary appointments in other schools/departments within the university. Such appointments will range in title from instructor through professor. Secondary appointments are important for establishing working relationships with other schools or departments and conducting interdisciplinary studies.

B. Terms and Procedures for Appointment

Formatted: Numbered + Level: 1 + Numbering Style: A, B, C, … + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Indent at: 0.5"

Formatted: Underline

1. No faculty member shall hold a secondary appointment at a rank higher than the rank held in his/her primary department or school.

2. Secondary appointments are made as special faculty appointments as described in Tables 1 and 3.

3. Persons holding secondary appointments will receive no individual financial compensation or office space as a function of the secondary appointment.

4. Those holding secondary appointments in MSASS only will not be voting members of the MSASS faculty.

5. Faculty members may nominate individual faculty members for a secondary appointment in writing for the dean's consideration. The dean may bring recommendations for initial secondary appointments to the faculty for their consideration. Faculty of the same or higher rank will review the candidate's credentials (which would ordinarily include a CV, statement of rationale for secondary appointment, and a copy of one recent published paper) and submit their recommendation to the dean. Initial appointments will be for one academic year. Re-appointments (renewals) may be made by the dean.

6. As expressed in the CWRU Faculty Handbook, the primary department or school continues to be responsible for the initiation of consideration of reappointment, promotion, tenure or termination.

Formatted: Centered

Table 1
Categories and Titles of MSASS Faculty

Formatted: Font: 12 pt, Bold

Deleted: :

Formatted: Font: 12 pt, Bold

Type	Modifier	Ranks	Appointment	Vote	Comments
TENURE TRACK/ TENURED	None	Assistant Professor Associate Professor Professor	Full time, Finite Full time, Indefinite	CWRU-yes MSASS-yes	No changes in procedure from our current policy. Criteria and standards for promotion have been developed for each rank.
NON-TENURE TRACK	None	Instructor Sr. Instructor Assistant Professor Associate Professor Professor	Full time, Finite	CWRU-yes MSASS-yes	Establishes a non-tenure career track.
SPECIAL	Visiting	Instructor Sr. Instructor Assistant Professor Associate Professor Professor	Full or part time—short term/ limited	CWRU-no MSASS-no, unless asked to vote	Appointment is at same rank as previous institution. If not from academia, title is Visiting Faculty; the modifier Distinguished Visiting may be used in special circumstances.
	Research	Assistant Professor Associate Professor Professor	Full or part time—Finite, dependent on research funding	CWRU-no MSASS-no, unless asked to vote	These individuals are established researchers who direct funded research and provide experiences for students.
	Adjunct	Instructor Sr. Instructor	Part time or full time with limited duties--Finite	CWRU-no MSASS-no, unless asked to vote	Perform limited educational duties such as teaching specified courses, seminars, or advising (field, academic, ABLE), etc. Typically primary appointment is elsewhere.
	Field Education	Instructor	Agency based	CWRU-no MSASS-no, unless asked to vote	Educate students in field placements. Employed by agencies, not CWRU.
	Lecturer	N/A	Full or part time	CWRU-no MSASS-no	Carries a teaching load for a prescribed period of time – total appointment may not exceed three years.

Type	Modifier	Ranks	Appointment	Vote	Comments
	Named Professor, according to the terms of the professorship		Full time-finite	CWRU-no MSASS-no, unless asked to vote	Perform specified limited duties of named chair
	Clinical	Instructor, Sr. Instructor, Assistant Professor, Associate Professor, Professor	Full or part time-finite	CWRU-no MSASS-no, unless asked to vote	Established practitioners or administrators who direct projects and provide educational experiences for students.
SECONDARY	None	Instructor Sr. Instructor Assistant Professor Associate Professor Professor	Secondary, finite	CWRU-depends on primary apt. MSASS-no	Rank is not to exceed rank in primary department.

Table 2
Criteria, Evidence, and Sources as Applied for Appointment, Reappointment, Promotion, and Consideration for Tenure

(Numbers in parentheses refer to criteria area. Criteria 1 and 4 apply to all faculty.)

The Mandel School criteria for consideration of promotion and tenure are organized into four areas drawn from the CWRU Faculty Handbook, and one additional area pertinent to the social work profession. These are as follows:

1. Expert knowledge of their academic field and a commitment to continuing development of this competence
2. Effectiveness in facilitating learning
3. Implementation of a continuing program of research and scholarship
4. Assuming a fair share of school/university service and administrative tasks, including contributing to community and professional service

Tenured & Tenure Track (Criteria 1-4 apply for tenured and tenure track)	Non-Tenure Track & Special (where rank is applicable) (Criteria 1 applies to all. At least two of criteria 2, 3 & 4 apply to non-tenure track; at least one of criteria 2, 3 & 4 applies to special)
INSTRUCTOR **This rank not applicable**	**INSTRUCTOR** • **Master's degree in social work or related field. (1)** • **Evidence of professional expertise and excellence in an area of social welfare. (3)** • **Evidence of pedagogical abilities relevant to social work education. (2)** • **Willingness to participate in school service and administrative tasks. (4)** • **Community social welfare service orientation as evidenced by participation in local activities. (4)**
SR. INSTRUCTOR **This rank not applicable**	**SR. INSTRUCTOR** • **Master's degree in social work or related field. (1)** • **Recognition of area of expertise by local/community professionals as evidenced by honors, publications, and/or**

Formatted: Not Highlight

Deleted: Mandel School of Applied Social Sciences¶
Case Western Reserve University¶
TABLE 2¶
STANDARDS FOR APPOINTMENT, REAPPOINTMENT, PROMOTION AND TENURE¶
FOR TENURED, TENURE TRACK, NON-TENURE TRACK AND SPECIAL FACULTY¶
¶
(Numbers in parentheses refer to criteria area. Criteria 1 and 4 apply to all faculty.)¶
¶
MSASS criteria for consideration of promotion and tenure are organized into four areas drawn from the CWRU Faculty Handbook, and one additional area pertinent to the social work profession. These are as follows:¶
¶
<#>Expert knowledge of their academic field and a commitment to continuing development of this competence¶
<#>Effectiveness in facilitating learning¶
<#>Implementation of a continuing program of research and scholarship¶
<#>Assuming a fair share of school/university service and administrative tasks, including contributing to community and professional service¶

Tenured & Tenure Track (Criteria 1-4 apply for tenured and tenure track)	Non-Tenure Track & Special (where rank is applicable) (Criteria 1 applies to all. At least two of criteria 2, 3 & 4 apply to non-tenure track; at least one of criteria 2, 3 & 4 applies to special)
	presentations. (1) • **Competence in pedagogical abilities relevant to social work education as evidenced by courses developed, new courses taken on, range of courses taught, teaching evaluations, etc. (2)** • **Contributions to development of social work education as evidenced by ABLE participation, continuing education, guest lectures for other courses, etc. (2)** • **Evidence of teaching competence over time as measured by attainment of performance goals set for teaching. (2)** • **Scholarly productivity as evidenced by local, state, and/or national presentations. (3)** • **Participation within the school in administrative and membership roles in committees, programs, and school initiatives. (4)** **Participation in professional/community organizations and undertakings. (4)**
ASSISTANT PROFESSOR • **Earned doctorate.** • **Developing knowledge in one or more areas of knowledge, practice, research and/or education. (1)** • **Capacity for scholarly productivity as evidenced by research, demonstration or practice projects, professional presentations, teaching materials or other media, monographs, reports, papers, articles, book chapters or books. (3)** • **Service commitment as evidenced by school/ professional community membership, state and local activities. (4)** • **Excellence in teaching as evidenced by teaching evaluations, courses taught, etc. (2)** • **A research area of expertise is evident.** • **Ability to attract funding for research. (3)**	**ASSISTANT PROFESSOR** • **Earned doctorate.** • **Developing knowledge in one or more areas of knowledge, practice, research and/or education. (1)** • **Capacity for scholarly productivity as evidenced by research, demonstration or practice projects, professional presentations, teaching materials or other media, monographs, reports, papers, articles, book chapters or books. (3)** • **Service commitment as evidenced by school/ professional community membership, state and local activities. (4)** • **Participation within the school and university by assuming administrative and other roles in key committees, programs, and initiatives. (4)** • **Excellence in teaching and/or practice. (2)** • **Development of area of teaching focus. (2)**

Tenured & Tenure Track (Criteria 1-4 apply for tenured and tenure track)	Non-Tenure Track & Special (where rank is applicable) (Criteria 1 applies to all. At least two of criteria 2, 3 & 4 apply to non-tenure track; at least one of criteria 2, 3 & 4 applies to special)
ASSOCIATE PROFESSOR **Achieving this rank requires continued fulfillment of all criteria at the assistant professor level, with the addition of the following:** • **Achieved recognition as a scholar or expert in one or more areas of knowledge, practice, research, and education as evidenced by evaluation of external authorities and colleagues in the area of research practice or knowledge. (1)** • **Clear and explicit formulations of theoretical and value content bearing on a component of social work knowledge or practice as evidenced by research, demonstration or practice projects, professional presentations, teaching materials or other media, monographs, reports, papers, articles, book chapters or books, activities in workshops, continuing education, institutes, seminars, visiting professorships, advisory panels, etc. (1)** • **Mastery of pedagogical abilities relevant to social work education including development of teaching content and objectives in a clear and consistent fashion, coherent organization of content and effective presentation of classroom or field instruction content, responsiveness to learning needs and styles of students, and provision of opportunities for students' integration of knowledge, practice and values as evidenced by written self-evaluation (including such issues as philosophy/principles of education, assessment of teaching role and competence, aims and objectives, relationship with students, particular skills or mastery of content), assessment of teaching role and competence, aims and objectives, relationship with students, responses from a random sample of**	**ASSOCIATE PROFESSOR** **(Note: the relevant criteria apply to non-tenure track & special faculty titles with this rank).** **Achieving this rank requires continued fulfillment of all criteria at the assistant professor level, with the addition of the following:** • **Achieved recognition as a scholar or expert in one or more areas of knowledge, practice, research, and education as evidenced by evaluation of external authorities and colleagues in the area of research practice or knowledge. (1)** • **Clear and explicit formulations of theoretical and value content bearing on a component of social work knowledge or practice as evidenced by research, demonstration or practice projects, professional presentations, teaching materials or other media, monographs, reports, papers, articles, book chapters or books, activities in workshops, continuing education, institutes, seminars, visiting professorships, advisory panels, etc. (1)** • **Mastery of pedagogical abilities relevant to social work education including development of teaching content and objectives in a clear and consistent fashion, coherent organization of content and effective presentation of classroom or field instruction content, responsiveness to learning needs and styles of students, and provision of opportunities for students' integration of knowledge, practice and values as evidenced by written self-evaluation (including such issues as philosophy/principles of education, assessment of teaching role and competence, aims and objectives, relationship with students, particular skills**

Deleted: student evaluation ratings and all written comments

Tenured & Tenure Track (Criteria 1-4 apply for tenured and tenure track)	Non-Tenure Track & Special (where rank is applicable) (Criteria 1 applies to all. At least two of criteria 2, 3 & 4 apply to non-tenure track; at least one of criteria 2, 3 & 4 applies to special)
current and former students who have taken courses from the candidate whose responses have been solicited by the dean, evaluations by colleagues such as specialization and/or concentration chairperson, team teachers, and others cognizant of the candidate's performance. (2) • Contributions to education with regard to social work education field, in general, curriculum development, development of innovative approaches, extensions of teaching skill/knowledge to continuing education, workshops, seminars, lectures, etc. as evidenced by self-report of such activities, published articles, reports, monographs, course syllabi, and evaluations by colleagues and consumers, etc (2) • Participation in community welfare activities as evidenced by serving on boards and committees, giving speeches and workshops, providing consultation, serving on advisory panels. (4) • Assuming leadership roles in professional organizations and undertakings as evidenced by holding leadership positions in organizations and networks concerned with social welfare and social work. (4) • Scholarly work represents a significant contribution to the field of social work and social welfare as evidenced by sole, first and collaborative team authored articles published in refereed journals, books and book chapters, monographs, reports and papers, juried and invited presentations at professional meetings, and external support for research and scholarship, evaluation of research and scholarships by external referees. (3), • Scholarly work demonstrates excellence, an ability to conduct independent scholarship, and a sustained focus that is likely to continue as evidenced by research	or mastery of content), student evaluation ratings and all written comments, responses from a random sample of current and former students who have taken courses from the candidate whose responses have been solicited by the dean, evaluations by colleagues such as specialization and/or concentration chairperson, team teachers, and others cognizant of the candidate's performance. (2) • Contributions to education with regard to social work education field, in general, curriculum development, development of innovative approaches, extensions of teaching skill/knowledge to continuing education, workshops, seminars, lectures, etc. as evidenced by self-report of such activities, published articles, reports, monographs, course syllabi, and evaluations by colleagues and consumers, etc (2) • Participation in community welfare activities as evidenced by serving on boards and committees, giving speeches and workshops, providing consultation, serving on advisory panels. (4) • Assuming leadership roles in professional organizations and undertakings as evidenced by holding leadership positions in organizations and networks concerned with social welfare and social work. (4) • Scholarly work represents a significant contribution to the field of social work and social welfare as evidenced by sole, first and collaborative team authored articles published in refereed journals, books and book chapters, monographs, reports and papers, juried and invited presentations at professional meetings, external support for research and scholarship, evaluation of research and scholarships by external referees. (3) • Scholarly work demonstrates excellence,

Deleted: professional meetings, external support for research and scholarship, evaluation of research and scholarships by external referees. (3)

Tenured & Tenure Track (Criteria 1-4 apply for tenured and tenure track)	Non-Tenure Track & Special (where rank is applicable) (Criteria 1 applies to all. At least two of criteria 2, 3 & 4 apply to non-tenure track; at least one of criteria 2, 3 & 4 applies to special)
and scholarly activities currently underway. (3) • Participation in school service and administrative roles as evidenced by committee membership, leadership activities, proposals developed, administrative accomplishments and related documents. (4) • Participation in university service and administrative tasks as evidenced by committee service, leadership activities and administrative tasks. (4)	an ability to conduct independent scholarship, and a sustained focus that is likely to continue as evidenced by research and scholarly activities currently underway. (3) • Participation in school service and administrative roles as evidenced by committee membership, leadership activities, proposals developed, administrative accomplishments and related documents. (4) • Participation in university service and administrative tasks as evidenced by committee service, leadership activities and administrative tasks. (4)
PROFESSOR Relevant criteria apply to all faculty titles with this rank. Achieving this rank requires continued fulfillment of all criteria at the Associate Professor level, with the addition of the following: • Highly significant and sustained knowledge development and contributions in a specified area or areas bearing on a component of social welfare knowledge, practice, research and/or education as evidenced by evaluation of external authorities and colleagues. Quality and quantity of publications with an emphasis on sole, first and collaborative team authored articles published in top tier refereed journals will have the most weight. Collaborations with students are considered to be clear indications of the faculty member's work. (1) • National and/or international recognition as a scholar. (1) • Significant contributions to social work education as education with regard to	**PROFESSOR** Relevant criteria apply to all faculty titles with this rank. Achieving this rank requires continued fulfillment of all criteria at the Associate Professor level, with the addition of the following: • Highly significant and sustained knowledge development and contributions in a specified area or areas bearing on a component of social welfare knowledge, practice, research and/or education as evidenced by evaluation of external authorities and colleagues. Quality and quantity of publications with an emphasis on sole, first and collaborative team authored articles published in refereed in top tier refereed journals will have the most weight. Collaborations with students are considered to be clear indications of the faculty member's work. (1) • National and/or international recognition as a scholar. (1) • Significant contributions to social work education as as evidenced by curriculum

Deleted: sole and first authorship

Deleted: sole and first authorship

Deleted: Significant contributions to

Deleted: Significant contributions to education with regard to social work education

Tenured & Tenure Track (Criteria 1-4 apply for tenured and tenure track)	Non-Tenure Track & Special (where rank is applicable) (Criteria 1 applies to all. At least two of criteria 2, 3 & 4 apply to non-tenure track; at least one of criteria 2, 3 & 4 applies to special)
social work education as evidenced by curriculum development, development of innovative approaches, extension of teaching skills/knowledge, dissertations chaired, national recognition as a teacher, national and or international influence with respect to social work education and profession. (2) • **Sustained and significant substantive scholarly contributions recognized nationally and/or internationally as evidenced by publications in refereed journals, consultations, honors, elections to scientific bodies, principal investigator of funded grants, authorship of a textbook. (3)** • **Excellence demonstrated by outstanding achievement and evidence that this level of excellence will be sustained. (1)** • **Influence on policy or practice at a national/ international level in one or more areas of knowledge, practice, research, or education. (4)** • **Major role and recognized leadership in key school, university, and professional committees/initiatives, as evidenced by assuming the role of chair, elected positions with the university, preparation of concept or position papers, administrative leadership activities and accomplishments. (4)** • **Evidence of influence on professional organizations, research, policy, or practice at the national and/or international level as evidenced by serving on national boards, being a consultant to government or scientific bodies, holding office in professional/scientific organizations, memberships on editorial boards or editorships. (4)** • **Assuming leadership roles in national and/or international professional organizations and undertakings. (4)**	**development, development of innovative approaches, extension of teaching skills/knowledge, dissertations chaired, national recognition as a teacher, national and or international influence with respect to social work education and profession. (2)** • **Sustained and significant substantive scholarly contributions recognized nationally and/or internationally as evidenced by publications in refereed journals, consultations, honors, elections to scientific bodies, principal investigator of funded grants, authorship of a textbook. (3)** • **Excellence demonstrated by outstanding achievement and evidence that this level of excellence will be sustained. (1)** • **Influence on policy or practice at a national/ international level in one or more areas of knowledge, practice, research, or education. (4)** • **Major role and recognized leadership in key school, university, and professional committees/initiatives, as evidenced by assuming the role of chair, elected positions with the university, preparation of concept or position papers, administrative leadership activities and accomplishments. (4)** • **Evidence of influence on professional organizations, research, policy, or practice at the national and/or international level as evidenced by serving on national boards, being a consultant to government or scientific bodies, holding office in professional/scientific organizations, memberships on editorial boards or editorships. (4)** • **Assuming leadership roles in national and/or international professional organizations and undertakings. (4)**

Table 3
Procedures for Faculty Review and Promotion/Tenure Considerations[1]

✓ = applies

Faculty Category	Advisory Committee	Annual Review by Dean	3 Year Review	Submit Documents for Promotion	Which Faculty Review[2]	External Evaluation Required[3]	Provost Approval[4]
Pre-tenure Period for tenure track faculty	Required	Includes review by Committee as well	✓	✓	Vote for promotion by faculty (tenured, and tenure track) at rank equal to or superior to that being considered. Vote for tenure by tenured faculty only.	✓ 3 letters for assistant professor 8letters for associate professor 10 letters for full professor	✓
Tenured	Optional at associate level	✓	NA	✓	Vote for promotion by faculty (tenured and tenure track) of rank equal to or superior to that being considered	✓ 3 letters for assistant professor 8 letters for associate professor 10 letters for full professor	✓
Non-Tenure track	Optional	✓	NA	✓	Vote by faculty (tenured, tenure track & non-tenure track) of rank equal to or superior to that being considered	✓ 2 letters required for promotion to senior instructor (need not be external) 3 letters for assistant professor 8 letters for associate professor 10 letters for full professor	✓
Special: Visiting	NA	NA	NA	NA	NA	NA	NA
Special: Research	Optional	✓	NA	✓	Vote by tenured, tenure track, and non-tenure track faculty of rank equal to or superior to that being considered	✓ 3 letters for assistant professor 8 letters for associate professor 10 letters for full professor	**NA**
Special: Adjunct	Optional	Associate Dean	NA	√	Vote by tenured, tenure track, and non-	NA	NA

Faculty Category	Advisory Committee	Annual Review by Dean	3 Year Review	Submit Documents for Promotion	Which Faculty Review[2]	External Evaluation Required[3]	Provost Approval[4]
		Field Director for adjunct instructors who serve as field advisors			tenure track faculty of rank equal to or superior to that being considered		
Special: Field Education Instructors	NA	Field Office	NA	NA	NA Review of field education instructors is carried out via annual student evaluations and field advisor's agency assessments	NA	NA
Named Professors	NA	✓	NA	NA	NA	NA	✓
Clinical Special Faculty	Optional	✓	NA	✓	✓ Vote by tenured, tenure track and non-tenure track faculty of rank equal or superior to that being considered	✓ 2 letters required for promotion to senior instructor (need not be external) 3 letters for assistant professor 8 letters for associate professor 10 letters for full professor	NA
Secondary	NA	✓	NA	For initial appointments only	Vote by tenured, tenure track, and non-tenure track faculty of rank equal to or superior to that being considered for the initial appointment. Decisions of promotion and tenure rest with primary appointment.[5]	Letter of approval required from chair or dean where candidate holds primary appointment	For initial appointment and renewals

1. This chart applies to promotions from one rank to the next higher rank, not necessarily initial appointments, except in the case of secondary appointments.

2. This column indicates which faculty vote on promotion for each category of faculty listed in the rows. MSASS bylaws state that promotion decisions are made by the faculty eligible to vote for the rank being considered. Tenure decisions are made by faculty with tenure.
3. These refer to evaluations by external authorities for the purpose of promotion/tenure considerations. Two letters **are** required for initial appointments of instructors and senior instructors, but these need not be external. To be hired at or promoted to the rank of assistant professor a national search is required, unless a waiver has been granted.
4. CWRU Faculty Handbook (Chapter 3, Part One, I) states that, with the exception of special faculty, all appointments, promotions, and tenure, and tenure transfer recommendations require approval by the Board of Trustees.
5. Faculty with secondary appointments may request consideration of promotion in the secondary department after a promotion has been granted in their primary department.

Approved by MSASS faculty
Revised September 20, 2004
Revised May 11, 2015
Revised September 25, 2017

Ratified by Faculty Senate
October 27, 2004
Approved in Principle by the Faculty Senate – 04/26/06
Approved in Principle by the Faculty Senate – 09/24/08
January 22, 2016

Pamela B. Davis, MD, PhD
Dean
Senior Vice President for Medical Affairs
Office of the Dean

10900 Euclid Avenue
Cleveland, Ohio 44106-4915

Visitors and Deliveries
Biomedical Research Bldg., Room 113

phone 216.368.2825
fax 216.368.2820

casemed.case.edu

November 30, 2017

Juscelino Colares
Chair, Faculty Senate
c/o Rebecca Weiss
Secretary of the University Faculty
Adelbert Hall

Dear Professor Colares:

As noted in the accompanying memo from Dr. Phoebe Stewart, Chair of the School of Medicine's Faculty Council, the Faculty of Medicine voted earlier this month to recommend amendments to the Faculty of Medicine Bylaws. The amendments appear in Article 3 – The Faculty Council.

The proposed amendments clarify the purpose and functions of the Faculty Council and revise language in 3.2 on the Membership of the Faculty Council to state that all references to academic departments include the Division of General Medical Sciences.

A copy of the Faculty of Medicine Bylaws incorporating and highlighting the proposed changes to the text is enclosed with this memo. I concur with the Faculty of Medicine and recommend approval of these amendments.

Please submit the proposed amendment to the appropriate committees for their review at their earliest opportunity. I would be pleased to answer any questions that might arise during the review process.

Thank you.

Sincerely,

Pamela B. Davis, MD, PhD

c: Dr. Phoebe Stewart, Chair, Faculty Council
Dr. Maureen McEnery, Past-Chair, Faculty Council
Nicole Deming, Assistant Dean for Faculty Affairs and Human Resources, SOM

enclosures

CASE WESTERN RESERVE UNIVERSITY
SCHOOL OF MEDICINE

Dr. Phoebe L. Stewart, Ph.D.
Director
Cleveland Center for Membrane and Structural Biology

Professor
Department of Pharmacology

Case Western Reserve University
10900 Euclid Avenue
Cleveland, Ohio 44106-4965

Phone 216-368-4349
Fax 216-368-1300
E-mail pls47@case.edu
http://ccmsb.case.edu
http://pharmacology.case.edu

To: Pamela B. Davis, MD, PhD
Dean, School of Medicine

From: Phoebe Stewart, PhD
Chair, Faculty Council

Re: Amendments to SOM Bylaws approved by the Faculty of Medicine in an election Oct/Nov 2017

Date: November 15, 2017

As Chair of the Faculty Council, I am pleased to submit for your attention and support amendments to the SOM Bylaws approved by the Faculty of Medicine in a special election that was held in October and November 2017.

These amendments are to Articles 3, sections 1 and 2. Article 3 of our Bylaws deals with the Purpose and Functions of Faculty Council and Membership of Faculty Council. The amendments were discussed and voted on at the June 2017 Faculty Council meeting.

A ballot was approved by the Nomination and Elections Committee, distributed to all full-time faculty in the School of Medicine. The ballot remained open for three weeks in accordance with our Bylaws. A copy of the ballot and vote tally is attached. A total of 48 faculty voted and all proposed amendments passed with an overwhelming majority of the votes cast.

It is our request that you join us in recommending these changes and submit them on behalf of the Faculty of Medicine to the Chair of the Faculty Senate and the Secretary of the Faculty Senate.

Sincerely,

Phoebe L. Stewart

Phoebe L. Stewart, PhD

Special Ammendment Voting Information
Academic Year 2017-2018

	3.1: Purpose and Functions of the Faculty Council.
24.	3.1: Purpose and Functions of the Faculty Council The Faculty of Medicine delegates all powers not reserved to the Faculty of Medicine (see Article 2) to a Faculty Council. The Faculty Council shall meet regularly to exercise the powers and obligations of the Faculty Council, which shall include but not be limited to the following: a. To act for the Faculty of Medicine regarding the planning and execution of educational programs and the formulation of policies concerning curricula, student admissions, and the conduct of research in consultation with the appropriate standing committee of the Faculty of Medicine. It shall also have the responsibility to review the requirements for the M.D. degree and to approve student standings and student promotions; b. To hear reports of the Standing Committees ~~committees~~ of the ~~faculty~~ Faculty of Medicine and of the Faculty Council and recommend action on such reports; c. To make recommendations to the Faculty of Medicine concerning the establishment, discontinuance, and merging of departments; ~~c.~~ d.To make recommendations to the Faculty of Medicine concerning ~~to determine~~ the establishments, discontinuance, and initial charge and representative composition of the membership of all Faculty of Medicine ~~faculty~~ standing committees (see Article 2.6c); ~~d.~~ e. ~~to~~ To elect a chair, a chair-elect, members of the Steering Committee, and the Faculty Council members of the ~~Nominating~~ Nominations and Elections Committee; ~~e. to determine the agenda for its own meetings and the agenda for the meetings of the faculty;~~ f. ~~to~~ To classify any issue requiring a vote of the faculty so as to determine the eligibility of the adjunct/clinical and student members to vote on that issue (per 2.4biii and 2.4bv); and g. To create ~~The Faculty Council may appoint standing and~~ *ad hoc* committees to make recommendations concerning its various functions and duties (see Article 3.6d). Final text: <u>3.1: Purpose and Functions of the Faculty Council</u> The Faculty of Medicine delegates all powers not reserved to the Faculty of Medicine itself (see Article 2) to a Faculty Council. The Faculty Council shall meet regularly to exercise the powers and obligations of the Faculty Council, which shall include but not be limited to the following:

	▫ act for the Faculty of Medicine regarding the planning and execution of educational programs and the formulation of policies concerning curricula, student admissions, and the conduct of research in consultation with the appropriate standing committee of the Faculty of Medicine. It shall also have the responsibility to review the requirements for the M.D. degree and to approve student standings and student promotions; ▫ hear reports of the Standing Committees of the Faculty of Medicine and of the Faculty Council and recommend action on such reports; ▫ make recommendations to the Faculty of Medicine concerning the establishment, discontinuance, and merging of departments; ▫ make recommendations to the Faculty of Medicine concerning the establishment, discontinuance, and initial charge and representative composition of the membership of all Faculty of Medicine standing committees (see Article 2.6c); ▫ elect a chair, a chair-elect, members of the Steering Committee, and the Faculty Council members of the Nomination and Elections Committee; ▫ classify any issue requiring a vote of the faculty so as to determine the eligibility of the adjunct/clinical and student members to vote on that issue (per 2.4biii and 2.4bv); and ▫ create *ad hoc* committees to make recommendations concerning its various functions and duties (see Article 3.6d).
	☐ In favor of the proposed amendment (then click the Green Arrow icon) ☐ Not in favor of the proposed amendment (then click the Green Arrow icon) ☐ Abstaining from voting regarding the proposed amendment (then click the Green Arrow icon)
	3.2: Membership of the Faculty Council.
25.	a. Voting Members. Voting members of the Faculty Council shall include one representative of each academic department (all references hereafter to academic departments include DGMS). ~~(~~When more than one autonomous department exists within a single academic discipline, as per section 4.3 below, a representative of each such department shall be elected to the Faculty Council.~~) and of each division with departmental status. (All references hereafter to academic departments include divisions with departmental status.)~~ These representatives shall be referred to as department representatives. Other voting members shall include two representatives from the special faculty whose titles are modified by the adjective adjunct or clinical, one representative from each affiliated institution and

10 representatives of the regular faculty elected at large. All these representatives shall be members of the faculty.

Final text:

3.2: Membership of the Faculty Council

a. Voting Members. Voting members of the Faculty Council shall include one representative of each academic department (all references hereafter to academic departments include DGMS). When more than one autonomous department exists within a single academic discipline, as per section 4.3 below, a representative of each such department shall be elected to the Faculty Council. These representatives shall be referred to as department representatives. Other voting members shall include two representatives from the special faculty whose titles are modified by the adjective adjunct or clinical, one representative from each affiliated institution and 10 representatives of the regular faculty elected at large. All these representatives shall be members of the faculty.

☐ In favor of the proposed amendment (then click the Green Arrow icon)

☐ Not in favor of the proposed amendment (then click the Green Arrow icon)

☐ Abstaining from voting regarding the proposed amendment (then click the Green Arrow icon)

Academic year: 2017-2018 Vote Tally

Special Voting Information
2017-2018

Ballet	In favor	Against	Abstain
24. 3.1: Purpose and Functions of the Faculty Council	43	3	0
25. 3.2: Membership of the Faculty Council	42	6	0

BYLAWS OF THE FACULTY OF
JACK, JOSEPH AND MORTON MANDEL SCHOOL MANDEL SCHOOL OF
APPLIED SOCIAL SCIENCES
CASE WESTERN RESERVE UNIVERSITY

Revised by the Mandel School Faculty - 9/25/2017
Ratified by Faculty Senate – 03/20/2013

Formatted: Section start: Continuous
Formatted: Not Highlight
Deleted: THE
Deleted: Revised by MSASS Faculty – 01/28/2013

Article 1
Purpose

1:1 These bylaws and all amendments adopted as hereinafter provided shall constitute the rules and regulations governing the conduct and procedures of the constituent faculty of the Mandel School of Applied Social Sciences (hereinafter called the faculty) in the performance of its duties, as specified in and authorized by the constitution of the University Faculty of Case Western Reserve University.

Article 2
Membership

2:1 Members

Members of the faculty shall be all persons holding tenured or tenure track appointments, non-tenure track appointments, or special faculty appointments, as defined in Article I, sections A, B, and C, of the Organization and Constitution of the Faculty, in the constituent programs of the Jack, Joseph and Morton Mandel School of Applied Social Sciences (hereafter called the Mandel School). Special faculty members include persons holding part-time or full-time academic appointments with specific limited responsibilities for the duration of a specific project or for a limited duration, including visiting faculty at all ranks, research faculty (at the ranks of assistant professor, associate professor, and professor), adjunct faculty (at the ranks of instructor and senior instructor and called adjunct instructor or adjunct senior instructor), field education faculty (at the rank of instructor and called field education instructor), specific named professors (according to requirements established for the position), and clinical special faculty at all ranks. All types and titles of special faculty are subject to the approval of the provost.

Formatted: Font: (Default) Times New Roman

Secondary appointments are made as special faculty appointments. They are designed for persons who hold primary appointments in other schools/departments within the university. Such an appointment shall be at the rank of instructor, senior instructor, assistant professor, associate professor, or professor.

A faculty member shall be considered full-time if he/she is engaged fifty percent or more time in approved academic activities and the academic activity is conducted at an approved site. Faculty members holding part-time appointments

shall be invited to attend faculty meetings but shall not hold elective positions. For voting rights see 2:6.

2.2 The majority of appointments shall be tenured or tenure track.

By separate resolution the constituent faculty of the Mandel School of Applied Social Sciences sets the specific ratio of tenured/tenure track to non-tenure track faculty. However, as stated in Article I, Section D of the University Faculty Handbook, except under special circumstances which are reviewed by the Faculty Senate and approved by the provost, the majority of the voting university faculty members at all times within each constituent faculty shall be tenured or tenure track faculty.

2:3 Terminations in the Case of Financial Exigent Circumstances

In accordance with Chapter 3, Part One, I, E., 3. of the University Faculty Handbook, these bylaws set forth the following guidelines for termination of faculty in the event of financial exigencies facing the school. Special faculty, in reverse order of seniority of rank and years of service, would be terminated first. Then, if necessary, non-tenure track faculty in reverse order of seniority of rank and years of service would be terminated. Tenure track, but untenured faculty, in reverse order of seniority of rank and years of service would then be terminated. Finally, if all other remedies are exhausted, tenured faculty in reverse order of seniority of rank and years of service would be terminated.

2:4 *Ex-officio* Members

The president and provost shall be *ex-officio* members of the faculty as provided in the bylaws of the University Board of Trustees.

2:5 Student Representatives

One student from each class (first and second year) in the masters program and one at-large from the doctoral program students shall be voting members of the faculty. An alternate shall also be designated who shall have voting rights if a voting member is not present.

Students from the masters program are selected by the chair and members of the officially recognized student government organization. The doctoral student selected by the doctoral student body to represent them in the Doctoral Program Executive Committee shall act as the doctoral representative.

2:6 Voting Members

a. All tenured, tenure track and non-tenure track members of the faculty and student representatives may vote on general faculty matters. Student

representatives may not vote on any matters pertaining to their own or other students' candidacy for degrees. Special faculty members have no vote on any matters coming before the university faculty. However, specified categories of special faculty including Research and Clinical Special Faculty may vote on particular matters coming before the Mandel School faculty, with prior approval of the voting faculty..

b. Administrative directors without academic rank not defined as members of the faculty may vote on the Mandel School internal matters if so approved by the voting faculty members with prior notice.

2:7 Certification of Voting Members

The dean of the Mandel School of Applied Social Sciences shall certify the names of all administrative directors, faculty members, and students who are voting members of the faculty, and their respective ranks, titles, and positions within 30 days after the beginning of the academic year and thereafter as new appointments occur. This list shall be circulated to the faculty as soon as possible after the beginning of the academic year.

2:8 Faculty Roster

The dean shall furnish to the secretary of the university a list of all members of the faculty in accordance with Article 1, Section F, of the constitution of the University Faculty.

2:9 Voting Members of Committees

All tenured, tenure track, non-tenured track and special faculty are voting members of standing or *ad hoc* committees to which they are appointed or elected.

Article 3
Meetings

3:1 Regular Meetings

The faculty shall hold meetings as appropriate, but not less than two full meetings per semester, on dates to be determined by the dean.

Administrative directors without academic rank may be invited to attend faculty meetings but shall not hold elective positions.

3:2 Special Meetings

Deleted: and no vote on any matter coming before the MSASS faculty, unless specifically asked, with prior notice, to vote on a particular issue by the voting faculty

Deleted: MSASS

Formatted: Indent: First line: 0"

Formatted: Indent: First line: 0"

Formatted: Indent: First line: 0"

Special meetings shall be held at the request of the president or the dean, or on petition to the dean by 20 percent of the voting members of the faculty, stating the purpose of the proposed meeting.

3:3 Presiding Officer - Rules of Order

The president or designated deputy shall preside at both regular and special meetings and shall conduct such meetings in accordance with *ROBERTS RULES OF ORDER*, latest edition. A faculty parliamentarian may be appointed by the dean.

Formatted: Indent: Left: 0.5"

Deleted: ¶
Page Break

3:4 Minutes

A person shall be designated by the dean who shall record the attendance at all meetings of the faculty and shall keep the minutes of all such meetings.

3:5 Quorum and Procedure of Voting

Sixty percent of the voting members of the faculty shall constitute a quorum and all decisions shall be by majority vote of those present, providing a quorum is present, except as specified.

Article 4
Committees

4:1:1 Educational Policy Authority

The authority for educational policy rests with the faculty as a whole. Committees act in their behalf and are ultimately responsible to the faculty.

Formatted: Indent: First line: 0"

4:1:2 Standing Committees

Formatted: Indent: First line: 0"

Standing committees of the faculty shall be the Steering Committee, Faculty Committees for Promotion and Tenure, Masters Curriculum Committee, Committee on Students, Committee on the Doctoral Program, the Library Committee and the Information Technology Committee. Faculty and/or the dean may at any time establish committees to study and make recommendations on any matter within the jurisdiction of the faculty. Chairpersons of all standing committees shall be appointed by the dean except as specified in the bylaws. Unless exceptions are noted, only tenured, tenure track and non-tenure track faculty shall serve on standing committees.

4:1:3 Standing Committee Procedures

Formatted: Indent: First line: 0"

Members of the Steering Committee, Masters Curriculum Committee, the Doctoral Program Executive Committee and the Information Technology Committee shall be selected during the spring semester. Their terms of

membership and method of selection shall be as specified by faculty in procedures guiding operation of each committee.

4:1:4 Committee Rosters

The dean shall prepare and distribute annually to all faculty members a list of all members of standing, advisory, and *ad hoc* committees.

Formatted: Indent: First line: 0"

4:2:1 Steering Committee-Function

The purpose of the Steering Committee shall be to make recommendations to the faculty on policies related to the governance of the school. The functions of the Steering Committee shall include but not be limited to the following:

a. making recommendations to the faculty on the mission and overall direction of the school;

b. advising the dean and consulting with him/her on the appointment of major academic officers, on the granting of sabbatical leave requests, on formulation of the budget, on the allocation of the school's resources and facilities, on long-range planning, and other matters of similar concern to the faculty;

c. reviewing and monitoring the school's budget;

d. reviewing current programs, policies, and organizational structures with regard to their effectiveness, and exercising initiative in proposing the development and introduction of new programs, policies, and organizational structures; and

e. recommending bylaws revisions and amendments.

4:2:2 Steering Committee - Membership – Structure

The Steering Committee shall consist of the chairperson, six elected faculty members, and the faculty representative on the Senate Executive Committee *ex officio*. The dean, associate dean of academic affairs and the associate dean of research and training, the chairperson of the doctoral program, and the director of field education shall participate as *ex-officio* members.

The chairperson and faculty members of the Steering Committee shall be elected from the entire faculty eligible to vote. Elected members shall serve overlapping three-year terms. Vacancies shall be filled by election. Members shall be eligible for re-election.

A standing Budget Subcommittee appointed by the Steering Committee chair shall consult with the dean on the formulation and implementation of the school's

budget. Budget Subcommittee members can include faculty who are not members of the Steering Committee.

A standing Research & Training Subcommittee of the Steering Committee shall monitor the research and training activities of the school. The chair and members of this Subcommittee shall be appointed by the Steering Committee chair.

4:2:3 Steering Committee - Meetings

Meetings of the Steering Committee shall be held at least twice in a semester and on call of the chairperson who shall give appropriate notice of all meetings to each member of the committee, specifying time, place, and agenda of the meeting. Steering Committee meetings shall be open to all members of the faculty.

4:3:1 Faculty Committees for Promotion and Tenure

In accordance with the Faculty Handbook (Chapter 3, Part One, I, A., 3.), at the time of the initial appointment, the faculty member shall be provided with a general written description of 1) the criteria by which his/her performance will be judged, and 2) the teaching, research and scholarship, and service required to maintain faculty status and for renewal of appointment, promotion, and/or tenure, as applicable.

The criteria for each category of faculty appointment and for promotion and tenure are developed by the the Mandel School faculty and described in Bylaws Attachment A, subject to approval by the provost, as appropriate for its discipline, and following the criteria set forth in Chapter 3, Part One, I, F., 3. of the University Faculty Handbook. The the Mandel School faculty shall also set forth written procedures providing for an appropriate review of each member of the faculty, as defined in Chapter 3, Part One, I, F., 5. of the University Faculty Handbook. All faculty members, with the exception of part-time faculty, receive an annual review.

Deleted: MSASS

Deleted: MSASS

A Faculty Development Committee offers career guidance to each tenure track faculty member during the pre-tenure period. The option of forming an advisory committee for the purpose of career guidance and development shall be available to tenured faculty seeking promotion, non-tenure track faculty, research faculty and adjunct faculty as well.

The maximum pre-tenure period for the Mandel School tenure track faculty shall be six years. However, during the pre-tenure period, individual extensions may be granted in accordance with the guidelines set forth in Chapter 3, Part One, I, G., 5. and 6. of the University Faculty Handbook.

Deleted: MSASS

A committee consisting of all faculty eligible to vote shall meet to review candidates for promotion and tenure in accordance with the criteria and procedures for promotion and tenure established by the the Mandel School faculty.

Deleted: MSASS

These faculty shall consider all promotions and awards of tenure to insure the application of equitable standards for assessing credentials and to insure compliance with the personnel policy guidelines established by the university Faculty Senate.

On recommendations involving promotion of tenured and tenure track faculty, only tenured and tenure track faculty of rank equal or superior to the rank being considered shall be eligible to vote. On recommendations involving promotion of non-tenure track and special faculty, all voting faculty (tenured, tenure track, and non-tenure track) of rank equal or superior to the rank being considered shall be eligible to vote.

On recommendations involving tenure of tenure track faculty, only faculty with tenure shall vote.

The faculty committee considering promotion and/or tenure shall be chaired by the dean and shall make formal recommendations to the dean and university administration. The dean's position should not be included in the vote but should be transmitted to the university in a separate report accompanying the formal recommendations submitted by the committees.

The Mandel School criteria (approved 12/19/94) for consideration of promotion and tenure are organized into four areas, as specified in the CWRU Faculty Handbook. .
These are as follows:

Deleted: MSASS

1. expert knowledge of academic field and a commitment to continuing development of this competence;

2. effectiveness in facilitating learning;

3. implementation of a continuing program of research and scholarship;

4. assuming a fair share of school/university service and administrative tasks, including contributing to community and professional service.

The first criterion, “expert knowledge of academic field and a commitment to continuing development of this competence,” applies to all faculty: tenured, tenure track, non-tenure track, and special.

Deleted: MSASS

Tenured and tenure track faculty should provide evidence that they can and will continue to satisfy all of the other three criteria (2, 3 and 4).

Non-tenure track faculty should provide evidence that they can and will continue to satisfy at least two of the remaining three criteria (2, 3 and/or 4), depending on their initial appointment.

Special faculty should provide evidence that they can and will continue to satisfy at least one of the other three criteria (2, 3 and 4), depending on their initial appointment.

Faculty hired in the tenure track must remain in the tenure track. Faculty in the non-tenure track can apply for an open tenure track position, but if they move into a tenure track position, they cannot move back to a non-tenure track status.

The Mandel School shall provide an appropriate allocation of resources and time (taking into account rank and type of faculty appointment) for scholarly growth, academic achievement, and professional development, and shall delineate the commitment of resources that accompany an award of tenure.

Deleted: MSASS

Deleted: ¶
¶

4:3:2 Appointments Beyond Pre-Tenure Period

The Mandel School faculty members who have been denied tenure by the university may be given renewable term appointments not leading to tenure consideration, contingent upon full financial support from non-university resources. Such faculty members would be in the special faculty category.

Deleted: MSASS

4:4:1 Curriculum Committee - Function

Deleted: The

The purpose of the Curriculum Committee shall be to provide leadership, establish standards and initiate activities for overall planning, development, and coordination of the degree and non-degree or educational programs. It shall recommend to the faculty policies and procedures with respect to the following:

a. curriculum philosophy and standards;
b. overall structure;
c. alternative programs leading to the master's degree; and
d. requirements for matriculation and graduation.

It shall take responsibility for initiation and execution of ongoing and periodic assessment of programs; and shall establish criteria for reviewing educational programs and proposals.

It shall review the practices and proposals of sub-units to determine their appropriateness and compatibility with overall curriculum education policy and priorities.

The Curriculum Committee functions do not include doctoral education. All matters concerning doctoral program curriculum and standards are the purview of the Doctoral Program Faculty, as set forth in section 4:6:1.

4:4:2 Curriculum Committee – Membership

The committee consists of the following persons:

a. six full-time faculty members, balanced by rank and responsibility in the school, serving overlapping three-year terms;

b. the associate dean for academic affairs and/or designee;

c. two students elected by the officially recognized student government organization;

d. a representative selected by the Alumni Board;

e. one member from the adjunct faculty, appointed by the associate dean for academic affairs;

f. the administrator for student services;

g. the director of field education or a designee; and

h. a field instructor, recommended by the director of field education.

The committee chairperson shall be appointed by the dean.

Members of the faculty may submit nominations for committee membership to the chair of the committee and may nominate themselves. The Curriculum Committee will select nominees and, in the spring semester, present to the faculty a slate that meets the criteria for balance. The slate shall be sent to faculty at least one week in advance of the meeting at which the election is to occur. Any member of the faculty may submit an alternative slate.

Faculty shall be elected to overlapping three-year terms.

4:5:1 Committee on Students– Function

The Committee on Students shall be responsible for formulating policies related to carrying out its administrative functions and for recommending such policies to the Steering Committee and faculty for action.

The committee shall make administrative decisions regarding:

a. students whose behavior is determined by the Dean's Committee on Consultation to be in violation of the Professional Code of Conduct Policy (see the M.S.S.A. Program Instructor's Manual and the MSSA Student Handbook);

b. students who appear to be unable to make satisfactory progress in meeting field expectations;

c. students who wish to petition for reinstatement following termination.

Following deliberations in this administrative role, the committee shall recommend a plan of action to the associate dean for academic affairs including suspension, termination, reinstatement or no further action. The associate dean for academic affairs will provide the final decision on the committee's administrative action. At any point the committee may consult with the University Office of Student Affairs.

Formatted: Font: (Default) Times New Roman

Student appeals of Committee on Students' actions shall be made to the dean.

4:5:2 Committee on Students– Membership

The committee and its members shall be appointed by the dean. The committee includes the director of field education or his/her designee, the appointed chairperson of the committee and two other faculty members, one member of the Field Education Advisory Committee, two students, and alternates for faculty, field, and student members. The alternates serve when regular members are unable to attend.

The associate dean for academic affairs, or designee, should participate as an ex-officio member.

All faculty members shall have a responsibility to serve on the committee.

Faculty members shall be appointed for a maximum of a three-year term. Provision shall be made for staggering the terms of office, with no more than two rotating off in any one year. Vacancies shall be filled by the appointment of the dean.

The representative from the Field Education Advisory Committee shall be recommended to the dean by the chairperson of the Committee on Students. One student and an alternate from the first year class shall be elected by the officially recognized student government organization in January. An additional first year student is elected in May. Names of students are presented to the dean for appointment to the committee to serve until January and May of the following year.

All members, except ex-officio, are voting members. A quorum s defined as four voting members. Voting members who cannot attend a meeting are required to arrange for an alternate: faculty and student members, and the Field Education Advisory Committee representative arrange with their alternates and the director of field education with a designated field office staff member.

4:6:1 Doctoral Program Faculty

Deleted: The

The functions of the doctoral program faculty shall be to provide leadership, establish standards and initiate activities for overall planning, development and coordination of the doctoral program. Under the authority of the total faculty, it shall make decisions concerning:

a. degree requirements;
b. curriculum;
c. standards of admission; and
d. student standing and promotion.

The doctoral program faculty shall be members of the faculty as defined in Article 2, Section 1, who hold doctoral degrees, and other members teaching in the doctoral program. The doctoral program faculty shall report to the total faculty at least once a year.

4:6:2 Doctoral Program Executive Committee

Deleted: The

The Executive Committee of the doctoral program shall be composed of four members of the doctoral program faculty elected at-large, one student who shall be elected by the students enrolled in the doctoral program, the chairperson of the doctoral program, the dean, and those persons who have major responsibility for constituent areas of the doctoral curriculum. The term of office of elected members shall be two years with one half elected in the spring semester in alternate years.

The functions of the doctoral program Executive Committee shall be to act in behalf of the constituent faculty in matters related to the functions outlined in Section 4:6:1, making recommendations to the constituent faculty and decisions as directed.

4:6:3 Chairperson of the Doctoral Program Faculty

Deleted: The

The chairperson of the doctoral program faculty shall be appointed by the dean and shall be a full-time faculty member. He/she shall act as presiding officer of the doctoral program faculty and the doctoral program Executive Committee.

4:7:1 Library Committee

Deleted: The

The Library Committee shall review and make recommendations to the faculty concerning issues related to the library. The functions shall include, but not be limited to:

a. making recommendations to the faculty on the mission and overall direction of the library;

b. advising and consulting with the library director on the library's budget and long range planning; and

c. reviewing current library policies and making recommendations reflecting changing user needs.

The Library Committee shall meet at least twice during each of the fall and spring semesters and on call of the chair.

4:7:2 Library Committee – Membership

The Library Committee shall consist of four faculty members, the library director, one student representative from each of the masters and doctoral programs and one alumnus. The faculty members should represent, as far as possible, the various program and research constituencies in the school.

The faculty membership is to be appointed by the dean, the student representative by their own constituencies and the alumnus by the Alumnae Association. Terms of membership shall be overlapping two-year terms and members may be reappointed. The chair shall be selected by the dean with the library director not being eligible to chair the group.

4:8:1 Research & Training Subcommittee

The purpose of the Research & Training Subcommittee is to establish and assure a scholarly research environment within the school. Specifically, the committee shall:

- Provide leadership and initiate activities for overall planning and development of research and training grants and funding.
- Recommend to the Steering Committee policies and procedures with respect to supporting and advancing the research mission of The Mandel School
- Assess the training and professional development needs of faculty, doctoral students and staff with respect to research and recommend programs to meet these needs.
- Prepare and deliver to the Steering Committee, at least yearly, a report on research and training programs and of The Mandel School research administration.

Deleted: MSASS

Deleted: MSASS

- Encourage and support faculty to develop research and training proposals.
- Oversee the investment funds for research and training development (i.e. funds for pilot studies and proposal preparation).
- Provide leadership and work with the Doctoral Program Executive Committee to develop research training and funding opportunities for doctoral students.
- Promote research visibility external to The Mandel School through developing a research newsletter, research content on the The Mandel School web site, research features in The Mandel School publications and research briefs. Receive reports from faculty representatives to University Research Council and Faculty Senate Research Committee, and serve as a conduit for bringing relevant University research issues to the Steering Committee.

4:8:2 Research & Training Subcommittee – Structure and Membership

Faculty (tenured, tenure track, non-tenure track, special), senior research associates, center directors and principal investigators are eligible for membership on the subcommittee. There should be a minimum of eight members of the subcommittee, including Associate Dean for Research and Training and the chair of the doctoral program. At least one member of the subcommittee should also sit on the curriculum committee for the purpose of assuring the flow of information. The dean of the school and Manager for Research & Training shall be *ex-officio* members of the subcommittee. The appointments should be staggered and for a three-year term.

4:9:1 Dean's Committee on Consultation – Function

The purpose of the Dean's Committee on Consultation is to provide consultation to any member of the academic team when a student situation presents which may not warrant immediate administrative action, but where members of the academic team believe that additional or different supporters may be needed to assure that the student has the opportunity to be successful in the program. The Dean's Committee on Consultation shall be responsible for formulating policies related to carrying out its consultative functions and for recommending such policies to the Steering Committee and faculty for action.

The committee shall make consultation decisions regarding:

a. Students who are presenting problems, either in the classroom or in the field, that are affecting their performance;
b. Students who are being placed on disciplinary warning or probation and develop a pattern of problematic performance in violation of the the Mandel School Professional Code of Conduct Policy found in the M.S.S.A. Program Instructor's Manual and MSSA Handbook;
c. Academic misconduct matters as outlined in the Case Western Reserve University Academic Integrity Standards has occurred;

Deleted: MSASS
Deleted: MSASS
Deleted: MSASS
Formatted: Indent: Left: 0.75", First line: 0"
Deleted: ¶
Deleted: Page Break
Formatted: Indent: Left: 0", First line: 0"
Deleted: MSASS

d. Other situations where a member of the academic team is concerned that the student's performance or behavior may not lead to successful completion of the program.

Following deliberations in this consultation role, the committee shall recommend a plan of action to the associate dean for academic affairs. In cases where serious academic misconduct is found, this plan may include referral to the Dean of Graduate Studies for possible action, as provided in the CWRU Academic Integrity Standards. If the alleged violation is one for which the penalty is separation from the university (defined as level 3 and level 4) in the Academic Integrity Standards for Graduate Students (Chapter 4, Article VI of the Case Western Reserve University Faculty Senate Handbook, then the dean of the Mandel School will automatically forward the case to the dean of graduate studies to be heard under the University Academic Policies and Procedures. In cases where students are having serious difficulties in meeting field requirements or when the students' behavior is in violation of the Professional Code of Conduct Policy (see the M.S.S.A. Program Instructor's Manual and the MSSA Student Handbook), the committee shall refer the student to the Committee on Students to consider administrative action.

The Dean's Committee will coordinate and continue to monitor the progress of students who are presenting problems in the classroom or in the field. At any point in the consultation process, the administrators of student services or academic affairs may consult with the University Office of Student Affairs.

4:9:2 Dean's Committee on Consultation – Membership

The Dean's Committee on Consultation is chaired by the Assistant Dean for Student Services and Director of Student Services or his/her designee. The committee includes the director of field education or his/her designee and the Associate Dean for Academic Affairs or his/her designee.

The designee for the director of field education shall be recommended to the dean by the director of field education. The student's field and academic advisor may be asked to meet with the committee. Other members of the academic team may be asked to meet with the committee as needed.

4:10.1 Information Technology Committee - Function

Formatted: Underline

The charge for this committee shall be to review and to make recommendations to the faculty concerning issues related to information technology at the Mandel School. The functions shall include, but not be limited to: making recommendations to the faculty on the mission and overall direction of IT; advising and consulting with the the Mandel School Director of IT on the IT budget and both short-range and long-range planning; reviewing current IT practices, priorities, and policies and making recommendations reflecting current

Formatted: Indent: Left: 0.5"

Deleted: MSASS

and projected user needs and act as interface with the University level IT committee and appropriate sub-committees.

4:10.2 Information Technology Committee – Structure and Membership

The Chair of this Standing Committee shall be a member of the the Mandel School faculty.Voting members of this Standing Committee shall include 3 elected representatives from the faculty, the Director of Information Technology, and one appointed representative each from master's students, doctoral students, and staff. Voting members shall serve two year overlapping terms. *Ex officio* members of the IT Standing Committee shall include the Dean of the Mandel School, Associate Dean for Research and Training, Associate Dean for Academic Affairs, Assistant Dean for Financial Administration, Chair of the Doctoral Program, Chair of the Master's Program, Director of the Harris Library, and The Mandel School Registrar.

Article 5
Constituent Programs of The Mandel School

5:1 Constituent Programs

Constituent programs are: Masters in Social Work Program, Doctoral Program, Continuing Education Program, and such other programs as shall be created.

Leaders of constituent programs shall be appointed by the dean in consultation with the Steering Committee. These persons shall be charged with responsibility for educational and administrative leadership of their programs, and will be responsible to the dean in all matters except those lying within the authority of the faculty as a whole, or where authority is shared with another program of the university.

Each constituent program shall be organized internally as specified in the bylaws or in consultation with the Steering Committee.

Article 6
Dean of The Mandel School

6:1 Appointment of Dean and Term of Office

The dean of The Mandel School shall be appointed for a specified term by the president after consultation with members of the faculty and the Steering Committee.

Formatted: Underline
Formatted: Indent: Left: 0.5"
Deleted: MSASS
Deleted: ¶
Deleted:
Deleted: MSASS
Deleted: ¶
Deleted: MSASS
Formatted: Indent: First line: 0"
Deleted: MSASS
Deleted: MSASS
Deleted: Executive Committee of the Senate

6:2 Functions of the Dean

The dean of the Mandel School shall be the chief executive officer of the school and chairperson of the faculty, charged with broad responsibility of representing its interest in the academic and administrative management of the university as a whole and shall perform such other duties as are specified elsewhere in these bylaws.

6:3 Other Administrative Officers

Appointments to or creation of any positions of associate dean, or other administrative offices shall be made by the dean in consultation with the Steering Committee.

Article 7
Representation in University Governance

7:1 University Representatives

The faculty of the Mandel School shall be represented in university governance by its dean, associate deans, and separate faculty members, as they shall from time to time be selected to serve on various university bodies.

The faculty of the Mandel School shall provide representatives to the Faculty Senate, and other university bodies in accordance with the bylaws of those bodies.

Article 8
Amendment of the bylaws

8:1 Amendment Procedures

These bylaws may be amended at any meeting of the faculty by a vote of 60 percent of the members present, provided however, that the quorum of such a meeting shall be 60 percent of the voting faculty, and provided that the dean shall have distributed to each voting member of the faculty a written copy of the proposed amendment at least 14 days before the meeting

Following initial amendment, the bylaws shall be submitted to the appropriate committee of the Faculty Senate for review. Changes suggested by that committee shall be presented to the Steering Committee for its approval and then forwarded to faculty for final review and approval using the procedure discussed above. Approved bylaws are then submitted to the Faculty Senate for ratification.

Article 9
Ratification of the bylaws

Deleted: Page Break ¶

Deleted: MSASS

Deleted: MSASS

Formatted: Indent: First line: 0"

Deleted: MSASS

Deleted: ¶ ¶ ¶

Formatted: Indent: First line: 0"

Deleted: ¶ Page Break

9:1 Procedures

These bylaws shall become effective when approved by the faculty and ratified by the Faculty Senate.

9:2 Current Bylaws

A copy of the current bylaws shall be provided to the faculty by the dean.

Approved by the Mandel School faculty
November 20, 1989
Revised December 22, 1992
Revised April 25, 1994
Revised February 20, 1995
Revised December 16, 2002
Revised February 18, 2003
Revised August 23, 2004
Revised September 20, 2004
Revised March 27, 2006
Revised January 14, 2008
Revised February 11, 2008
Revised October 20, 2008
Revised February 16, 2012
Revised April 16, 2012
Revised October 25, 2012
Revised January 28, 2013
Revised September 25, 2017

Ratified by Faculty Senate
January 28, 2003
October 27, 2004
April 27, 2006
September 24, 2008
October 25, 2012
March 20, 2013

Formatted: Indent: First line: 0"

Formatted: Indent: First line: 0.5"

Deleted: ¶
¶

Formatted Table

Deleted: MSASS

Deleted: Mandel School of Applied Social Sciences¶
Case Western Reserve University¶
¶
BYLAWS ATTACHMENT A¶
STANDARDS FOR APPOINTMENT, REAPPOINTMENT, PROMOTION AND TENURE¶
FOR TENURED, TENURE TRACK, NON-TENURE TRACK AND SPECIAL FACULTY¶
¶
(Numbers in parentheses refer to criteria area. Criteria 1 applies to all faculty.)¶
¶
MSASS criteria for consideration of promotion and tenure are organized into four areas drawn from the CWRU Faculty Handbook. These are as follows:¶
¶
<#>Expert knowledge of their academic field and a commitment to continuing development of this competence¶
<#>Effectiveness in facilitating learning¶
<#>Implementation of a continuing program of research and scholarship¶
<#>Assuming a fair share of school/university service and administrative tasks, including contributing to community and professional service¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
Tenured & Tenure Track¶
(Criteria 1- 4 apply for tenured and ¶
tenure track)
...

2018 online compliance training for faculty & staff

Lisa Palazzo
Univ. Chief Compliance & Privacy Officer

Background of university-wide compliance training

- Employees should be aware of their organization's policies and standards
- Best practices for healthy organizations include regular employee training
- This will be third time for online compliance training at CWRU
- Opportunity to proactively address and/or anticipate compliance concerns so that we can avoid problems

Development of 2018 module

Responses to 2017 survey questions informed development of 2018 module

Responders liked:

-Convenience of doing it online when & where they wanted
-Thorough content, good explanations, efficient
-Provided web links to policies and more university information
-The real-world examples clearly illustrated the concepts
-That the university values ethics

Responders disliked:

-The most common suggestion:
"Make it more interesting and interactive, perhaps by include video/visual content"
-Don't read slides verbatim
-Improve the quality of the recording
-Clearly state which platforms will not work

2018 module: The user experience

- Jan – March 2018 training period

- Increased the “interesting to watch” factor; Qualtrics delivery vehicle

- Around 40 minutes to complete

- Main topics for 2018:
  - -Alcohol on campus & at university events
  - -Tobacco-Free Campus Policy
  - -Youth programs

- Live sessions will supplement the online module for appropriate groups

Questions

CASE WESTERN RESERVE UNIVERSITY
Faculty Senate Executive Committee
Regular Meeting, Tuesday, December 5, 2017

Draft Resolution on Section 1204(e) of the House Version of H.R. 1

Whereas the United States House of Representative has adopted H.R. 1, the "Tax Cuts and Jobs Act," and the United States Senate has adopted an amended version with substantial changes, so that the bill now is referred to a Conference Committee; and

Whereas Section 1204(e) of the House version would amend Section 119(d) of the Internal Revenue Code to render graduate student tuition waivers imputed income, taxable to the graduate student without production of any cash income to pay that additional tax; and

Whereas graduate education is indispensable to the tripartite mission of research universities in the United States to advance scientific, technical, scholarly, and professional research, to educate citizens and intellectual and professional leaders, and to contribute to the cultural and social betterment of the United States and the world; and

Whereas the faculty and administration of Case Western Reserve University have both a professional and moral obligation to support our graduate student colleagues and to work to prevent this legislation from being adopted; and

Whereas the faculty and administration are united in our commitment to persuade our elected representatives to avoid the damage to the international leadership of United States research universities that would result from this flawed public policy;

The Faculty Senate of Case Western Reserve University resolves:
1) To denounce the proposal to tax graduate student tuition waivers as flawed public policy that unjustly targets a small and vulnerable population and erodes United States leadership in research and scholarship; and

2) To direct the Chair of the Faculty Senate and the Secretary of the University Faculty to transmit copies of this resolution to both Senators from Ohio and to all members of the Ohio congressional delegation, asking them to work in the Conference Committee to ensure that this provision is removed from the final legislation; and

3) To work with and support the University administration collaboratively to maximize the influence that the University, and higher education more generally, can bring to bear to avoid the severe damage that passage of this provision would inflict; and

4) To direct the Chair of the Faculty Senate and the Secretary of the University to transmit a copy of this resolution to the Graduate Student Council of Case Western Reserve University.

Faculty Senate Meeting
Monday, December 11, 2017
3:30p.m. – 5:30p.m., Toepfer Room, Adelbert Hall,

3:30 p.m.	Approval of Minutes from the November 28, 2017, Faculty Senate Meeting, *attachment*	Juscelino Colares
3:35 p.m.	President and Provost's Announcements	Barbara Snyder Bud Baeslack
3:40 p.m.	Chair's Announcements	Juscelino Colares
3:45 p.m.	Report from the Executive Committee	Cynthia Beall
3:50 p.m.	Graduate Studies Committee: MS/PhD in Biomedical and Health Informatics, *attachment*	Mendel Singer
4:00 p.m.	Academic Calendar Modifications	Gary Chottiner
4:10 p.m.	Student Record Retention Policy	Gary Chottiner
4:20 p.m.	Graduate Student Council "Charlottesville" Resolution, *attachment*	Sahil Gulati
4:25 p.m.	Information on Upcoming University Compliance Training, *attachment*	Lisa Palazzo
4:35 p.m.	*Tentative*- Update on FSCUL External Comprehensive Library Review	Paul Iversen
4:45 p.m.	CUE Status Update and Discussion	Kimberly Emmons
4:50 p.m.	Report from University Health and Counseling Services	Jennifer McCarthy Sara Lee