

Board of Trustees

June 3, 2017

RESOLUTION TO APPROVE A POST-BACCALAUREATE READINESS INSTRUCTION FOR BIOMEDICAL EDUCATION (PRIME) CERTIFICATE PROGRAM

WHEREAS, Article II, Section 1 of the By-Laws of the Board of Trustees for Case Western Reserve University (the “University”) states, in relevant part, that the Board of Trustees shall oversee the educational programs of the University; and

WHEREAS, the charge for the Faculty Senate Committee on Graduate Studies (the “Graduate Studies Committee”) states, in relevant part, that the Graduate Studies Committee shall review and make recommendation to the Faculty Senate with respect to special programs under the administration of the School of Graduate Studies at the University, and the Graduate Studies Committee voted at its April 5, 2017 meeting, to recommend the proposed Post-Baccalaureate Readiness Instruction for BioMedical Education (PRIME) Certificate Program (the “Certificate”) to the Faculty Senate; and

WHEREAS, the charge for the Faculty Senate Committee on Undergraduate Education (the “Undergraduate Education Committee”) states, in relevant part, that the Undergraduate Education Committee shall review and make recommendations to the Faculty Senate with respect to undergraduate degree programs at Case Western Reserve University, and the Undergraduate Education Committee voted at its April 18, 2017 meeting to recommend the Certificate to the Faculty Senate; and

WHEREAS, Article V, Section A, Par. 2 (is this the correct reference?) of the Constitution of the University Faculty states in relevant part that the Faculty Senate shall make recommendations to the President for consideration and transmittal to the Board of Trustees with respect to policies governing standards for curricula and content of all degree programs; and

WHEREAS, at its meeting on meeting on April 27, 2017, the Faculty Senate voted to recommend the Certificate to the President for consideration and transmittal to the Board of Trustees.

NOW, THEREFORE, BE IT RESOLVED THAT:
the Executive Committee of the Board of Trustees of the University approves the establishment of, and authorizes the University to take and oversee all necessary actions in order to create, the Post-Baccalaureate Readiness Instruction for BioMedical Education (PRIME) Certificate Program.

APPROVED by the
Case Western Reserve
University
BOARD OF TRUSTEES
Elizabeth J. Keefer
SECRETARY OF THE
CORPORATION

PRIME

- **Post-baccalaureate Readiness
Instruction for bioMedical Education**
- **A Collaboration of the School of
Medicine and the College of Arts
and Sciences**

PRIME

- **Result of several years of collaborative work across the College of Arts and Sciences and the School of Medicine to ensure the best possible working relationship to benefit our students.**
- **Enthusiastically supported by both Deans, with agreement on sharing of program costs, allocation of tuition revenue, and careful advising of students and management of course enrollments.**
- **Communication and collaboration with all involved departments to meet the needs of the PRIME students along with those of our current students.**

PRIME

- **Designed to qualify and prepare post-bac students for admission to well-ranked medical schools.**
- **Well-known model that has been very successful at other universities.**
- **We will carefully admit students who we expect to succeed and will be evaluating the program to assess the extent to which the PRIME students are admitted to well-ranked medical schools and the extent to which it impacts our other educational programs.**

PRIME

- **Non-degree post-bac certificate program (minimum 24 credits).**
- **Two primary groups of students:**
 - (1) "Career changers:" students who did not intend or prepare for medical school but now want to pursue a career in medicine. They need the basic courses and to prepare for the MCAT.**
 - (2) "Academic Enhancers:" students whose qualifications are below but within range for improvement for admission to well-ranked medical schools.**
- **Program will vary based on individual student needs.**
- **Dedicated program director who will carefully advise students on individual programs of study in consultation with both schools to ensure good use of resources.**

PRIME

- **Revenue generating for both of our units.**
- **Contributor to CAS financial recovery plan.**
- **Program will be continually evaluated and formally re-evaluated in two years to assess its resources, and to ensure that it is working well for both the School of Medicine, the College of Arts and Sciences, and the PRIME students.**

CWRU Action Form for Majors/Minors/Programs/Sequences/Degrees

(instructions on back)

Docket # _____

College/School: College of Arts and Sciences and School of Medicine
Department: Office of the Dean

PROPOSED: _____ major
_____ minor
 X program (certificate)
_____ sequence
_____ degree

TITLE: PRIME (Post-baccalaureate Readiness Instruction for bioMedical Education) Program

EFFECTIVE: Fall (semester) 2017 (year)

APPROVED
A:5 CEP 3-24-2017
Endorsed by A:5 Executive Committee 3-10-2017
Approved by Faculty of the College of Arts and Sciences 3-31-17

DESCRIPTION:
The Case Western Reserve University (CWRU) School of Medicine (SOM) and College of Arts and Sciences (CAS) jointly propose a distinctive pre-medical, post-baccalaureate, non-degree certificate program. The PRIME (Post-baccalaureate Readiness Instruction for bioMedical Education) program will award a certificate upon successful completion of at least 24 graded credits.

The PRIME program is designed to qualify and prepare post-baccalaureate students for admission to well-ranked medical schools. The program meets an unmet market need for a very high-quality program that allows students to improve their undergraduate science GPA and/or to take courses which they did not take at the undergraduate level. In order for courses to count toward the undergraduate GPA required for medical school consideration, these courses cannot be taken in the context of a graduate degree (e.g. a master's degree), which is why the program is offered as a non-degree, certificate program. The program is flexible to individual academic needs and provides students the unique option of taking undergraduate and graduate courses.

There are several other distinctive features of the PRIME program. In addition to a range of courses customized to fill gaps in the individual student's past experiences, students will get key experiences that they may not have had the opportunity to experience in prior academic settings, including: clinically-based learning experiences, specialized MCAT preparation, and a dedicated program director who will meet regularly one-on-one with students to advise them in what they need to do to be successful. Students will participate in a monthly seminar series intended to prepare students to be successful in the medical school application and interview process. Select students will also be eligible for an interview for CWRU SOM's MD program, and in time, other MD programs. Students will also have optional opportunities to shadow clinical providers, attend grand rounds, and participate in research.

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? X Yes _____ No

If yes, which departments? CAS: Anthropology, Biology, Chemistry, Classics, Dance, History, Political Sciences, Psychological Sciences, Religious Studies, Sociology.

Contact person/committee: Jill Korbin, Associate Dean, CAS and Professor of Anthropology

SIGNATURES:
Department Curriculum Chair(s)/Program Directors: Jill E. Korbin DATE 3-20-17
Department Chair: See attached letters of support
College/School Curriculum Committee Chair: Bob Greene/CAS 3-21-17
College/School Dean(s): C. W. C. Rozek/CAS 3-24-17
FSCUE Curriculum Subcommittee Chair: _____

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

PRIME PROPOSAL

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Case Western Reserve University

PRIME (Post-baccalaureate Readiness Instruction for bioMedical Education)

Pre-Medical Post-Baccalaureate Certificate Program

1. Introduction

The Case Western Reserve University (CWRU) School of Medicine (SOM) and College of Arts and Sciences (CAS) jointly propose a distinctive pre-medical, post-baccalaureate, non-degree certificate program. The PRIME (Post-baccalaureate Readiness Instruction for bioMedical Education) program will award a certificate upon successful completion of at least 24 graded credits.

The PRIME program is designed to qualify and prepare post-baccalaureate students for admission to well-ranked medical schools. The program meets an unmet market need for a very high-quality program that allows students to improve their undergraduate science GPA and/or to take courses which they did not take at the undergraduate level. In order for courses to count toward the undergraduate GPA required for medical school consideration, these courses cannot be taken in the context of a graduate degree (e.g. a master's degree), which is why the program is offered as a non-degree, certificate program. The program is flexible to individual academic needs and provides students the unique option of taking undergraduate and graduate courses.

There are several other distinctive features of the PRIME program. In addition to a range of courses customized to fill gaps in the individual student's past experiences, students will get key experiences that they may not have had the opportunity to experience in prior academic settings, including: clinically-based learning experiences, specialized MCAT preparation, and a dedicated program director who will meet regularly one-on-one with students to advise them in what they need to do to be successful. Students will participate in a monthly seminar series intended to prepare students to be successful in the medical school application and interview process. Select students will also be eligible for an interview for CWRU SOM's MD program, and in time, other MD programs. Students will also have optional opportunities to shadow clinical providers, attend grand rounds, and participate in research.

A key curricular feature of this program is a series of two pre-medical Clinical Inquiry (IQ) courses, which build on the SOM's well known and respected curriculum based in clinical inquiry. This problem-based learning method centers on the use of patient cases to learn medical topics and is currently being adopted by medical schools throughout the country. The SOM has recently built faculty expertise in this area and have developed pre-medical Clinical Inquiry (IQ) courses (MGRD 310 and 311), which are led by Dr. Cheryl Thompson, Assistant Professor at the SOM, and facilitated by SOM post-doctoral fellows. These courses are designed to give students exposure to medical terminology and clinical reasoning. Importantly, the IQ method encourages professional growth via self-reflection. Indeed, the maturity and professional growth that develops through the IQ model will serve students well in medical school and other future professional endeavors as well.

A second key curricular feature of this program is a specialized Medical College Admissions Test (MCAT) preparatory course developed by the College of Arts and Sciences. This course is designed to comprehensively review all MCAT content areas, as well as testing methods, and hone the skills students need to improve performance on the MCAT. This course will have a faculty coordinator and will be team taught so as to include faculty expertise from the departments of biochemistry; biology; chemistry; mathematics, applied mathematics, and statistics; physics; psychological sciences; and sociology. PRIME program students will have first priority for course registration, but is not required for the PRIME certificate. The course will also be available to current CWRU undergraduate and graduate students.

An important and distinctive feature of the PRIME program is a dedicated full-time program director with expertise in advising students on how to better qualify their academic record and gain admission to well-ranked medical schools. Getting into medical school is incredibly competitive. Further, the intricacies of what medical schools are looking for are complicated and change with time. While aware of aspects of the process, including writing letters of recommendation, most faculty are not experts in the intricacies of the medical school admission process. The program director will be responsible for meeting regularly with each student to ensure they are taking the courses that will best prepare them for medical school admission. The program director will also be responsible for working with the students to maximize success at completing the program, as well as writing individualized letters of recommendation that demonstrate specific knowledge of each student for medical school applications. The program director will also facilitate experiential learning (e.g. shadowing, research participation) that will enhance medical school consideration. In order to minimize burden on campus faculty with regard to shadowing, in particular, the program director will reach out to community physicians to help students find community shadowing opportunities. Thus, the dedicated advisor is a critical feature of the PRIME program that many programs do not offer and that has the potential for making the difference in getting into medical school or not. At this time, it is not expected that the program director will also be teaching, but this could be explored in the future.

This program was designed for students wishing to pursue further education to make their application into an MD or DO program more competitive. Specifically, this program is geared toward two types of future medical students. The first is “career changers” or students who have not completed the course requirements for medical school consideration. The second type is “academic enhancers” or students who did not get a high enough GPA in their undergraduate science coursework to be competitive for medical school admission or their medical school of choice (typically a 3.4-3.6, and sometimes higher). These students will “enhance” their academic record by improving their undergraduate science GPA and/or demonstrate additional academic rigor in upper-division courses.

Students who successfully complete the “career changer” track of this program with an overall undergraduate GPA of 3.6 and a GPA of 3.8 or greater in the PRIME program and who have not yet taken or have achieved a certain threshold on the MCAT will be offered an interview for CWRU’s SOM MD program. The minimum MCAT score will be set annually by the program director in consultation with the PRIME steering committee and the SOM Admissions. Other PRIME students will be considered on an individual basis. Eligible students will consult with the program director on goals before making a decision regarding if they should take the MCAT

or not, as they would not be able to apply to other medical school programs without taking the MCAT. The PRIME program director will work to establish additional opportunities along these lines to interview with external medical schools.

There are a number of master's degree programs currently offered through the SOM and CAS that attract pre-medical students seeking to improve their applications to medical school. Some students are not applying to these programs because they are specifically looking for undergraduate course-based programs or because the students lack the appropriate undergraduate pre-requisites for a master's program. The PRIME program is distinct from these programs with its undergraduate course base and fills a need that cannot be met by the current master's level offerings in the SOM or CAS. This PRIME program is intended to complement these offerings, not compete with them.

This program anticipates students to begin matriculating in the Fall 2017 semester.

This program involves a number of departments within the School of Medicine and College of Arts and Sciences.

2. Proposed Curriculum

This is a one- to two-year program, depending on the needs and interests of each student. Students must take a minimum of 24 graded credits, including the IQ classes (MGRD 310 and 311). Up to 6 of these overall 24 credits may be transferred from another university if taken as a post-baccalaureate non-degree student per standard CWRU policies.

Depending on a student's prior coursework and grades, they may also need to take additional courses to be adequately qualified for medical school admissions and prepared for their program of interest. As such, some programs of study may require up to 60 credits. A list of required courses for medical school admission is included in the following Section C. Required Medical School Coursework.

Importantly, this program is designed to be flexible to meet students' needs. Students will work closely the program director to select coursework best suited to the student's needs in terms of medical school requirements, but also preparation for the program of their choice and/or to best improve their GPA. Sample programs of study are provided in Appendix B. Course descriptions for all required coursework are in Appendix C. Course descriptions for all elective coursework are in Appendix D.

Students will be recommended to regularly shadow health care professionals if they lack experience in this area, and the program director will reach out to establish partnerships with community providers to help facilitate these experiences. Similarly, students lacking additional experiences will be strongly encouraged to work with CWRU research faculty or to find experiences off-campus. An existing internship and exposure program run through the School of Medicine Graduate Education Office actively works to find many different types of off-campus experiences for students, including volunteer positions to aid in credentials to get into professional school. One or both of these components may be part of each student's individualized program of study. Connections with clinical and/or research faculty will be

facilitated by the program director. The program director will work with the students to identify such opportunities and advise students on best practices depending on the position and environment. Students are also encouraged to independently identify opportunities to shadow or participate in research.

a. Admission Requirements

1. Baccalaureate degree from an accredited College or University that has been conferred prior to matriculation
2. Cumulative GPA of 3.4 or higher and undergraduate science GPA of 3.4 or higher. Consideration will be given to students with lower GPAs in special circumstances
3. Demonstrated commitment to understanding and serving the needs of others through both past *and* current volunteer activities and/or community service
4. Demonstrated interest in medicine through past or current employment and/or volunteer activities

Applications for admission to the PRIME program will be received the CWRU School of Graduate Studies. Admission decisions will be made by a PRIME program admissions committee. This committee will be chaired by the program director and will include faculty from both the SOM and the CAS, who may or may not also serve on the steering committee. Any potential candidate deemed appropriate will be interviewed by at least one admission committee member prior to an admission decision being made. Interviews will make sure the potential student understands what they would need to do in order to be successful (i.e. get into medical school) upon program completion. The interviews will also help assess the ability of the student to communicate effectively and personally (which is essential for physicians and is evaluated when interviewing for medical school).

Applications received by April 1st will receive full consideration. Applications received after this date will be accepted on a rolling basis per availability in the program. Students may start in any semester.

b. Tracks

Career Changer Track

This track is designed for students who have not taken all the pre-requisite courses for medical school, typically due to a career change or change in post-graduation plans. In general, all students must take 16 specific natural science, social science, and mathematics courses (55 credits) as a baseline requirement for medical school admissions. A list of required courses is included in the following Section C. Required Medical School Coursework. As part of the PRIME program, students must complete all of the courses required for medical school admission not previously taken, in addition to the clinical inquiry (IQ) classes (MGRD 310 and 311), before the certificate will be awarded. As such, depending on student needs, programs of study could range from 24 credits to up to 60 credits. Beyond the required courses, students may also elect to take upper-level undergraduate courses or graduate courses to demonstrate additional academic rigor. A list of elective courses is included in the following Section D. Elective Courses.

Academic Enhancement Track

This track is designed for students who have taken all the pre-requisite classes for medical school consideration but did not get a strong enough GPA to make them competitive for medical school admission or their medical school of choice. Students in this track are still required to complete at least 24 graded credits in order to earn the certificate, including the clinical inquiry (IQ) classes (MGRD 310 and 311). Beyond the courses required for medical school admission, students may also elect to take upper-level undergraduate courses or graduate courses to demonstrate additional academic rigor. A list of elective courses is included in the following Section D. Elective Courses. Students may also elect to retake specific, required undergraduate courses for which they did not receive at least a B. It is important to note that courses can be repeated if the student wishes to improve their grade. However, taking the same course will result in an average overall grade for that course counting as their grade (that is, the first grade is not cancelled out). Therefore, students with As, and sometimes Bs, in these key required courses are likely to be encouraged to take more advanced course electives.

Our goal is to help students improve their GPA to make them competitive for admission to well-ranked medical schools (typically 3.5-3.6 and sometimes higher).

Since the actual amount of the GPA that can be improved through this program is relatively small, as the coursework will represent a relatively small fraction of their overall undergraduate coursework, their plan for courses is very important. For example, a student who has completed their undergraduate work with 80 science credits and 30 non-science credits with a science GPA of 3.4 and an overall GPA of 3.4 wouldn't be particularly competitive. However, if they take an additional 40 science credits in this program, and get a 3.8 GPA, they will be able to raise their science GPA to 3.53 and their overall GPA to 3.51, as well as to demonstrate a continued trend toward improved academic performance. Of course, taking more courses with has the potential to improve this even more. Further, targeted re-taking of classes with poor grades may help improve these grades and could have a bigger impact. Although a relatively small increment, this jump, combined with a hopefully significantly improved MCAT score and additional program experiences, would position the student to be much more competitive for a top-tier medical school. All students will meet regularly with the program director for guidance on a program of study that will best improve their chances for admission to well-ranked medical school.

c. Required Medical School Coursework

Students are required to complete a minimum of 24 graded credits to obtain the certificate. However, some students will need to take more than 24 credits in order to meet other program and medical school admissions requirements. Some students may also elect to take additional credits in order or further raise their undergraduate/undergraduate science GPA or demonstrate academic rigor in advanced undergraduate or graduate courses.

All students are required to take:

- MGRD 310 – Introduction to Clinical Inquiry I – 3 credits (See Section E.)
- MGRD 311 – Introduction to Clinical Inquiry II – 3 credits (See Section E.)

The Clinical Inquiry (IQ) courses cannot be waived as they are a key feature of the program. Not only will they provide a solid foundation, but the small group bonding provides the basis for professional development and peer support that is important for students as they go through the long and demanding process of studying for the MCAT and preparing for and applying to professional programs.

To complete the program and earn the certificate, all students must also complete or have previously completed the 16 undergraduate courses (55 credits) in the natural sciences, mathematics, and social sciences that are generally required for medical school consideration. These courses are primarily offered in the College of Arts and Sciences.

- BIOC 307 – General Biochemistry
- BIOL 214 – Genes, Evolution and Ecology + BIOL 214L Lab
- BIOL 215 – Cells and Proteins + BIOL 215L Lab
 - OR BIOL 216 – Development and Physiology + BIOL 216L Lab
- CHEM 105 – Principles of Chemistry I
- CHEM 106 – Principles of Chemistry II
- CHEM 113 -- Principles of Chemistry Lab
- CHEM 223 – Introductory Organic Chemistry
- CHEM 224 – Introductory Organic Chemistry II
- CHEM 233 – Introductory Organic Chemistry Lab I
- CHEM 234 – Introductory Organic Chemistry Lab II
- MATH 125 – Math/Calculus I
- MATH 126 – Math/Calculus II
 - OR STAT 201 – Statistics
- PHYS 115 – Introductory Physics + PHYS 115L Lab
- PHYS 116 – Introductory Physics II + PHYS 116L Lab
- PSCL 101 – General Psychology I
- SOCI 101 – Introduction to Sociology

Students may have completed some of these required courses prior to the start of this program and thus the students would be eligible for exemption from taking these courses for the certificate. Depending on course grades, students, with approval the program director, may waive the required courses. Students may also elect to retake these courses for reference and/or to improve their undergraduate GPA. Course descriptions for all required coursework are in Appendix C.

For students who did not complete the required courses, they must complete them as part of the program requirements.

d. Elective Coursework

In consultation with the program director, students will develop the best program of study for their needs. Typically, if a student has already taken the medical school pre-requisites, but needs to improve their overall undergraduate GPA, taking upper level undergraduate courses, such as those listed below, would show more rigor compared to retaking lower level courses. With successful grades, a student's undergraduate GPA will also improve.

Some students may also seek to take graduate coursework based on general interest and to demonstrate academic rigor. Further, some students may also have interest in taking other courses based on general interest and desire to improve technical skills (such as writing or language skills). Students may take additional elective coursework across the university with program director and instructor approval.

PRIME program course elective currently include the following. Additional courses may be approved once the program is in place through regular curricular processes.

School of Medicine

Courses that would count toward their science GPA:

- ANAT 312 Basic Histology
- ANAT 391 Embryology
- ANTH 215 Medical Anthropology
- BETH 271 Bioethics: Dilemmas
- BIOC 308 Molecular Biology
- BIOC 312 Proteins and Enzymes
- BIOC 334 Structural Biology
- BIOC 354 Biochemistry and Biology of RNA
- EPBI 440 Intro to Population Health
- NTRN 201 Nutrition
- NTRN 359 Diabetes Prevention and Mgt.
- NTRN 363 Human Nutrition I: Energy, Protein, Minerals
- NTRN 364 Human Nutrition II: Vitamins
- PATH 316 Fundamental Immunology
- PHRM 309 Principles of Pharmacology
- PHRM 315 Nuclear Receptors in Health and Disease

College of Arts and Sciences

ANTHROPOLOGY

- ANTH 402 Darwinian Medicine
- ANTH 406 The Anthropology of Childhood and the Family
- ANTH 423 AIDS: Epidemiology, Biology, and Culture
- ANTH 426 Power, Illness, and Inequality: The Political Economy of Health
- ANTH 428 Medical Anthropology and Public Health
- ANTH 435 Illegal Drugs and Society
- ANTH 438 Maternal Health: Anthropological Perspectives on Reproductive Practices and Health Policy
- ANTH 451 Topics in International Health
- ANTH 454 Health and Healing in East Asia
- ANTH 459 Introduction to International Health
- ANTH 460 Global Politics of Fertility, Family Planning, and Population Control
- ANTH 461 Urban Health
- ANTH 466 Population Change: Problems and Solutions

- ANTH 467 Topics in Evolutionary Biology
- ANTH 476 Topics in the Anthropology of Health and Medicine

BIOLOGY

- BIOL 301/401 Biotechnology Laboratory
- BIOL 302 Human Learning and the Brain
- BIOL 333 The Human Microbiome
- BIOL 340 Human Physiology
- BIOL 346 Human Anatomy
- BIOL 416 Fundamental Immunology
- BIOL 417 Cytokines: Function, Structure, and Signaling
- BIOL 424 Introduction to Stem Cell Biology
- BIOL 427 Functional Genomics
- BIOL 342/442 Parasitology
- BIOL 343/443 Microbiology
- BIOL 352/452 Ecology and Evolution of Infectious Diseases
- BIOL 362/462 Principles of Developmental Biology
- BIOL 363/463 Experimental Developmental Biology
- BIOL 365/465 Evo-Devo: Evolution of Body Plans
- BIOL 373/473 Introduction to Neurobiology
- BIOL 374/474 Neurobiology of Behavior

CHEMISTRY

- CHEM 328/428 Biochemistry
- CHEM 329/429 Chemical Aspects of Living Systems
- CHEM 306 Lecture Introductory Physical Chemistry
- CHEM 306 Lab Introductory Physical Chemistry Lab
- CHEM 333 Medicinal Chemistry and Drug Development

CLASSICS

- CLSC 295A Greek and Latin Elements in English
- CLSC 295B ADV Elements in English: Biomed Terminology

DANCE

- DANC 445 Kinesiology for Dance
- DANC 446 Topics in Dance Medicine, Science and Wellness

HISTORY

- HSTY 241: Inventing Public Health
- HSTY 373/473: Women and Medicine in the United States
- HSTY 395/495: History of Medicine

POLITICAL SCIENCE

- POSC 483 Health Policy and Politics in the United States

PSYCHOLOGICAL SCIENCES

- PSCL 230 Child Psychology

- PSCL 317 Health Psychology
- PSCL 321 Abnormal Psychology
- PSCL 352 Physiological Psychology
- PSCL 344 Developmental Psychopathology
- PSCL 369 Adult Development and Aging
- COSI 101 Introduction to Health Communication
- COSI 109 Introduction to Communication
- COSI 340 Theories of Health Communication
- COSI 200 Interpersonal Communication
- COSI 260 Multicultural Aspects of Human Communication
- COSI 280 Organizational Communication
- COSI 332 Persuasion
- COSI 345 Communication and Aging

RELIGIOUS STUDIES

- RLGX XXX Health, Body and Sexuality in Chinese Religions*

SOCIOLOGY

- SOCI 344 Health Disparities
- SOCI 275 Lives in Medicine: Becoming and Being a Physician
- SOCI 365 Health Care Delivery
- SOCI 311 Health, Illness and Social Behavior
- SOCI 345 Sociology of Mental Illness
- SOCI 364 Disability and Society
- SOCI 264 Body, Culture and Disability
- SOCI 361 The Life Course
- SOCI 443 Medical Sociology

INTERDISCIPLINARY

- XXXX 301 Medical College Admissions Test Prep*
- XXXX 302 Medical College Admissions Test Prep*

*These courses are in the process of being developed.

Course descriptions for all CAS elective coursework are in Appendix D.

e. Clinical Inquiry Group Experience

Students are required to take two semesters of problem-based Clinical Inquiry (IQ) coursework (MGRD 310 and 311). Groups of ~9 students will meet two times a week (for three hours total) and will discuss a patient case that was introduced to them in the previous class. Students will be expected to research the case prior to class and come prepared to discuss concepts introduced in the case, both in general and specific to the patient. A key feature of this class, like the SOM IQ groups, is self-reflection and professional growth. Grading will be based on content, participation, and professional behavior. Concepts to be introduced include, but are not limited to:

1. Bioethical and social science concepts, for example

- Doctor-patient relationship
 - Patient privacy
 - Ethics in genetics
2. Understanding basic biomedical research concepts, for example
 - Study design
 - Understanding strengths and limitations of studies
 - Statistical analysis
 3. Public Health, including
 - Epidemiology
 - Health disparities and implicit bias
 4. Professional behaviors, including
 - Ability to give and receive constructive criticism
 - Identifying personal strengths and weaknesses
 - Improving from feedback
 - Self-reflection
 5. Social Determinants of Health
 - Culture and health
 - Contextual factors

Importantly, these courses will integrate knowledge being introduced in basic science courses to reinforce key MCAT knowledge.

3. Faculty and Department information

This program will be led by a program director along with a steering committee jointly comprised of members of the School of Medicine and the College of Arts and Sciences. This steering committee will ensure program success and guarantee continuity in the event of leadership changes. The steering committee will be charged with establishing an evaluation component for the program to measure:

- Program interest/demand as indicated by quantity and quality of applications
- Student engagement and satisfaction
- Medical school admissions outcomes
- Program curricular content
- Program operations

The steering committee will also be consulted should any issues arise.

The steering committee will be co-chaired by Cheryl Thompson, PhD, Assistant Professor, Department of Nutrition and Director of Master's Programs for the School of Medicine and Jill Korbin, PhD, Professor of Anthropology and Associate Dean of the College of Arts and Sciences. The steering committee will also consist of the following members (to be replaced as needed with appropriate balanced SOM and CAS representation):

Paul MacDonald, PhD, Associate Dean of Graduate Studies
 Steven Scherger, PhD, Director of Health Career Advising, Undergraduate Studies
 TBN, CAS representative

TBN, CAS representative
Henry Ng, MD, Assistant Dean of Admissions

4. Evidence of need

a. Student Demand

This program was designed for students wishing to pursue further education to make their application into an MD or DO program more competitive. Specifically, this program is geared toward two types of future medical students. The first is “career changers” or students who have not completed the course requirements for medical school consideration. The second type is “academic enhancers” or students who did not get a high enough GPA in their undergraduate science coursework to be competitive for medical school admission or their medical school of choice. Although GPA’s required for medical school admission varies widely, and is not the only factor in medical school admissions, data from the Association of American Medical Colleges (AAMC) shows that the success rate for a student in the 3.00-3.19 range is only 16%, whereas the success rate jumps to 35% for those students with at least a 3.4 and 51% with a 3.6 (underrepresented minority student acceptance rates at a given GPAs are, typically, slightly higher).

The SOM has received several inquiries for pre-medical post-baccalaureate programs that include undergraduate coursework. These requests were both from students who did not take all the required courses for entry to medical school (“career changers” who had other plans while undergraduates) and from students whose undergraduate GPA, particularly in science courses, is not strong enough. We expect the latter group to make up a majority of the students in this program, given the competitiveness of medical school admissions.

At the end of the 2014-15 academic year, the SOM conducted a survey of students graduating from their master degree programs, which shed light on program elements that are important for students. Increased advising on how to get into medical school, problem-based learning experiences, linkage with the CWRU SOM admissions program, and opportunities for clinical experiences were identified as areas of improvement for existing SOM master’s programs among students wishing to go on to medical school. Current undergraduate students at and recent alumni of the College of Arts and Sciences have also made similar inquiries, including the request for specialized MCAT preparation. This program was designed to address these needs. Thus, we expect the demand for this program to be high and competitive for the 50 students we accept each year.

b. Competing Programs

Nationally, there are several similar post-baccalaureate certificate programs tailored to these types of students and featuring predominantly undergraduate courses. Indeed, the Association of American Medical Colleges (AAMC) website lists 82 programs that feature undergraduate courses and are designed for career changers and academic enhancers (<https://apps.aamc.org/postbac/#/index>). However, there is only one program in Ohio, at

Cleveland State University, which is both amenable to career changers and based in undergraduate-level coursework. The most highly competitive national undergraduate-course certificate post-baccalaureate programs are summarized in Appendix A. According to their data reported online, these programs typically have success rates of medical school acceptances > 90%.

Existing post-baccalaureate and master's degree programs outside the University attract thousands of students per year. However, many students have found that these programs designed to improve credentials for medical school are not suited to their needs, typically because they need to improve their undergraduate GPA. This program fills a distinct unmet need within the university for an undergraduate-course based post-baccalaureate program for pre-med students. When recruiting for the post-bac student, we will explain how each of these programs are distinct and provide resources to help the students pick the program that best suits their needs.

This certificate program is comprehensive enough to provide exposure to all the required undergraduate science and mathematics coursework for a student on the "career changer" or "academic enhancer" track.

With today's competitiveness to get into medical school, programs that offer one-on-one advising on getting into medical school and customizable programs based on prior experiences and courses are extremely helpful in setting oneself apart. Only a select few programs offer these additional experiences. Given our highly ranked School of Medicine and College of Arts and Sciences, faculty expertise in problem-based learning instruction and MCAT content and testing methods, tier-I research institutional status, and affiliation with world class hospitals, we are uniquely poised to offer a strong program that will attract the best students.

5. Projected enrollment

We anticipate enrolling up to 50 students/year by year three of the program. We feel strongly that the biggest component of this program is the interactive advising on the competitive, complicated, and changing medical school admissions process. Thus, we would like to limit enrollment to around 50 students/year to allow for adequate mentoring by the program director. We anticipate approximately 20 students in year 1, 35 in year 2, and 50 in year 3.

Given that advising is a key component of this program, enrollment will be capped at around 50 students per year. It is expected that many students will complete the program in 12 months, but some students will take up to two years. Should demand from high-quality students be high enough to warrant hiring a full time advisor to work with the program director, if sufficient faculty are available to advise and both schools agree, we will re-evaluate existing course capacities and resources and increase student enrollment. This will be evaluated once the program has been established. Drs. Thompson and Korbin, along with the steering committee, will continue to be actively involved in this program and assist the new program director as needed to ensure success.

6. Resource availability

Case Western Reserve University's School of Medicine is consistently ranked among the top schools of medicine in the country. Importantly, our medical school curriculum is well known for our exceptional clinical inquiry group learning modes. This small group problem-based learning model of instruction has served as an inspiration to other medical schools around the country. With many schools moving toward this type of programming, prior experience in an Clinical Inquiry (IQ) environment is a plus for medical school admissions committees. This program capitalizes on this experience and resources available within the CWRU SOM and features a similar educational experience.

The College of Arts and Sciences is the vibrant and essential core of Case Western Reserve University. CAS provides all of the roughly 5000 undergraduate students of Case Western Reserve with foundational and disciplinary training. Over 40% of undergraduates with declared majors are pursuing their academic careers in the College. It is CAS' mission to create and educate across the humanities, natural sciences and mathematics, performing arts, and social and behavioral sciences. We are dedicated to advancing knowledge through research and creative endeavors; to developing skilled and informed citizens, scholars, and researchers through undergraduate and graduate education; and to serving the University and local and global communities.

In addition to outstanding educational programs, CWRU's research ranks high among the elite universities in the country. Further, with affiliations with the Cleveland Clinic, University Hospitals, MetroHealth, and the Veteran Affairs Medical Center, the PRIME program offers outstanding opportunities for clinical immersion in a variety of settings and populations.

7. Expense and Revenue

This program will require a full-time director who will have 100% of their time committed to the program. The director will advise students on requirements and procedures for getting into the program of their choosing. Students are expected to meet multiple times per month with the program director to ensure they are on track both with certificate completion, as well as making sure they are setting themselves up to be successful and competitive in the medical school admissions process. To provide the best experiences and outcomes for the students, the program director will be responsible to stay current on medical school program entrance requirements and be able to fully advise students.

This program will be offered by the SOM and the CAS. Program marketing, recruitment, and student support will be administered by the School of Medicine Graduate Education Office (GEO) consistent with other SOM educational programs under the purview of the SOM Graduate Education Office. Applications for admission to the PRIME program will be received through the CWRU School of Graduate Studies.

Tuition for this program will be charged on a per hour basis and students will be charged the graduate tuition rate. The SOM and CAS will equally share initial program startup expenses. Ongoing operational expenses will also be shared equally. The tuition revenue will be allocated

to the management center teaching the course up to the first 36 students annually. Tuition revenue will be shared equally for students beyond this headcount. The agreement will serve for the first two years and will then be re-evaluated. The SOM and CAS seek to achieve an operational state in which program instruction is equally shared. Program startup expenses are estimated to be \$67,000 and will be equally shared by the SOM and the CAS. Annual program operational expenses are estimated to range between \$166K and \$200K annually based on the number of students enrolled.

Please see Appendix E for a memorandum of understanding between the CAS and SOM that details expense and revenue sharing.

8. Required University and School Resources

This program will not require any additional library resources. Students will be strongly encouraged to shadow physicians and/or work in research labs, as space is available. However, this is not a required component of this program.

9. Program completion requirements

Successful completion of the program will be defined as completing all the graded coursework with a GPA of 3.5 or higher and passing all non-graded components of the program.

Appendix A: Existing Highly Competitive Post-Baccalaureate Certificate Programs

University	Program/Curriculum	Duration	Tuition	Number of Students
Washington University, St. Louis, MO	Core medical school courses pick and choose as student needs. 30 credits required. Evening and part-time options available.	2 years, can complete in 12 months	About \$25,500, depending on courses and number of credits taken	Unclear
Bryn Mawr, Bryn Mawr, PA	Biology, physics, chemistry and organic chemistry MCAT preparation Community Service	12 month	About \$31,000, depending on units taken	85/year
Northwestern University, Chicago, IL	7 Biology, 6 chemistry (4 with labs) and 3 physics classes (all with labs)	Unclear	Around \$85,000	Unclear
University of Virginia, Charlottesville, VA	2 chemistry, 2 biology, 2 organic chemistry, 2 physics Shadowing experiences MCAT preparation materials	1 year Career changers only	\$27,816 in state, \$32,996 out of state	Unclear
University of Pennsylvania, Philadelphia, PA	Required courses for medical, dental or veterinary school MCAT preparation assistance	1 year, or 2 years part-time	Unclear	Unclear, large
University of Southern California, Los Angeles, CA	2 chemistry, 2 biology, 2 organic chemistry, 2 physics Clinical and/or	2 years	\$59,976	45-50/year

	research exposure			
University of Michigan, Ann Arbor, MI	2 chemistry, 2 biology, 2 organic chemistry, 2 physics MCAT Prep Experiential learning Foundations for Aspiring Physicians	14 months	\$30,000 for MI residents	“small cohort”
Johns Hopkins University, Baltimore, MD	Clinical Medicine MCAT Prep Flexible program to take needed courses	9-14 months	\$36,500 for Fall and Spring, \$795/credit over summer	25-30/year

Appendix B: Sample program course structures

Table 1: Sample program course structure for career changer track to medical school, did not take many/any courses previously

*****Note that this is just one example, all plans will be customized to the student**

Year 1 Fall	<p>CHEM 105 – Principles of Chemistry I – 3 credits CHEM 113 -- Principles of Chemistry Laboratory – 2 credits BIOL 214 – Genes, Evolution and Ecology + BIOL 214L – 4 credits</p> <p>SOCI 101 – Introduction to Sociology -- 3 credits</p> <p>MGRD 310 - Clinical Inquiry (IQ) I – 3 credits</p> <p>Physician shadowing</p> <p>Seminar series</p>
Year 1 Spring	<p>CHEM 106 – Principles of Chemistry II – 3 credits BIOL 215 – Cells and Proteins + BIOL 215L – 5 credits</p> <p>OR BIOL 216 – Development and Physiology + BIOL 216L</p> <p>PSCL 101 -- General Psychology I – 3 credits</p> <p>MGRD 311 - Clinical Inquiry (IQ) II – 3 credits</p> <p>Physician shadowing</p> <p>Seminar series</p>
Year 1 Summer	<p>CHEM 223 – Introductory Organic Chemistry I – 3 credits</p> <p>CHEM 233 – Introductory Organic Chemistry Laboratory I– 2 credits</p> <p>CHEM 224 – Introductory Organic Chemistry II – 3 credits</p> <p>CHEM 234 – Introductory Organic Chemistry Laboratory II– 2 credits</p> <p>Physician shadowing</p>
Year 2 Fall	<p>PHYS 115 – Introductory Physics I – 4 credits STAT 201 – Statistics – 3 credits</p> <p>BIOC 307 – General Biochemistry – 4 credits</p> <p>Physician shadowing</p>

	Seminar series
Year 2 Spring	<p>PHYS 116 – Introductory Physics II – 4 credits</p> <p>MCAT 301* – Medical College Admissions Test Preparation – 3 credits</p> <p>MCAT 302* - Medical College Admissions Test Preparation – 3 credits</p> <p>Elective</p> <p>Physician shadowing</p> <p>Seminar series</p>
Year 2 Summer	<p>Take MCAT</p> <p>Apply to Medical School</p>

***If this course is offered in summer, the student can take that summer just prior to MCAT**

Table 2: Sample program course structure for academic enhancement track who took all required courses

Year 1 Summer	<p>NTRN 362 – Exercise Physiology and Macronutrient Metabolism – 3 credits</p> <p>MCAT 301 – Medical College Admissions Test Preparation – 3 credits</p> <p>MCAT 302 - Medical College Admissions Test Preparation – 3 credits</p> <p>Physician shadowing</p>
Year 1 Fall	<p>MGRD 310 - Clinical Inquiry (IQ) I – 3 credits</p> <p>BETH 271 – Bioethics – 3 credits</p> <p>PHRM 309 – Principals of Pharmacology – 3 credits</p> <p>NTRN 363 – Human Nutrition I – 3 credits</p> <p>Physician shadowing</p> <p>Seminar series</p>
Year 1 Spring	<p>MGRD 311 - Clinical Inquiry (IQ)II – 3 credits</p> <p>BIOC 334 – Structural Biology – 3 credits</p> <p>BIOC 354 – Biochemistry and Biology of RNA – 3 credits</p> <p>ANAT 312 – Basic Histology – 3 credits</p> <p>Physician shadowing</p> <p>Seminar series</p>
Year 1 Summer	<p>Take MCAT in June, Apply to Medical School</p>

Appendix C: Required Course Descriptions

CHEM 105. Principles of Chemistry I. 3 Units.

Atomic structure; thermochemistry; periodicity, bonding and molecular structure; intermolecular forces; properties of solids; liquids, gases and solutions. Recommended preparation: One year of high school chemistry.

CHEM 106. Principles of Chemistry II. 3 Units.

Thermodynamics, chemical equilibrium; acid/base chemistry; oxidation and reduction; kinetics; spectroscopy; introduction to nuclear, organic, inorganic, and polymer chemistry.
Prereq: CHEM 105 or equivalent.

CHEM 113. Principles of Chemistry Laboratory. 2 Units.

A one semester laboratory based on quantitative chemical measurements. Experiments include analysis, synthesis and characterization, thermochemistry and chemical kinetics. Computer analysis of data is a key part of all experiments. Prereq or Coreq: CHEM 105 or CHEM 106 or CHEM 111 or ENGR 145.

PHYS 115. Introductory Physics I. 4 Units.

First part of a two-semester sequence directed primarily towards students working towards a B.A. in science, with an emphasis on the life sciences. Kinematics; Newton's laws; gravitation; simple harmonic motion; mechanical waves; fluids; ideal gas law; heat and the first and second laws of thermodynamics. This course has a laboratory component.

PHYS 116. Introductory Physics II. 4 Units.

Electrostatics, Coulomb's law, Gauss's law; capacitance and resistance; DC circuits; magnetic fields; electromagnetic induction; RC and RL circuits; light; geometrical optics; interference and diffraction; special relativity; introduction to quantum mechanics; elements of atomic, nuclear and particle physics. This course has a laboratory component. Prereq: PHYS 115.

BIOL 214. Genes, Evolution and Ecology. 3 Units.

First in a series of three courses required of the Biology major. Topics include: biological molecules (focus on DNA and RNA); mitotic and meiotic cell cycles, gene expression, genetics, population genetics, evolution, biological diversity and ecology. Prereq or Coreq: CHEM 105 or CHEM 111.

BIOL 214L. Genes, Evolution and Ecology Lab. 1 Unit.

First in a series of three laboratory courses required of the Biology major. Topics include: biological molecules (with a focus on DNA and RNA); basics of cell structure (with a focus on malaria research); molecular genetics, biotechnology; population genetics and evolution, ecology. Assignments will be in the form of a scientific journal submission. Prereq or Coreq: BIOL 214.

BIOL 215. Cells and Proteins. 3 Units.

Second in a series of three courses required of the Biology major. Topics include: biological molecules (focus on proteins, carbohydrates, and lipids); cell structure (focus on membranes, energy conversion organelles and cytoskeleton); protein structure-function; enzyme kinetics, cellular energetics, and cell communication and motility strategies. Prereq: BIOL 214 and (CHEM 105 or CHEM 111). Prereq or Coreq: CHEM 106 or ENGR 145.

BIOL 215L. Cells and Proteins Laboratory. 1 Unit.

Second in a series of three laboratory courses required of the Biology major. Topics to include: protein structure-function, enzymes kinetics; cell structure; cellular energetics, respiration and photosynthesis. In addition, membrane structure and transport will be covered. Laboratory and discussion sessions offered in alternate weeks. This course is not available for students who have taken BIOL 215 as a 4-credit course. Prereq: BIOL 214L and Prereq or Coreq: BIOL 215.

BIOL 216. Development and Physiology. 3 Units.

This is the final class in the series of three courses required of the Biology major. As with the two previous courses, BIOL 214 and 215, this course is designed to provide an overview of fundamental biological processes. It will examine the complexity of interactions controlling reproduction, development and physiological function in animals. The Developmental Biology section will review topics such as gametogenesis, fertilization, cleavage, gastrulation, the genetic control of development, stem cells and cloning. Main topics included in the Physiology portion consist of: homeostasis, the function of neurons and nervous systems; the major organ systems and processes involved in circulation, excretion, osmoregulation, gas exchange, feeding, digestion, temperature regulation, endocrine function and the immunologic response. There are two instructional modes for this course: lecture mode and hybrid mode. In the lecture mode students attend class for their instruction. In the hybrid mode students watch online lectures from the course instructor and attend one discussion section with the course instructor each week. The online content prepares students for the discussion. Which mode is offered varies depending on the term. Students are made aware of what mode is offered at the time of registration. The total student effort and course content is identical for both instructional modes. Either instructional mode fulfills the BIOL 216 requirement for the BA and BS in Biology. Prereq: BIOL 214.

BIOL 216L. Development and Physiology Lab. 1 Unit.

Third in a series of three laboratory courses required of the Biology major. Students will conduct laboratory experiments designed to provide hands-on, empirical laboratory experience in order to better understand the complex interactions governing the basic physiology and development of organisms. Laboratories and discussion sessions offered in alternate weeks. Prereq: BIOL 214L. Prereq or Coreq: BIOL 216.

CHEM 223. Introductory Organic Chemistry I. 3 Units.

Introductory course for science majors and engineering students. Develops themes of structure and bonding along with elementary reaction mechanisms. Includes treatment of hydrocarbons, alkyl

halides, alcohols, and ethers as well as an introduction to spectroscopy.

Prereq: CHEM 106 or CHEM 111.

CHEM 224. Introductory Organic Chemistry II. 3 Units.

Continues and extends themes of structure and bonding from CHEM 223 and continues spectroscopy and more complex reaction mechanisms. Includes treatment of aromatic rings, carbonyl compounds, amines, and selected special topics. Prereq: CHEM 223 or CHEM 323.

CHEM 233. Introductory Organic Chemistry Laboratory I. 2 Units.

An introductory organic laboratory course emphasizing microscale operations. Synthesis and purification of organic compounds, isolation of natural products, and systematic identification of organic compounds by physical and chemical methods.

Prereq: CHEM 106 or CHEM 111 and CHEM 113 or equivalent.

Coreq: CHEM 223 or CHEM 323.

CHEM 234. Introductory Organic Chemistry Laboratory II. 2 Units.

A continuation of CHEM 233, involving multi-step organic synthesis, peptide synthesis, product purification and analysis using sophisticated analytical techniques such as chromatography and magnetic resonance spectroscopy. Prereq: CHEM 233. Coreq: CHEM 224

BIOC 307. Introduction to Biochemistry: From Molecules To Medical Science. 4 Units.

Overview of the macromolecules and small molecules key to all living systems. Topics include: protein structure and function; enzyme mechanisms, kinetics and regulation; membrane structure and function; bioenergetics; hormone action; intermediary metabolism, including pathways and regulation of carbohydrate, lipid, amino acid, and nucleotide biosynthesis and breakdown. The material is presented to build links to human biology and human disease. One semester of biology is recommended. Offered as BIOC 307, BIOC 407, and BIOL 407.

Prereq: CHEM 223 and CHEM 224.

PSCL 101. General Psychology I. 3 Units.

Methods, research, and theories of psychology. Basic research from such areas as psychophysiology, sensation, perception, development, memory, learning, psychopathology, and social psychology.

SOCI 101. Introduction to Sociology. 3 Units.

This course examines the basic principles that underlie how sociologists look at the world: "The Sociological Imagination". It addresses the basic questions: How is social order possible and how does change occur? The course is designed as a foundation for further study in field of sociology and related disciplines. It introduces the student to the role that culture and social institutions play in modern society and examines important concepts such as socialization, deviance, social control, patterned inequalities and social change. These concepts are discussed in the context of both

contemporary and historical social theories. Additionally, the student will be introduced to the methods of inquiry used by practicing sociologists.

STAT 201. Basic Statistics for Social and Life Sciences. 3 Units.

Designed for undergraduates in the social sciences and life sciences who need to use statistical techniques in their fields. Descriptive statistics, probability models, sampling distributions. Point and confidence interval estimation, hypothesis testing. Elementary regression and analysis of variance. Not for credit toward major or minor in Statistics. Counts for CAS Quantitative Reasoning Requirement.

MGRD 310/410. Introduction to Clinical Inquiry (IQ) I. 3 Units.

This course is the first semester in a two semester sequence designed to introduce pre-allied health students to clinical concepts and integrate concepts from several basic science courses into clinically relevant cases. Class will be divided into small groups of 8-9 students. New concepts include introduction to bioethics, clinical study design and interpretation, epidemiology and doctor-patient communication. Integrated concepts include genetics, bacterial and viral classification and structure, acids and bases and ions in solution. In addition, professional skills will be reinforced, including ability to give and receive constructive criticism, identifying personal strengths and weaknesses and self-reflection. Coreq: BIOL 412, CHEM 105 or CHEM 112

MGRD 311/411. Introduction to Clinical Inquiry (IQ) II. 3 Units.

This course is the second semester in a two semester sequence designed to introduce pre-allied health students to clinical concepts and integrate concepts from several basic science courses into clinically relevant cases. Class will be divided into small groups of 8-9 students. New concepts include introduction to patient privacy, understanding biases in research and health disparities. Integrated concepts include the nervous system, psychological disorders, social interaction and discrimination. In addition, professional skills will be reinforced, including ability to give and receive constructive criticism, identifying personal strengths and weaknesses and self-reflection. Prereq: SOMG 310. Coreq: CHEM 106 or CHEM 113 and PSCL 101.

MATH 125. Mathematics I (4)

Discrete and continuous probability; differential and integral calculus of one variable; graphing, related rates, maxima and minima. Integration techniques, numerical methods, volumes, areas. Applications to the physical, life, and social sciences. Students planning to take more than two semesters of introductory mathematics should take MATH 121. Prereq: Three and one half years of high school mathematics.

MATH 126. Mathematics II (4)

Continuation of MATH 125 covering differential equations, multivariable calculus, discrete methods. Partial derivatives, maxima and minima for functions of two variables, linear regression. Differential equations; first and second order equations, systems, Taylor series methods; Newton's method; difference equations. Prereq: MATH 125.

APPENDIX

(Part 1 of 3)

Approvals for required and/or elective courses from:

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Biology	1
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Physics	11
Psychological Studies	15
Sociology.....	20



Chandel Smith <cms218@case.edu>

Message from Beth and Jill - For Review & Approval: Courses for New Post-Bac, Pre-Med Certificate Program (BIOL)

Chandel Smith <cms218@case.edu>
To: Mark Willis <maw27@case.edu>
Cc: "Korbin, Jill" <jek7@case.edu>, Beth Trecasa <bmt5@case.edu>
Bcc: Jennifer Dyke <jfd11@case.edu>

Tue, Mar 15, 2016 at 10:02 AM

Dear Mark,

This is a follow up to Beth's comments at the last Chair Council meeting concerning a new post-baccalaureate certificate program CAS is developing with the School of Medicine. Because your department teaches some of the required courses, we are writing to get your feedback on including these courses from your department in the proposal. Also, we would like to ask for your suggestions for additional elective courses for this program.

We will have a fuller version of the proposal to send you as soon as it is complete. The program will go through all of the needed approval processes, and so it is important to know if the required courses from your department can be included in the proposal, along with additional electives you might want to offer. A tuition-sharing agreement is being negotiated between the deans so that the efforts of both CAS and the School of Medicine will be compensated fairly.

The program is envisioned to be a joint initiative of CAS and the School of Medicine to qualify and prepare two groups of post-baccalaureate students for medical school admission. These students will be carefully selected for their potential to succeed.

The first group, we call the career changers, will have to complete the courses required for medical school consideration. We anticipate a smaller number of these students, perhaps 5-10 per year, and they would be enrolling in the natural and social science and mathematics courses required for medical school consideration (see attached list of required courses in your department).

The second group are those students who are trying to improve and enhance their records to be more competitive for medical school consideration. This group of students would be enrolling in those required courses in which they needed to improve their grade. In addition, these students would be enrolling in upper division electives to demonstrate their potential in more advanced courses. This group would involve perhaps 35-40 students each year.

Because we have these two groups we are asking for your feedback on both the required courses, and the electives we can offer. Programs of study will be specific to the needs of each student and they will be carefully advised about course selection.

Please see the attached spreadsheet that includes the courses in your department that are required for medical school admission. We've prepared a summary of the course offerings, enrollments, and sections for the past three years based on the information in SIS. Students in the program will only need to take these courses if they have not previously taken them during their baccalaureate program or potentially if they received a C in the course and would like to improve the grade.

Thus far, the suggested elective courses are primarily in the School of Medicine, but we are confident that there are several

courses in the College that would be relevant to a student pursuing admission to a medical school program. We would appreciate a listing of possible electives in your department to include in the proposal. Inclusion on the elective list, of course, does not necessarily mean that students will enroll.

Would you please let us know by **Wednesday, March 23rd**, if there is capacity in the required courses and if you approve their inclusion in the proposal? If there is not capacity, but you otherwise would approve, can you let us know what additional teaching capacity would be necessary?


Would you also please let us know by **Wednesday, March 23rd**, if there are upper-division undergraduate and graduate courses that are health and medicine-related and that you think would be appropriate to include and have capacity for additional students?

At this time, we anticipate the program building up to 50 students a year, with the first cohort entering sometime in 2017. We are very excited about this and think it could grow to become a nationally competitive program.

Please let us know if you have any questions. And thank you in advance for your feedback and guidance.

Jill and Beth

—
Chandel Smith
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 BIOL Enrollment-Capacity Comparisons.xls
134K

APPENDIX D: Required and Elective Course Descriptions and Department Chair Letters of Support

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V		W		X		Y		Z		AA		
																						Enroll*	Cap.**	Enroll*	Cap.**	Enroll*	Cap.**	Enroll*	Cap.**	Enroll*	Cap.**		Enroll*	Cap.**
2	Course	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.
4	BIOL 214	389	999	1	152	120	1	20	40	1	354	589	1	122	120	1	17	40	1	347	589	1	108	120	1									
5	BIOL 214L	21	16-28	18	25	28	3	9	28	1	21	16-28	16	26	28	4	7	28	1	22	16-28	15	22	28	4									
7	BIOL 215	79	100	1	256	999	1	20	25	2	75	100	1	276	999	1	17	25	2	89	100	1	258	382	1									
8	BIOL 215L	20	24	3	11	2-28	18	9	25	2	17	24	3	14	28	18	10	25	2	20	24	3	14	3-28	18									
10	BIOL 216 Lecture	230	589	1	88	100	1	55	30	1	178	589	1	58	96	1	19	30	2	173	589	1	80	96	1									
11	BIOL 216L	18	2-24	9	7	8	4	13	12	1	15	24	8	8	8	4	12	12	1	15	24	9	8	8	4									
12	BIOL 216 Dis													29	38-48	2							40	20	2									

*Enrollment is actual for courses with 1 section and averaged for those with multiple sections. **Capacity relates to the combined enrollment capacity per SIS.



Chandel Smith <cms218@case.edu>

Message from Beth and Jill - For Review & Approval: Courses for New Post-Bac, Pre-Med Certificate Program (BIOL)

Jill E. Korbin <jek7@case.edu>

Tue, Apr 12, 2016 at 12:33 PM

To: Mark Willis <mark.willis@case.edu>, Beth Trecasa <bmt5@case.edu>, Chandel Smith <cms218@case.edu>

Hi Mark. Thanks. To make the proposal as strong as possible, are there any upper division electives in Biology we could include in a list of potential electives? Thinking ahead, enrollment would be based on capacity as it is for other students and tuition will flow according to courses being taught by CAS vs the School of Medicine.

So, we are not asking you to commit to spaces, but a list of courses that would be attractive to these students would be great. I know this is such a busy time of year but if you could get back to us in the coming few days it would be very helpful.

Best, Jill and Beth

On 3/28/2016 10:11 AM, Mark Willis wrote:

Dear Jill,

I just sent the following message to Beth. I realized after I hit the SEND button that your address was not on it.

Sincerely,
Mark

----- Forwarded message -----

From: Mark Willis <mark.willis@case.edu>

Date: Mon, Mar 28, 2016 at 10:09 AM

Subject: Re: Message from Beth and Jill - For Review & Approval: Courses for New Post-Bac, Pre-Med Certificate Program (BIOL)

To: Beth Trecasa <bmt5@case.edu>

Dear Beth and Jill,

The Department of Biology can provide provisional approval to you for the proposed new Post-Bac, Pre-Med Certificate Program between the College of Arts and Sciences and the School of Medicine with the following caveats. We currently have the capacity to fairly easily accept the projected 5-10 new students per year in your group one "career changers" category, depending on the semester that they enroll in the core introductory biology courses (i.e., Biol. 214, 215 and 216). The foreseeable limitation is the spring semester of Biol. 216. The spring version of Biology 216 is currently taught as a hybrid-style course in the large active-learning classroom in Thwing Hall which has a capacity of 96. Adding 5-10 students to our current spring enrollment for this course would closely approach this room limit. The added enrollment from the new post-bac program may not initially be an issue, but we have also recently committed to support a new course in the Department of Nutrition by allowing them to list Biol. 216 as a prerequisite. If their projected enrollment (ca. 20) together with the new pre-bac "career changers" all enrolled in Biol. 216 the same spring semester we would almost certainly cross the threshold for the active learning classroom. In this case the department of biology could be forced to adapt to these larger enrollments by possibly capping class sizes, preferentially enrolling biology majors and minors or requesting additional funds to make the course available to more students. We will monitor our enrollment numbers for Biol. 216 as we go forward and adapt as necessary.

We would expect that the projected 35-40 new students in your group two "GPA improvers" would have their greatest impact on our upper-division electives where we currently have capacity to take more students. However, if significant numbers of these students try to improve their GPAs by enrolling in the introductory-level courses, the scenario outlined above could be even worse. Again, we will be monitoring our enrollment numbers and adapt as necessary as we go forward.

I am happy to answer any specific questions about specific courses that you may have.

Sincerely,
Mark

On Fri, Mar 25, 2016 at 8:18 AM, Beth Trecasa <bmt5@case.edu> wrote:

Hi Mark,

We're circling back to you the message below. Because your department teaches some of the required courses for this program, would you please let us know whether you approve of including the courses and also if you have additional electives?



Chandel Smith <cms218@case.edu>

Message from Beth and Jill - For Review & Approval: Courses for New Post-Bac, Pre-Med Certificate Program (BIOL)

Mark Willis <mark.willis@case.edu>

Wed, Apr 13, 2016 at 11:03 AM

To: "Jill E. Korbin" <jek7@case.edu>

Cc: Beth Trecasa <bmt5@case.edu>, Chandel Smith <cms218@case.edu>

Hi Guys,

The courses that seem to fit a more med school oriented person follow. Some of these may be based in other departments and cross-listed through Biology. I just went down the list in the Bulletin and cut and pasted the course titles that seemed like they would be interesting to a pre-med type.

Good luck.

Sincerely,

Mark

Biol 301/401 Biotechnology laboratory

Biol. 302 Human learning and the brain.

BIOL 333. The Human Microbiome.

BIOL 340. Human Physiology.

BIOL 346. Human Anatomy.

BIOL 416. Fundamental Immunology.

BIOL 417. Cytokines: Function, Structure, and Signaling.

BIOL 424. Introduction to Stem Cell Biology.

BIOL 427. Functional Genomics.

BIOL 342/442. Parasitology.

BIOL 343/443. Microbiology.

BIOL 352/452. Ecology and Evolution of Infectious Diseases.

BIOL 362/462. Principles of Developmental Biology.

BIOL 363/463. Experimental Developmental Biology.

BIOL 365/465. Evo-Devo: Evolution of Body Plans. (This heavily developmental biology)

BIOL 373/473. Introduction to Neurobiology.

BIOL 374/474. Neurobiology of Behavior.

[Quoted text hidden]



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - For Review & Approval: Courses for New Post-Bac, Pre-Med Certificate Program (CHEM)

Chandel Smith <cms218@case.edu>

Tue, Mar 15, 2016 at 10:02 AM

To: "Barkley, Mary" <mdb4@case.edu>

Cc: "Korbin, Jill" <jek7@case.edu>, Beth Trecasa <bmt5@case.edu>

Bcc: Jennifer Dyke <jfd11@case.edu>

Dear Mary,

This is a follow up to Beth's comments at the last Chair Council meeting concerning a new post-baccalaureate certificate program CAS is developing with the School of Medicine. Because your department teaches some of the required courses, we are writing to get your feedback on including these courses from your department in the proposal. Also, we would like to ask for your suggestions for additional elective courses for this program.

We will have a fuller version of the proposal to send you as soon as it is complete. The program will go through all of the needed approval processes, and so it is important to know if the required courses from your department can be included in the proposal, along with additional electives you might want to offer. A tuition-sharing agreement is being negotiated between the deans so that the efforts of both CAS and the School of Medicine will be compensated fairly.

The program is envisioned to be a joint initiative of CAS and the School of Medicine to qualify and prepare two groups of post-baccalaureate students for medical school admission. These students will be carefully selected for their potential to succeed.

The first group, we call the career changers, will have to complete the courses required for medical school consideration. We anticipate a smaller number of these students, perhaps 5-10 per year, and they would be enrolling in the natural and social science and mathematics courses required for medical school consideration (see attached list of required courses in your department).

The second group are those students who are trying to improve and enhance their records to be more competitive for medical school consideration. This group of students would be enrolling in those required courses in which they needed to improve their grade. In addition, these students would be enrolling in upper division electives to demonstrate their potential in more advanced courses. This group would involve perhaps 35-40 students each year.

Because we have these two groups we are asking for your feedback on both the required courses, and the electives we can offer. Programs of study will be specific to the needs of each student and they will be carefully advised about course selection.

Please see the attached spreadsheet that includes the courses in your department that are required for medical school admission. We've prepared a summary of the course offerings, enrollments, and sections for the past three years based on the information in SIS. Students in the program will only need to take these courses if they have not previously taken them during their baccalaureate program or potentially if they received a C in the course and would like to improve the grade.

Thus far, the suggested elective courses are primarily in the School of Medicine, but we are confident that there are several

courses in the College that would be relevant to a student pursuing admission to a medical school program. We would appreciate a listing of possible electives in your department to include in the proposal. Inclusion on the elective list, of course, does not necessarily mean that students will enroll.

Would you please let us know by **Wednesday, March 23rd**, if there is capacity in the required courses and if you approve their inclusion in the proposal? If there is not capacity, but you otherwise would approve, can you let us know what additional teaching capacity would be necessary?

Would you also please let us know by **Wednesday, March 23rd**, if there are upper-division undergraduate and graduate courses that are health and medicine-related and that you think would be appropriate to include and have capacity for additional students?

At this time, we anticipate the program building up to 50 students a year, with the first cohort entering sometime in 2017. We are very excited about this and think it could grow to become a nationally competitive program.

Please let us know if you have any questions. And thank you in advance for your feedback and guidance.

Jill and Beth

—
Chandel Smith
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cms218@case.edu

 CHEM Enrollment-Capacity Comparisons.xls
131K

APPENDIX D: Required and Elective Course Descriptions and Department Chair Letters of Support

I	A	B	C	D	E	Spring 2014			Summer 2014			J	K	L	Fall 2014			Spring 2015			Summer 2015			T	U	V	Fall 2015		Spring 2016		AA								
						Enroll.*	Cap.**	# Sec.	Enroll.*	Cap.**	# Sec.				Enroll.*	Cap.**	# Sec.	Enroll.*	Cap.**	# Sec.	Enroll.*	Cap.**	# Sec.				Enroll.*	Cap.**	# Sec.	Enroll.*		Cap.**	# Sec.	Enroll.*	Cap.**	# Sec.	Enroll.*	Cap.**	# Sec.
5	CHEM 105	301	382	1	Not offered	15	200	1	15	200	1	300	382	1	Not offered	13	200	1	301	382	1	301	382	1	301	382	1	Not offered											
7	CHEM 106	63	120	1	278	382	1	22	200	1	66	120	1	284	382	1	18	200	1	51	120	1	51	120	1	120	1	1	271	382	1								
9	CHEM 113 Lecture	151	216	1	157	382	1	10	36	1	81	216	1	210	382	1	12	36	1	95	190	1	95	190	1	190	1	1	190	382	1								
10	CHEM 113 Lab	30	36	6	26	32	6	10	36	1	27	36	3	35	36	6	12	36	1	32	32	3	32	32	3	32	32	3	17-36	36	6								
12	CHEM 223	382	400	1	155	200	1	45	350	1	325	400	1	87	200	1	56	350	1	323	400	1	323	400	1	400	1	1	86	200	1								
14	CHEM 224	73	250	1	248	382	1	71	350	1	86	100	1	239	382	1	68	350	1	85	100	1	85	100	1	100	1	1	239	382	1								
16	CHEM 233 Lecture	258	342	1	75	124	1	11	36	1	238	342	1	63	124	1	20	36	1	244	346	1	244	346	1	346	1	1	60	124	1								
17	CHEM 233 Lab	43	32-50	6	38	36-45	2	11	36	1	40	32-50	6	32	28-38	2	20	36	1	41	32-48	6	41	32-48	6	30	38	2											
19	CHEM 234 Lecture	28	50	1	193	300	1	19	36	1	42	50	1	186	300	1	10	36	1	36	38	1	36	38	1	38	1	1	202	300	1								
20	CHEM 234 Lab	28	50	1	39	32-50	5	19	36	1	42	50	1	37	32-50	5	10	36	1	36	38	1	36	38	1	38	1	1	40	32-50	5								

*Enrollment is actual for courses with 1 section and averaged for those with multiple sections. **Capacity relates to the combined enrollment capacity per SIS.



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - For Review & Approval: Courses for New Post-Bac, Pre-Med Certificate Program (CHEM)

Mary D. Barkley <mdb4@case.edu>
To: Chandel Smith <cms218@case.edu>

Wed, Mar 16, 2016 at 12:20 PM

I missed the last chair council meeting, but am aware of the proposed postbac program.


We have capacity in the courses that you listed in the spreadsheet. Assuming that all 50 students per year do NOT enroll in the same lab course! If that were to happen, we would have to open another section and need another TA position.

I added the likely electives that students might take at the bottom of the spreadsheet. Biochemistry lecture and lab (with lecture) and a medicinal chemistry course. The biochemistry lab course is pretty expensive in terms of reagents and lab class size. Right now it is running close to capacity (12 students). If as many as 12 students chose this course, we would have to open another section, requiring another TA position and additional funds for supplies for the course.

[Quoted text hidden]

[Quoted text hidden]

Mary D. Barkley
M. Roger Clapp University Professor of Arts & Sciences
Chair, Department of Chemistry
Case Western Reserve University
10900 Euclid Avenue
Cleveland, OH 44106-7078
(216) 368-0602
(216) 368-0604 fax
(216) 409-8839 cell
(216) 397-3349 home

 CHEM Enrollment-Capacity Comparisons.xls
55K

Chemistry Electives
Approved for Proposal

A		B		C	
1	Course No.	Course Title	Course Description		
	CHEM 328/428	Biochemistry	A survey of modern biochemistry as viewed from a chemistry perspective. Amino acids and peptides. Protein structure, folding, and dynamics. DNA and RNA. Saccharides, lipids, and biological membranes. Chemical mechanisms of enzyme catalysis. Glycolysis, ATP utilization, and oxidative phosphorylation. Metabolism. Expression and transmission of genetic information.		
2	CHEM 329/429	Chemical Aspects of Living Systems	A series of special topics in the chemistry of biological processes at the level of chemical structure and molecular mechanisms. Topics will be chosen from the following: Nature of enzymatic rate enhancements. Coenzyme chemistry. Biosynthesis. Enzymatic and nonenzymatic fatty acid metabolism. Bioenergetics: mitochondrial and photosynthetic electron transport and vision. Neurotransmitters and hormone action. Receptors and signal transduction. Factors affecting biological activity and drug design. Xenobiotic metabolism. Carcinogenesis and DNA repair.		
	CHEM 306 Lecture CHEM 306 Lab	Introductory Physical Chemistry Introductory Physical Chemistry Lab	A one-semester laboratory and lecture course developed to introduce students to a variety of chemical biology laboratory themes including buffering, identification of amino acids, immunoassay, ligand binding, cellular fractionation, enzyme isolation and purification, proteomics, and enzyme kinetics. Techniques include titration, various forms of chromatography, colorimetric assays, electrophoresis, high performance liquid chromatography and liquid chromatography coupled with tandem mass spectrometry.		
4	CHEM 333	Medicinal Chemistry and Drug Development	This course provides an overview on how principles in chemistry and biology are integrated to facilitate drug development. Primary emphasis will be placed on the development of organic molecules as drugs and metabolic enzymes as drug targets. Subjects pertinent to the introduction of medicinal chemistry, evaluation of drug efficacies in vitro and in vivo, and drug metabolism will be covered.		
5					



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - For Review & Approval: Courses for New Post-Bac, Pre-Med Certificate Program (PHYS)

Chandel Smith <cms218@case.edu>

Tue, Mar 15, 2016 at 10:02 AM

To: "Kash, Kathy" <lk43@case.edu>

Cc: "Korbin, Jill" <jek7@case.edu>, Beth Trecasa <bmt5@case.edu>

Bcc: Jennifer Dyke <jfd11@case.edu>

Dear Kathy,

This is a follow up to Beth's comments at the last Chair Council meeting concerning a new post-baccalaureate certificate program CAS is developing with the School of Medicine. Because your department teaches some of the required courses, we are writing to get your feedback on including these courses from your department in the proposal. Also, we would like to ask for your suggestions for additional elective courses for this program.

We will have a fuller version of the proposal to send you as soon as it is complete. The program will go through all of the needed approval processes, and so it is important to know if the required courses from your department can be included in the proposal, along with additional electives you might want to offer. A tuition-sharing agreement is being negotiated between the deans so that the efforts of both CAS and the School of Medicine will be compensated fairly.

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The first group, we call the career changers, will have to complete the courses required for medical school consideration. We anticipate a smaller number of these students, perhaps 5-10 per year, and they would be enrolling in the natural and social science and mathematics courses required for medical school consideration (see attached list of required courses in your department).

The second group are those students who are trying to improve and enhance their records to be more competitive for medical school consideration. This group of students would be enrolling in those required courses in which they needed to improve their grade. In addition, these students would be enrolling in upper division electives to demonstrate their potential in more advanced courses. This group would involve perhaps 35-40 students each year.

Because we have these two groups we are asking for your feedback on both the required courses, and the electives we can offer. Programs of study will be specific to the needs of each student and they will be carefully advised about course selection.

Please see the attached spreadsheet that includes the courses in your department that are required for medical school admission. We've prepared a summary of the course offerings, enrollments, and sections for the past three years based on the information in SIS. Students in the program will only need to take these courses if they have not previously taken them during their baccalaureate program or potentially if they received a C in the course and would like to improve the grade.

Thus far, the suggested elective courses are primarily in the School of Medicine, but we are confident that there are several

courses in the College that would be relevant to a student pursuing admission to a medical school program. We would appreciate a listing of possible electives in your department to include in the proposal. Inclusion on the elective list, of course, does not necessarily mean that students will enroll.

Would you please let us know by **Wednesday, March 23rd**, if there is capacity in the required courses and if you approve their inclusion in the proposal? If there is not capacity, but you otherwise would approve, can you let us know what additional teaching capacity would be necessary?


Would you also please let us know by **Wednesday, March 23rd**, if there are upper-division undergraduate and graduate courses that are health and medicine-related and that you think would be appropriate to include and have capacity for additional students?

At this time, we anticipate the program building up to 50 students a year, with the first cohort entering sometime in 2017. We are very excited about this and think it could grow to become a nationally competitive program.

Please let us know if you have any questions. And thank you in advance for your feedback and guidance.

Jill and Beth

--
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 **PHYS Enrollment-Capacity Comparisons.xls**
122K

Course	Fall 2013			Spring 2014			Summer 2014			Fall 2014			Spring 2015			Summer 2015			Fall 2015			Spring 2016		
	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.
PHYS 115 Lecture	149	60	1	Not offered	Not offered	2	28	32	2	150	160	1	Not offered	Not offered	28	32	2	159	160	1	Not offered	Not offered	Not offered	Not offered
PHYS 115 Lab	25	15-30	6							21	16-32	7						25	16-32	7				
PHYS 115 Rec	38	50	3																					
PHYS 116 Lecture		Not offered		173	160	1	22	32	2	Not offered	Not offered	157	160	1	22	32	2	Not offered	Not offered	Not offered	Not offered	173	180	1
PHYS 116 Lab				38	16-50	9							22	8-32	7							25	8-32	7

*Enrollment is actual for courses with 1 section and averaged for those with multiple sections. **Capacity relates to the combined enrollment capacity per SIS.



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - For Review & Approval: Courses for New Post-Bac, Pre-Med Certificate Program (PHYS)

Kathleen Kash <kathleen.kash@case.edu>

Fri, Mar 25, 2016 at 7:14 AM

To: "Jill E. Korbin" <jek7@case.edu>

Cc: Beth Trecasa <bmt5@case.edu>, Chandel Smith <chandel.smith@case.edu>

Hi Jill,

I checked with the instructor for the courses, Diana Driscoll, and she and I see no problem with approving the courses for this program, given that we anticipate that few of the program's students will take these courses. Because there is a lab component, the question of numbers is important. If you do anticipate that a large number of these students would enroll, we would likely need to open up additional lab sessions, at some significant cost to our department.

Kathy

[Quoted text hidden]

—
Kathleen Kash
Professor and Chair
Department of Physics
Case Western Reserve University
2076 Adelbert Road
Cleveland, OH 44106-7079
tel. 216-368-4021
FAX 216-368-4671



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - For Review & Approval: Courses for New Post-Bac, Pre-Med Certificate Program (PSCL)

Chandel Smith <cms218@case.edu>
 To: Lee Thompson <lat@case.edu>
 Cc: "Korbin, Jill" <jek7@case.edu>, Beth Trecasa <bmt5@case.edu>
 Bcc: Jennifer Dyke <jfd11@case.edu>

Tue, Mar 15, 2016 at 10:01 AM

Dear Lee,

This is a follow up to Beth's comments at the last Chair Council meeting concerning a new post-baccalaureate certificate program CAS is developing with the School of Medicine. Because your department teaches some of the required courses, we are writing to get your feedback on including these courses from your department in the proposal. Also, we would like to ask for your suggestions for additional elective courses for this program.

We will have a fuller version of the proposal to send you as soon as it is complete. The program will go through all of the needed approval processes, and so it is important to know if the required courses from your department can be included in the proposal, along with additional electives you might want to offer. A tuition-sharing agreement is being negotiated between the deans so that the efforts of both CAS and the School of Medicine will be compensated fairly.

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The second group are those students who are trying to improve and enhance their records to be more competitive for medical school consideration. This group of students would be enrolling in those required courses in which they needed to improve their grade. In addition, these students would be enrolling in upper division electives to demonstrate their potential in more advanced courses. This group would involve perhaps 35-40 students each year.

Because we have these two groups we are asking for your feedback on both the required courses, and the electives we can offer. Programs of study will be specific to the needs of each student and they will be carefully advised about course selection.

Please see the attached spreadsheet that includes the courses in your department that are required for medical school admission. We've prepared a summary of the course offerings, enrollments, and sections for the past three years based on the information in SIS. Students in the program will only need to take these courses if they have not previously taken them during their baccalaureate program or potentially if they received a C in the course and would like to improve the grade.

Thus far, the suggested elective courses are primarily in the School of Medicine, but we are confident that there are several

courses in the College that would be relevant to a student pursuing admission to a medical school program. We would appreciate a listing of possible electives in your department to include in the proposal. Inclusion on the elective list, of course, does not necessarily mean that students will enroll.

Would you please let us know by **Wednesday, March 23rd**, if there is capacity in the required courses and if you approve their inclusion in the proposal? If there is not capacity, but you otherwise would approve, can you let us know what additional teaching capacity would be necessary?


Would you also please let us know by **Wednesday, March 23rd**, if there are upper-division undergraduate and graduate courses that are health and medicine-related and that you think would be appropriate to include and have capacity for additional students?

At this time, we anticipate the program building up to 50 students a year, with the first cohort entering sometime in 2017. We are very excited about this and think it could grow to become a nationally competitive program.

Please let us know if you have any questions. And thank you in advance for your feedback and guidance.

Jill and Beth

—
Chandel Smith
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(216) 368-3826 phone
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cms218@case.edu

 **PSCL Enrollment-Capacity Comparisons.xls**
117K

Course	Fall 2013		Spring 2014		Summer 2014		Fall 2014		Spring 2015		Summer 2015		Fall 2015		Spring 2016									
	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.						
PSCL 101	86	117-200	3	103	100-115	2	12	40	1	86	117-200	3	91	90-115	2	12	40	1	91	117-200	3	139	90-200	2

*Enrollment is actual for courses with 1 section and averaged for those with multiple sections. **Capacity relates to the combined enrollment capacity per SIS.



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - For Review & Approval: Courses for New Post-Bac, Pre-Med Certificate Program (PSCL)

Lee Thompson <lat@case.edu>
 To: Chandel Smith <cms218@case.edu>
 Cc: "Korbin, Jill" <jek7@case.edu>, Beth Trecasa <bmt5@case.edu>

Sat, Mar 19, 2016 at 3:01 PM

Hi Jill and Beth,

Thank you for reaching out to us with this initiative! In regard to PSCL101 General Psychology, I can approve inclusion of this course as a required course and we should have capacity. This is a large lecture based course and we offer 3 sections every fall and 2 sections every spring. The class size is capped by the room capacity and currently we are not quite at capacity for all sections in any given semester.

As for elective courses, almost any PSCL and several COSI courses (I include full description below because many are not as familiar with our COSI courses) would be an appropriate elective for a future physician. My top recommendations are:

PSCL230 - Child Psychology
 PSCL317 - Health Psychology
 PSCL321 - Abnormal Psychology
 PSCL352 - Physiological Psychology
 PSCL344 - Developmental Psychopathology
 PSCL369 - Adult Development and Aging

COSI 101 Introduction to Health Communication An introductory examination of the influences associated with the functions of human life, communication processes, and research related to health and the health care industry from interpersonal, cultural, and organizational communication perspectives. We review the history and development of the field of health communication, introduce research that examines and tests communication theories regarding health, diffusion of health information, and real world application related to findings.

COSI 109 Introduction to Communication Disorders Forty-two million Americans have some type of communication disorder. How does a person with a communication disorder cope with the challenges of daily living? This course will examine the characteristics of communication disorders via first-hand and fictionalized accounts in books, films, and simulated communication disorders experiences. Topics will include disorders of speech, language, and hearing in children and adults, and the effects of communication disorders on families.

COSI 340 Theories of Health Communication This is an advanced examination into the theories and scholarship of health communication. Various communication processes assume a central role in the acquisition and enactment of health care. This course examines communication activity across a broad range of health care contexts. Attention will be given to provider-client communication, communication and ethical concerns, persuasive health promotion efforts, media impact on health, and health communication theory development, research, and methodology. Prerequisite: COSI 101.

COSI 200 Interpersonal Communication Communication is a primary means of initiating, maintaining, and dissolving relationships. Managing interpersonal relationships is a human concern across several contexts. Interpersonal communication considers the role of communication in personal relationships, including family, friendship, romantic, and other contexts. Concepts for study include communication competence, family interaction, relational messages, and conflict.

COSI 260 Multicultural Aspects of Human Communication Introduces intercultural/interracial communication principles and theory and includes the exploration of differences in perceptions and use of verbal and nonverbal communication messages. The course emphasizes relationships between communication, race, culture; nature of race and culture; and how they influence the communication process. We also discuss practical outcomes that can encourage more positive intercultural/interracial encounters.

COSI 280 Organizational Communication This course includes a review and analysis of the development of organizational communication theories associated with social interaction in the workplace. The course addresses communication challenges that contemporary organizational leaders and members face and strategies used to develop analytical and practical skills that promote success in interactions in diverse organizational situations and cultures.

COSI 332 Persuasion This survey course is an introduction to persuasion and attitude change, and includes the history, dynamics, and theories of persuasion. There is an extensive focus on persuasive strategies and models of attitude change. The course aims to develop an understanding of principles of persuasion and the practical application of those principles in life and career situations.

COSI 345 Communication and Aging This course addresses the normal and abnormal psychobiological changes that occur during aging and their effects on communication. Topics of discussion will include communicative interaction styles, disordered communication, and rehabilitation practices.

Given that we probably will not get more than a few students from this new post-bac program in any one course, our courses all have capacity.

Best,
 Lee

[Quoted text hidden]

Lee Anne Thompson, Ph.D.

Professor and Chair
Department of Psychological Sciences
Case Western Reserve University
216-368-6477, 216-368-4891 (Fax)

To make an appointment with Dr. Thompson please use the following link: <https://www.google.com/calendar/selfsched?sstoken=UU6HUFIFUWIXNWgyfGRIZmF1bHR8ZjE4YTdkNDBlNmZyZliODRmMzlwZjdjNzlmThmYzA> IMPORTANT!!!! YOU MUST USE A GOOGLE CALENDAR TO SCHEDULE AN APPOINTMENT AND YOUR CALENDAR MUST BE SET TO THE TIME ZONE USED IN CLEVELAND OHIO.



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - For Review & Approval: Courses for New Post-Bac, Pre-Med Certificate Program (SOCl)

Chandel Smith <cms218@case.edu>
To: "Dannefer, Dale" <dxd79@case.edu>
Cc: "Korbin, Jill" <jek7@case.edu>, Beth Trecasa <bmt5@case.edu>
Bcc: Jennifer Dyke <jfd11@case.edu>

Tue, Mar 15, 2016 at 10:01 AM

Dear Dale,

This is a follow up to Beth's comments at the last Chair Council meeting concerning a new post-baccalaureate certificate program CAS is developing with the School of Medicine. Because your department teaches some of the required courses, we are writing to get your feedback on including these courses from your department in the proposal. Also, we would like to ask for your suggestions for additional elective courses for this program.

We will have a fuller version of the proposal to send you as soon as it is complete. The program will go through all of the needed approval processes, and so it is important to know if the required courses from your department can be included in the proposal, along with additional electives you might want to offer. A tuition-sharing agreement is being negotiated between the deans so that the efforts of both CAS and the School of Medicine will be compensated fairly.

The program is envisioned to be a joint initiative of CAS and the School of Medicine to qualify and prepare two groups of post-baccalaureate students for medical school admission. These students will be carefully selected for their potential to succeed.

The first group, we call the career changers, will have to complete the courses required for medical school consideration. We anticipate a smaller number of these students, perhaps 5-10 per year, and they would be enrolling in the natural and social science and mathematics courses required for medical school consideration (see attached list of required courses in your department).

The second group are those students who are trying to improve and enhance their records to be more competitive for medical school consideration. This group of students would be enrolling in those required courses in which they needed to improve their grade. In addition, these students would be enrolling in upper division electives to demonstrate their potential in more advanced courses. This group would involve perhaps 35-40 students each year.

Because we have these two groups we are asking for your feedback on both the required courses, and the electives we can offer. Programs of study will be specific to the needs of each student and they will be carefully advised about course selection.

Please see the attached spreadsheet that includes the courses in your department that are required for medical school admission. We've prepared a summary of the course offerings, enrollments, and sections for the past three years based on the information in SIS. Students in the program will only need to take these courses if they have not previously taken them during their baccalaureate program or potentially if they received a C in the course and would like to improve the grade.

Thus far, the suggested elective courses are primarily in the School of Medicine, but we are confident that there are several

courses in the College that would be relevant to a student pursuing admission to a medical school program. We would appreciate a listing of possible electives in your department to include in the proposal. Inclusion on the elective list, of course, does not necessarily mean that students will enroll.

Would you please let us know by **Wednesday, March 23rd**, if there is capacity in the required courses and if you approve their inclusion in the proposal? If there is not capacity, but you otherwise would approve, can you let us know what additional teaching capacity would be necessary?


Would you also please let us know by **Wednesday, March 23rd**, if there are upper-division undergraduate and graduate courses that are health and medicine-related and that you think would be appropriate to include and have capacity for additional students?

At this time, we anticipate the program building up to 50 students a year, with the first cohort entering sometime in 2017. We are very excited about this and think it could grow to become a nationally competitive program.

Please let us know if you have any questions. And thank you in advance for your feedback and guidance.

Jill and Beth

—
Chandel Smith
Dean's Office
College of Arts & Sciences
Case Western Reserve University
Crawford 719C
Cleveland, OH 44106-7068
(216) 368-3826 phone
(216) 368-3842 fax
cms218@case.edu

 **SOCI Enrollment-Capacity Comparisons.xls**
116K

APPENDIX D: Required and Elective Course Descriptions and Department Chair Letters of Support

Course	Fall 2013			Spring 2014			Summer 2014			Fall 2014			Spring 2015			Summer 2015			Fall 2015			Spring 2016		
	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.	Enroll*	Cap.**	# Sec.
SOCI 101	60	60	2	49	50	2	54	50-60	3	51	50	3	57	50-60	3	81	60-100	3	81	60-100	3	81	60-100	3

*Enrollment is actual for courses with 1 section and averaged for those with multiple sections. **Capacity relates to the combined enrollment capacity per SIS.



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - For Review & Approval: Courses for New Post-Bac, Pre-Med Certificate Program (SOCl)

Dale Dannefer <dxd79@case.edu>

Thu, Mar 24, 2016 at 10:47 PM

To: "Jill E. Korbin" <jek7@case.edu>

Cc: Dale Dannefer <dale.dannefer@case.edu>, Beth Trecasa <bmt5@case.edu>, Chandel Smith <cms218@case.edu>

Dear Jill and Beth,

Sorry I somehow missed the original email.

SOCI101 is currently running multiple sections at capacity. However, we can readily add another section by paying one lecturer to teach it, so I do not see this as a big problem if demand warrants.

As you probably are aware, the sociology of health and medicine is a longstanding strength of our program. Accordingly, we have a number of potentially relevant and high-quality courses. I would recommend the following for inclusion as electives.

SOCI344 Health Disparities
SOCI275 Lives in Medicine: Becoming and Being a Physician
SOCI365 Health Care Delivery
SOCI311 Health, Illness and Social Behavior
SOCI345 Sociology of Mental Illness
SOCI364 Disability and Society
SOCI264 Body, Culture and Disability
SOCI361 The Life Course

I hope this helps. Please let me know if I can provide more information.

Best wishes,
Dale

{Quoted text hidden}

Dale Dannefer
Selah Chamberlain Professor of Sociology
Chair, Department of Sociology
Case Western Reserve University
10900 Euclid Avenue
Cleveland, OH 44106 USA

Office 216-368-2703
Cell 585-315-2411
Fax 216-368-2676



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - For Review & Approval: Courses for New Post-Bac, Pre-Med Certificate Program (SOCl)

Dale Dannefer <dxd79@case.edu>

Fri, Mar 25, 2016 at 8:28 AM

To: "Jill E. Korbin" <jek7@case.edu>

Cc: Dale Dannefer <dale.dannefer@case.edu>, Beth Trecasa <bmt5@case.edu>, Chandel Smith <cms218@case.edu>

Jill and Beth,

Thanks. These are all indeed terrific courses. I assume your focus is on undergraduate courses. However, if you want to include grad-only courses, Medical Sociology (SOC1443) could also be added to our list.

Also, several of the courses in the list I sent you are "slash" courses with graduate-level counterparts.

Dale

[Quoted text hidden]

APPENDIX
(Part 2 of 3)

Email Request to Departments 25

Approvals for elective courses from:

DEPARTMENT	PAGE
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Religious Studies.....	36



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - Elective Courses for New Post-Bac, Pre-Med Certificate Program

Chandel Smith <cms218@case.edu>

Tue, Mar 15, 2016 at 10:00 AM

To: Lawrence Greksa <lpg2@case.edu>, "Scallen, Catherine" <cbs2@case.edu>, Stacy McGaugh <:ssm69@case.edu>, Paul Iversen <pai2@case.edu>, William Deal <wed@case.edu>, Karen Potter <kp13@case.edu>, James Van Orman <jav12@case.edu>, Christopher Flint <cx133@case.edu>, Gillian Weiss <glw@case.edu>, Yasuhiro Shirai <yxs561@case.edu>, David Rothenberg <djr30@case.edu>, Laura Hengehold <leh7@case.edu>, "Beckwith, Karen" <klb56@case.edu>, Timothy Beal <tcb5@case.edu>, Jerrold Scott <jms60@case.edu>

Cc: "Korbin, Jill" <jek7@case.edu>, Beth Trecasa <bmt5@case.edu>
Bcc: Jennifer Dyke <jfd11@case.edu>

Dear Chairs,

This is a follow up to Beth's comments at the last Chair Council meeting concerning a new post-baccalaureate certificate program CAS is developing with the School of Medicine. We are writing to get your feedback on elective courses in your department that could be offered for this program.

We will have a fuller version of the proposal to send you as soon as it is complete. The program will go through all of the needed approval processes, and so it is important to know if there are elective courses from your department can be included in the proposal. A tuition-sharing agreement is being negotiated between the deans so that the efforts of both CAS and the School of Medicine will be compensated fairly.

The program is envisioned to be a joint initiative of CAS and the School of Medicine to qualify and prepare two groups of post-baccalaureate students for medical school admission. These students will be carefully selected for their potential to succeed.

The first group, we call the career changers, will have to complete the courses required for medical school consideration. We anticipate a smaller number of these students, perhaps 5-10 per year, and they would be enrolling in the natural and social science and mathematics courses required for medical school consideration.

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We are asking for your feedback on the electives from your department that we can offer in this program. Programs of study will be specific to the needs of each student and they will be carefully advised about course selection. Thus far, the suggested elective courses are primarily in the School of Medicine, but we are confident that there are several courses in the College that would be relevant to a student pursuing admission to a medical school program. We would appreciate a listing of possible electives in your department to include in the proposal. Inclusion on the elective list, of course, does not necessarily mean that students will enroll. These electives should be health and medicine-related.

Would you also please let us know by **Wednesday, March 23rd**, if there are upper-division undergraduate and graduate courses that are health and medicine-related and that you think would be appropriate to include and have capacity for additional students?

At this time, we anticipate the program building up to 50 students a year, with the first cohort entering sometime in 2017. We are very excited about this and think it could grow to become a nationally competitive program.

Please let us know if you have any questions. And thank you in advance for your feedback and guidance.

Jill and Beth

—
Chandel Smith
Dean's Office
College of Arts & Sciences
Case Western Reserve University
Crawford 719C
Cleveland, OH 44106-7068
(216) 368-3826 phone
(216) 368-3842 fax
cms218@case.edu



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - Elective Courses for New Post-Bac, Pre-Med Certificate Program

Beth Trecasa <bmt5@case.edu>

Thu, Mar 24, 2016 at 9:01 AM

To: Chandel Smith <cms218@case.edu>

Beth

Beth Trecasa

Assistant Dean for Strategic Initiatives
College of Arts and Sciences
Case Western Reserve University
10900 Euclid Ave.
Cleveland, Ohio 44106-7068

beth.trecasa@case.edu
216-368-3468

Begin forwarded message:

From: Lawrence Greksa <lg2@case.edu>

Subject: Re: Message from Jill and Beth - Elective Courses for New Post-Bac, Pre-Med Certificate Program

Date: March 15, 2016 at 9:18:58 PM EDT

To: "Jill E. Korbin" <jek7@case.edu>, Beth Trecasa <bmt5@case.edu>

Jill and Beth,

Attached is a list of upper-level Anthropology courses that may be appropriate for the post-bac program you are developing. I excluded two courses that serve as SAGES Department seminars given the requirement for limiting their enrollment. I believe the courses that have been included can all take additional courses.

Larry

On 3/15/2016 10:00 AM, Chandel Smith wrote:

Dear Chairs,

This is a follow up to Beth's comments at the last Chair Council meeting concerning a new post-baccalaureate certificate program CAS is developing with the School of Medicine. We are writing to get your feedback on elective courses in your department that could be offered for this program.

We will have a fuller version of the proposal to send you as soon as it is complete. The program will go through all of the needed approval processes, and so it is important to know if there are elective courses from your department that can be included in the proposal. A tuition-sharing agreement is being negotiated between the deans so that the efforts of both CAS and the School of Medicine will be compensated fairly.

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We are asking for your feedback on the electives from your department that we can offer in this program. Programs of study will be specific to the needs of each student and they will be carefully advised about course selection. Thus far, the suggested elective courses are primarily in the School of Medicine, but we are confident that there are several courses in the College that would be relevant to a student pursuing admission to a medical school program. We would appreciate a listing of possible electives in your department to include in the proposal. Inclusion on the elective list, of course, does not necessarily mean that students will enroll. These electives should be health and medicine-related.

Would you also please let us know by **Wednesday, March 23rd**, if there are upper-division undergraduate and graduate courses that are health and medicine-related and that you think would be appropriate to include and have capacity for additional students?


At this time, we anticipate the program building up to 50 students a year, with the first cohort entering sometime in 2017. We are very excited about this and think it could grow to become a nationally competitive program.

Please let us know if you have any questions. And thank you in advance for your feedback and guidance.

Jill and Beth

—
Chandel Smith
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—
Lawrence P. Greksa, Ph.D.
Professor and Chair
236 Mather Memorial
Case Western Reserve University
Cleveland, OH 44106
PH: 216-368-6777
FAX: 216-368-5334

 postbac courses.docx
18K



Chandel Smith <cms218@case.edu>

Fwd: Re: Electives for PRIME program (post-bac)

Jill E. Korbin <jek7@case.edu>

Tue, Apr 19, 2016 at 3:50 PM

To: Chandel Smith <cms218@case.edu>

----- Forwarded Message -----

Subject: Re: Electives for PRIME program (post-bac)

Date: Wed, 6 Apr 2016 13:29:29 -0400

From: Lawrence Greksa <lpg2@case.edu>

Organization: Case Western Reserve University

To: Jill E. Korbin <jek7@case.edu>, Beth Trecasa <bmt5@case.edu>

Absolutely. I was thinking MA instead of post-bac. Sorry.

On 4/6/2016 1:08 PM, Jill E. Korbin wrote:

Hi Larry. The electives you sent us were at the 400 graduate level. Do we also have your permission to include them at the 300 level? Thanks, Jill and Beth

--
Jill E. Korbin
Associate Dean, College of Arts and Sciences
Lucy Adams Leffingwell Professor
Professor of Anthropology
Director, Schubert Center for Child Studies
Co-Director, Childhood Studies Program
Case Western Reserve University

--
Lawrence P. Greksa
Professor and Chair
Department of Anthropology
236 Mather Memorial
Case Western Reserve University
Cleveland, OH 44106
PH: 216-368-6777
FAX: 216-368-5334

--
Jill E. Korbin
Associate Dean, College of Arts and Sciences
Lucy Adams Leffingwell Professor
Professor of Anthropology
Director, Schubert Center for Child Studies
Co-Director, Childhood Studies Program
Case Western Reserve University



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - Elective Courses for New Post-Bac, Pre-Med Certificate Program

Paul Iversen <paul.iversen@cwru.edu>

Tue, Mar 15, 2016 at 10:24 AM

To: Beth Trecasa <bmt5@case.edu>, Jill Korbin <jek7@case.edu>

Cc: Chandel Smith <cms218@case.edu>

Dear Jill and Beth,

Classics could offer the following two courses (see below). We could change the numbers to 300-level and x-list at the 400-level, if need be. We are going to begin using a new website/program this coming summer, so it's going to change a bit as it is.

Best,

Paul

CLSC 295A GREK & LATN ELEMENTS IN ENGL: BASIC COURSE (1.5)

The first course of a two-course sequence (see CLSC 295B) in which students, assisted by computer drills on the web, learn the classical foundations (etymology) of modern English as well as the basic principles on which roots, prefixes, and suffixes combine to give precise meanings to composite words. Students will read the textbook and do the computerized drills on their own and then come to class in order to take exams.

CLSC 295B ADV ELEMENTS IN ENGL: BIOMED TERMINOLOGY (1.5)

This is the second course in a two-course sequence (see CLSC 295A) on the etymology of English words. The advanced section is oriented especially toward scientific and medical terminology. Students will read the textbook and do the computerized drills on their own and then come to class in order to take exams. Prereq: Previous or concurrent registration in CLSC 295A.

On Tue, Mar 15, 2016 at 10:00 AM, Chandel Smith <cms218@case.edu> wrote:

[Quoted text hidden]

—
Paul A. Iversen
Chair, Associate Professor
Department of Classics
Case Western Reserve University



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - Elective Courses for New Post-Bac, Pre-Med Certificate Program

Karen Potter <klp13@case.edu>

Tue, Mar 15, 2016 at 10:17 AM

Reply-To: Karen.Potter@case.edu

To: Jill Korbin <jek7@case.edu>, Chandel Smith <cms218@case.edu>

Jill/Chandel:

There are two courses in our department that might meet the parameters described:

DANC 445, Kinesiology for Dance, 3 units (offered every other fall semester in 'odd years')

DANC 446, Topics in Dance Medicine, Science and Wellness, 1 - 3 units (offered every spring semester)

Regards,

Karen

[Quoted text hidden]

—
Karen Potter
Professor and Chair
Department of Dance
College of Arts and Sciences
Case Western Reserve University
216-368-1491
<http://dance.case.edu>



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - Elective Courses for New Post-Bac, Pre-Med Certificate Program

Karen Beckwith <kbeckwith50@gmail.com>

Tue, Mar 15, 2016 at 11:44 AM

To: Chandel Smith <cms218@case.edu>

Cc: Beth Trecasa <bmt5@case.edu>, "Jill E. Korbin" <jek7@case.edu>, Joseph White <jxw87@case.edu>

Dear Beth and Jill and Chandel

Please include **POSC483 Health Policy and Politics in the United States**, as an elective in the CAS/SoM post-BA certificate program. This course is an overview of the principal institutions, processes, social forces, and ideas shaping the U.S. health system. Historical, political, economic, and sociological perspectives on the health system are explored as well as the intellectual context of recent policy changes, challenges, and developments. Students will acquire a sense of how health services are financed and delivered in the U.S. They will also learn how to assess its performance compared to that of other similar countries.

The course is offered regularly by Professor Joseph White. We have capacity for additional enrollments in this course; it is offered on a regular basis; it enrolls, at the undergraduate level, students interested in or intending to apply to medical school; and it includes coursework appropriate for those preparing for medical school.

Please let me know if you have any questions about this course or any other issues related to the CAS/SoM post-BA certificate program. Thanks!

Cheers,
Karen

Karen Beckwith
Flora Stone Mather Professor
Chair, Department of Political Science
Case Western Reserve University
Mather House 223
Cleveland, Ohio 44106 USA
216.368.4129
karen.beckwith@case.edu
[Quoted text hidden]



Chandel Smith <cms218@case.edu>

Message from Jill and Beth - Elective Courses for New Post-Bac, Pre-Med Certificate Program

Deepak Sarma <dxs163@case.edu>

Wed, Mar 16, 2016 at 4:20 PM

To: Chandel Smith <cms218@case.edu>

Dear Chandel:

Greetings and good Wed. afternoon. Would you mind forwarding this msg below to Jill and Beth?

Thanks in advance for your help!

Deepak

Dear Jill and Beth:

I've discussed the program with my colleagues in religious studies. There are two courses (one that has been approved and another that has not yet been approved) that may fit.

First, my colleague Prof. Jonathan Tan can teach "Health, Body, and Sexuality in Chinese Religions". This course (not yet approved) explores classical and contemporary understandings of the body, health, and sexuality in Chinese religions. It will explore the emergence and developments of Chinese approaches to health, e.g., diet, meditation, acupuncture, moxibustion, alchemy, etc. that are shaped by religious understandings of nature, body, and cosmos (five phases, yin/yang, etc.), the linkages between sexuality and health, as well as their contemporary significance and implications.

Second, I can teach "Religious Studies for Future Healthcare Professionals." This class (it has already been approved) will provide future healthcare professionals with the basic knowledge of religious studies and of topics pertaining to death and dying, sickness, suffering, and so on. Students will also gain a basic knowledge of related bioethical issues as they are found in the world's religions. The primary aim of the course is to offer future healthcare professionals an awareness of the diverse religious backgrounds of patients and issues that they might encounter and to provide a basic understanding of religious studies in the process.

Please let me know if there is any other information that you need etc.

with all best wishes,

Deepak

Dr. Deepak Sarma

Professor of Religious Studies
Acting Chair of the Department of Religious Studies

Professor of Bioethics (secondary appointment)
School of Medicine, Case Western Reserve University

Curatorial Consultant, Department of Asian Art
Cleveland Museum of Art

Mailing Address:
Department of Religious Studies
Tomlinson Hall
2121 MLK Jr. Drive
Case Western Reserve University
Cleveland, OH 44106-7112

office: 216-368-4790
deepak.sarma@case.edu

deepaksarma.com
[Quoted text hidden]

APPENDIX

(Part 3 of 3)

Summary of elective courses which have been approved

Anthropology Electives
Approved for Proposal

1	A	B	C
Course No.	Course Title		Course Description
1	ANTH 302	Darwinian Medicine (3)	Darwinian medicine deals with evolutionary aspects of modern human disease. It applies the concepts and methods of evolutionary biology to the question of why we are vulnerable to disease. Darwinian (or evolutionary) medicine proposes several general hypotheses about disease causation including disease as evolutionary legacy and design compromise, the result of a novel environment, a consequence of genetic adaptation, a result of infectious organisms' evolutionary adaptations, and disease symptoms as manifestation of defense mechanisms. It proposes that evolutionary ideas can explain, help to prevent and perhaps help to treat some diseases. This course presents the basic logic of Darwinian medicine and evaluates hypotheses about specific diseases that illustrate each of the hypotheses about disease causation.
2	ANTH 306	The Anthropology of Childhood and the Family (3)	Child-rearing patterns and the family as an institution, using evidence from Western and non-Western cultures. Human universals and cultural variation, the experience of childhood and recent changes in the American family.
3	ANTH 323	AIDS: Epidemiology, Biology, and Culture (3)	This course will examine the biological and cultural impact of AIDS in different societies around the world. Topics include: the origin and evolution of the virus, the evolutionary implications of the epidemic, routes of transmission, a historical comparison of AIDS to other epidemics in human history, current worldwide prevalences of AIDS, and cultural responses to the epidemic. Special emphasis will be placed on the long-term biological and social consequences of the epidemic.
4	ANTH 326	Power, Illness, and Inequality: The Political Economy of Health (3)	This course explores the relationship between social inequality and the distribution of health and illness across class, race, gender, sexual orientation, and national boundaries. Class readings drawn from critical anthropological approaches to the study of health emphasize the fundamental importance of power relations and economic constraints in explaining patterns of disease. The course critically examines the nature of Western biomedicine and inequality in the delivery of health services. Special consideration is given to political economic analysis of health issues in the developing world such as AIDS, hunger, reproductive health, and primary health care provision.
5	ANTH 328	Medical Anthropology and Public Health (3)	Anthropology has a longstanding relationship with the field of public health, which dates back to before the flourishing of medical anthropology as a subfield. Direct participation of medical anthropologists in public health research and practice continues to grow. This course explores the intersection of medical anthropology and public health from the perspective of anthropological history, theory, and methods. Course topics include: the history of anthropological work in public health, medical anthropology theory as a guide to anthropological public health research, and anthropological methods and approaches to public health work. Case studies from around the world will be employed throughout the course.
6	ANTH 335	Illegal Drugs and Society (3)	This course provides perspectives on illegal drug use informed by the social, political and economic dimensions of the issues. Framed by the history, epidemiology, and medical consequences of drug use, students will confront the complex challenges posed by addiction. Anthropological research conducted in the U.S. and cross-culturally will demonstrate, elaborate and juxtapose various clinical, public health, and law enforcement policies and perspectives. Topics examined will include: why exclusively using a biomedical model of addiction is inadequate; how effective is the war on drugs; what prevention, intervention and treatment efforts work; and various ideological/moral perspectives on illegal drug use.
7	ANTH 338	Maternal Health: Anthropological Perspectives on Reproductive Practices and Health Policy (3)	The reproductive process is shared by humans as biological beings. However, the experience of pregnancy and childbirth is also dependent on the cultural, social, political, historical, and political-economic setting. This course frames issues in reproductive health by looking at the complex issues associated with maternal health and mortality world-wide. After reviewing biomedical perspectives on reproductive processes, this course will focus on childbirth and pregnancy as the process and ritual by which societies welcome new members. This course will review ethnomedical concepts; discuss the interaction between local, national, and global agendas shaping reproductive practices; and conclude with anthropological critiques of reproductive health initiatives.
8	ANTH 351	Topics in International Health (3)	Special topics of interest in international health.
9	ANTH 354	Health and Healing in East Asia (3)	This course examines the illness experiences and the healing practices in East Asia. After introducing the anthropological approaches to the study of medicine, this course will explore the practices of ethnomedicine and biomedicine, mental health, family planning and reproductive health, the experience of aging and care giving, infectious diseases, environmental health, and biotechnology. By delving into the illness experiences and the healing practices in East Asia, the course will discuss issues related to medical pluralism, health inequality, biological citizenship, social stigmatization, and bioethics.
10	ANTH 359	Introduction to International Health (3)	Critical health problems and needs in developing countries. Prevalence of infectious disease, malnutrition, chronic disease, injury control. Examines strategies for improvement of health in less developed countries.
11	ANTH 360	Global Politics of Fertility, Family Planning, and Population Control (3)	This course offers an anthropological examination of fertility behaviors around the world. In particular, it explores various historical, cultural, socioeconomic, political, and technological factors contributing to reproductive activities. After introducing the anthropological approaches to the study of fertility, the course will delve into the ways to regulate fertility in historical and contemporary times, various factors contributing to fertility change, state intervention in reproduction through voluntary and coercive family planning programs, and new reproductive technologies and ethical concerns surrounding assisted reproduction and abortion.
12	ANTH 361	Urban Health (3)	This course provides an anthropological perspective on the most important health problems facing urban population around the world. Special attention will be given to an examination of disparities in health among urban residents based on poverty, race/ethnicity, gender, and nationality.
13	ANTH 366	Population Change: Problems and Solutions (3)	The course examines population processes and their social consequences from an anthropological perspective. It introduces basic concepts and theories of population studies and demonstrates the ways in which anthropological research contributes to our understanding of population issues. We will explore questions such as: How has world population changed in history? How does a population age or grow younger? What are the factors affecting population health? Why do people migrate? And what are the policy implications of population change? We will examine the sociocultural, economic, political, and ecological factors contributing to population processes, such as factors affecting childbearing decisions, cultural context of sex-selective abortion, various caregiving arrangements for the elderly, and policy responses to population change. We will explore these issues with cases from across the world, with a special focus on China, the world's most populous country with the most massive family-planning program in modern human history.

Anthropology Electives
Approved for Proposal

A	B	C
<p>14 ANTH 367</p>	<p>Topics in Evolutionary Biology (3)</p>	<p>The focus for this course on a special topic of interest in evolutionary biology will vary from one offering to the next. Examples of possible topics include theories of speciation, the evolution of language, the evolution of sex, evolution and biodiversity, molecular evolution. Cross-list: ANAT/EEPS/PHIL/PHOL 467/BIDL 468. Prerequisite: ANTH 225 or equivalent.</p>
<p>15 ANTH 376</p>	<p>Topics in the Anthropology of Health and Medicine (3)</p>	<p>Special topics of interest, such as the biology of human adaptability; the ecology of the human life cycle health delivery systems; transcultural psychiatry; nutrition, health, and disease; paleoepidemiology; and population anthropology.</p>

APPENDIX D: Required and Elective Course Descriptions and Department Chair Letters of Support

Biology Electives
Approved for Proposal

A		B		C	
Course No.	Course Title	Course Description			
1	BIOL 301/401	Biotechnology Laboratory	Laboratory training in recombinant DNA techniques. Basic microbiology, growth, and manipulation of bacteriophage, bacteria and yeast. Students isolate and characterize DNA, construct recombinant DNA molecules, and reintroduce them into eukaryotic cells (yeast, plant, animal) to assess their viability and function. Two laboratories per week.		
2	BIOL 302	Human Learning and the Brain	This course focuses on the question, "How does the human brain learn?" Through assigned readings, extensive class discussions, and a major paper, each student will explore personal perspectives on learning. Specific topics include, but are not limited to: the brain's cycle of learning; neocortex structure and function; emotion and limbic brain; synapse dynamics and changes in learning; images in cognition; symbolic brain (language, mathematics, music); memory formation; and creative thought and brain mechanisms. The major paper will be added to each student's SAGES writing portfolio. In addition, near the end of the semester, each student will make an oral presentation on a chosen topic.		
3	BIOL 333	The Human Microbiome	This departmental seminar is designed to reveal how the abundant community of human-associated microorganisms influence human development, physiology, immunity and nutrition. Using a survey of current literature, this discussion-based course will emphasize an understanding of the complexity and dynamics of human/microbiome interactions and the influence of environment, genetics and individual life histories on the microbiome and human health. Grades will be based on participation, written assignments, exams, an oral presentation and a final paper. Prerequisites are completion of BIOL 214 and BIOL 216. This class is offered as a SAGES		
4	BIOL 340	Human Physiology	This course will provide functional correlates to the students' previous knowledge of human anatomy. Building upon the basic principles covered in BIOL 216 and 346, the physiology of organs and organ systems of humans, including the musculoskeletal, nervous, cardiovascular, lymphatic, immune, respiratory, digestive, excretory, reproductive, and endocrine systems, will be studied at an advanced level. The contribution of each system to homeostasis will be emphasized.		
5	BIOL 346	Human Anatomy	Gross anatomy of the human body. Two lectures and one laboratory demonstration per week.		
6	BIOL 415	Fundamental Immunology	Introductory immunology providing an overview of the immune system, including activation, effector mechanisms, and regulation. Topics include antigen-antibody reactions, immunologically important cell surface receptors, cell-cell interactions, cell-mediated immunity, innate versus adaptive immunity, cytokines, and basic molecular biology and signal transduction in B and T lymphocytes, and immunopathology. Three weekly lectures emphasize experimental findings leading to the concepts of modern immunology. An additional recitation hour is required to integrate the core material with experimental data and known immune mediated diseases. Five mandatory 90 minute group problem sets per semester will be administered outside of lecture and recitation meeting times. Graduate students will be graded separately from undergraduates, and 22 percent of the grade will be based on a critical analysis of a recently published, landmark scientific article.		
7	BIOL 417	Cytokines: Function, Structure, and Signaling	Regulation of immune responses and differentiation of leukocytes is modulated by proteins (cytokines) secreted and/or expressed by both immune and non-immune cells. Course examines the function, expression, gene organization, structure, receptors, and intracellular signaling of cytokines. Topic include regulatory and inflammatory cytokines, colony stimulating factors, chemokines, cytokine and cytokine receptor gene families, intracellular signaling through STAT proteins and tyrosine phosphorylation, clinical potential, and genetic defects. Lecture format using texts, scientific reviews and research articles. Recommended preparation:		
8	BIOL 424	Introduction to Stem Cell Biology	This discussion-based course will introduce students to the exciting field of stem cell research. Students will first analyze basic concepts of stem cell biology, including stem cell niche, cell quiescence, asymmetric cell division, cell proliferation and differentiation, and signaling pathways involved in these processes. This first part of the course will focus on invertebrate genetic models for the study of stem cells. In the second part of the course, students will search for primary research papers on vertebrate and human stem cells, and application of stem cell research in regenerative medicine and cancer. Finally, students will have the opportunity to discuss about ethical controversies in the field. Students will rotate in weekly presentations, and will write two papers during the semester. Students will improve skills on searching and reading primary research papers, gain presentation skills, and further their knowledge in related subjects in the fields of cell biology, genetics and developmental biology. This course may be used as a cell/molecular subject area elective for the B.A. and B.S. Biology degrees.		
9					

Biology Electives
Approved for Proposal

A	B	C
BIOL 427	Functional Genomics	<p>In this course, students will learn how to access and use genomics data to address questions in cell biology, development and evolution. The genome of <i>Drosophila melanogaster</i> will serve as a basis for exploring genome structure and learning how to use a variety of available software to identify similar genes in different species, predict protein sequence and functional domains, design primers for PCR, analyze cis-regulatory sequences, access microarray and RNAseq databases, among others. Classes will be in the format of short lectures, short oral presentations made by students and hands-on experimentation using computers. Discussions will be centered in primary research papers that used these tools to address specific biological questions. The wet-lab component will consist of a research project formulated by a group of 2-3 students that will include basic molecular biology experiments (e.g. PCR and DNA sequencing) to test a hypothesis formulated by the students. Graduate students will be required to make additional presentations of research papers. They also will have additional questions in exams and a distinct page requirement on written assignments. This course satisfies a laboratory requirement of the B.A. in biology. This course satisfies a laboratory or quantitative laboratory requirement of the B.S. in biology.</p>
10 BIOL 342/442	Parasitology	<p>This course will introduce students to classical and current parasitology. Students will discuss basic principles of parasitology, parasite life cycles, host-parasite interaction, therapeutic and control programs, epidemiology, and ecological and societal considerations. The course will explore diverse classes of parasitic organisms with emphasis on protozoan and helminthic diseases and the parasites' molecular biology. Group discussion and selected reading will facilitate further integrative learning and appreciation for parasite biology. This course counts as an elective in the cell/molecular biology subject area for the Biology BA and BS degrees.</p>
11 343/443	Microbiology	<p>The physiology, genetics, biochemistry, and diversity of microorganisms. The subject will be approached both as a basic biological science that studies the molecular and biochemical processes of cells and viruses, and as an applied science that examines the involvement of microorganisms in human disease as well as in workings of ecosystems, plant-symbioses, and industrial processes. The course is divided into four major areas: bacteria, viruses, medical microbiology, and environmental and applied microbiology.</p>
12 BIOL 352/452	Ecology and Evolution of Infectious Diseases	<p>This course explores the effects of infectious diseases on populations of hosts, including humans and other animals. We will use computer models to study how infectious diseases enter and spread through populations, and how factors like physiological and behavioral differences among host individuals, host and pathogen evolution, and the environment affect this spread. Our emphasis will be on understanding and applying quantitative models for studying disease spread and informing policy in public health and conservation. To that end, computer labs are the central component of the course. This course satisfies a laboratory requirement of the B.A. in biology. This course satisfies a laboratory or quantitative laboratory requirement of the B.S. in biology.</p>
13 BIOL 362/462	Principles of Developmental Biology	<p>The descriptive and experimental aspects of animal development. Gametogenesis, fertilization, cleavage, morphogenesis, induction, differentiation, organogenesis, growth, and regeneration. Students taking the graduate-level course will prepare an NIH-format research proposal as the required term paper.</p>
14 BIOL 363/463	Experimental Developmental Biology	<p>This laboratory course will teach concepts and techniques in developmental biology. Emphasis will be on the mechanisms that pattern the embryo during development and how these mechanisms are explored using molecular, cellular, and genetic approaches. A term research paper is required. Students taking the graduate level course will prepare a grant proposal. One laboratory and one lecture per week.</p>
15 BIOL 365/465	Evo-Devo: Evolution of Body Plans (heavily developmental biology)	<p>This discussion-based course offers a detailed introduction to Evolutionary Developmental Biology. The field seeks to explain evolutionary events through the mechanisms of Developmental Biology and Genetics. The course is structured into different modules. First we will look at the developmental genetic mechanisms that can cause variation. Then we focus on how alterations of these mechanisms can generate novel structural changes. We will then examine a few areas of active debate, where Evo-Devo is attempting to solve major problems in evolutionary biology. We will conclude with two writing assignments. Students will be required to present, read, and discuss primary literature in each module.</p>
16		

Biology Electives
Approved for Proposal

A	B	C
<p>BIOL 373/473</p> <p>17</p>	<p>Introduction to Neurobiology</p>	<p>How nervous systems control behavior. Biophysical, biochemical and molecular biological properties of nerve cells, their organization into circuitry, and their function within networks. Emphasis on quantitative methods for modeling neurons and networks, and on critical analysis of the contemporary technical literature in the neurosciences. Term paper required for graduate students. This course satisfies a lab requirement for the B.A. in Biology, and a Quantitative Laboratory requirements for the B.S. in Biology.</p>
<p>BIOL 374/474</p> <p>18</p>	<p>Neurobiology of Behavior</p>	<p>In this course, students will examine how neurobiologists interested in animal behavior study the linkage between neural circuitry and complex behavior. Various vertebrate and invertebrate systems will be considered. Several exercises will be used in this endeavor. Although some lectures will provide background and context on specific neural systems, the emphasis of the course will be on classroom discussion of specific journal articles. In addition, students will each complete a project in which they will observe some animal behavior and generate both behavioral and neurobiological hypotheses related to it. In lieu of examinations, students will complete three written assignments, including a theoretical grant proposal, a one-page Specific Aims paper related to the project, and a final project paper. These assignments are designed to give each student experience in writing biologically-relevant documents. Classroom discussions will help students understand the content and format of each type document. They will also present their projects orally to the entire class.</p>

Chemistry Electives
Approved for Proposal

A		B	C
1	Course No.	Course Title	Course Description
	CHEM 328/428	Biochemistry	A survey of modern biochemistry as viewed from a chemistry perspective. Amino acids and peptides. Protein structure, folding, and dynamics. DNA and RNA. Saccharides, lipids, and biological membranes. Chemical mechanisms of enzyme catalysis. Glycolysis, ATP utilization, and oxidative phosphorylation. Metabolism. Expression and transmission of genetic information.
2	CHEM 329/429	Chemical Aspects of Living Systems	A series of special topics in the chemistry of biological processes at the level of chemical structure and molecular mechanisms. Topics will be chosen from the following: Nature of enzymatic rate enhancements. Coenzyme chemistry. Biosynthesis. Enzymatic and nonenzymatic fatty acid metabolism. Bioenergetics: mitochondrial and photosynthetic electron transport and vision. Neurotransmitters and hormone action. Receptors and signal transduction. Factors affecting biological activity and drug design. Xenobiotic metabolism. Carcinogenesis and DNA repair.
3	CHEM 306 Lecture CHEM 306 Lab	Introductory Physical Chemistry Introductory Physical Chemistry Lab	A one-semester laboratory and lecture course developed to introduce students to a variety of chemical biology laboratory themes including buffering, identification of amino acids, immunoassay, ligand binding, cellular fractionation, enzyme isolation and purification, proteomics, and enzyme kinetics. Techniques include titration, various forms of chromatography, colorimetric assays, electrophoresis, high performance liquid chromatography and liquid chromatography coupled with tandem mass spectrometry.
4	CHEM 333	Medicinal Chemistry and Drug Development	This course provides an overview on how principles in chemistry and biology are integrated to facilitate drug development. Primary emphasis will be placed on the development of organic molecules as drugs and metabolic enzymes as drug targets. Subjects pertinent to the introduction of medicinal chemistry, evaluation of drug efficacies in vitro and in vivo, and drug metabolism will be covered.
5			

Classics Electives
Approved for Proposal

	A	B	C
1	Course No. CLSC 295A	Course Title Greek and Latin Elements in English Offered in the Spring	Course Description The first course of a two-course sequence (see CLSC 295B) in which students, assisted by computer drills on the web, learn the classical foundations (etymology) of modern English as well as the basic principles on which roots, prefixes, and suffixes combine to give precise meanings to composite words. Students will read the textbook and do the computerized drills on their own and then come to class in order to take exams.
2	CLSC 295B	ADV Elements in English: Biomed Terminology Offered in the Spring	This is the second course in a two-course sequence (see CLSC 295A) on the etymology of English words. The advanced section is oriented especially toward scientific and medical terminology. Students will read the textbook and do the computerized drills on their own and then come to class in order to take exams. Prereq: Previous or concurrent registration in CLSC 295A.
3			

Dance Electives
Approved for Proposal

A		B		C
Course No.	Course Title	Course Description		
1	DANC 445 Kinesiology for Dance	Seminar and laboratory for assessment of kinesiological and biomechanical principles as related to dance. Assessment of current research will be implemented to affect cross-training protocols.		
2	DANC 446 Topics in Dance Medicine, Science and Wellness Offered every spring semester	Review and application of continually emerging information from the fields of Dance Medicine and Science that impacts general dancer health and the care and prevention and treatment of dance specific injuries. Participation in the Dancer Wellness Program is encouraged to facilitate continued application of principles developed in DANC 345.		
3				

Political Sciences Electives
Approved for Proposal

A	B	C
1. Course No.	Course Title	Course Description
POSC 483	Health Policy and Politics in the United States	This course is an overview of the principal institutions, processes, social forces, and ideas shaping the U.S. health system. Historical, political, economic, and sociological perspectives on the health system are explored as well as the intellectual context of recent policy changes, challenges, and developments. Students will acquire a sense of how health services are financed and delivered in the U.S. They will also learn how to assess its performance compared to that of other similar countries.
2.		

A	B	C
Course No.	Course Title	Course Description
1	PSCL 230 Child Psychology	Basic facts and principles of psychological development from the prenatal period through adolescence. Recommended preparation: PSCL 101.
2	PSCL 317 Health Psychology	Examines psychological processes that affect physical health. Covers the physiological factors affecting the immune system, chronic physical disorders, pain, compliance with prescribed medical treatments, the effects of stress and coping, the hospital and the health care systems. PREREQUISITE: PSCL 315
3	PSCL 321 Abnormal Psychology	Major syndromes of mental disorders; their principal symptoms, dynamics, etiology, and treatment. PREREQUISITE: PSCL 101
4	PSCL 352 Physiological Psychology	The nervous system as it relates to behavior. PREREQUISITE: PSCL 101
5	PSCL 344 Developmental Psychopathology	This course will focus on the interplay of biological, psychological, familial, and social determinants of disorders ranging from autism to delinquency and bulimia. PREREQUISITE: PSCL 230 or PSCL 321.
6	PSCL 369 Adult Development and Aging	An overview of concepts and research relating to adult development and aging. The lifespan perspective will be used in examining major developmental paradigms. Personality and cognitive lines of development will be traced across the lifespan. Data from both longitudinal and cross-sectional studies will be analyzed. Both normal and pathological aging will be discussed. Special emphasis will be given to areas of cognitive deterioration in aging. Implications for optimal adult development and again will also be discussed.
7	COSI 101 Introduction to Health Communication	An introductory examination of the influences associated with the functions of human life, communication processes, and research related to health and the health care industry from interpersonal, cultural, and organizational communication perspectives. We review the history and development of the field of health communication, introduce research that examines and tests communication theories regarding health, diffusion of health information, and real world application related to findings.
8	COSI 109 Introduction to Communication	Disorders Forty-two million Americans have some type of communication disorder. How does a person with a communication disorder cope with the challenges of daily living? This course will examine the characteristics of communication disorders via first-hand and fictionalized accounts in books, films, and simulated communication disorders experiences. Topics will include disorders of speech, language, and hearing in children and adults, and the effects of communication disorders on families.
9	COSI 340 Theories of Health Communication	This is an advanced examination into the theories and scholarship of health communication. Various communication processes assume a central role in the acquisition and enactment of health care. This course examines communication activity across a broad range of health care contexts. Attention will be given to provider-client communication, communication and ethical concerns, persuasive health promotion efforts, media impact on health, and health communication theory development, research, and methodology. Prerequisite: COSI 101.
10	COSI 200 Interpersonal Communication	Communication is a primary means of initiating, maintaining, and dissolving relationships. Managing interpersonal relationships is a human concern across several contexts. Interpersonal communication considers the role of communication in personal relationships, including family, friendship, romantic, and other contexts. Concepts for study include communication competence, family interaction, relational messages, and conflict.
11	COSI 260 Multicultural Aspects of Human Communication	Introduces intercultural/interracial communication principles and theory and includes the exploration of differences in perceptions and use of verbal and nonverbal communication messages. The course emphasizes relationships between communication, race, culture, nature of race and culture; and how they influence the communication process. We also discuss practical outcomes that can encourage more positive intercultural/interracial encounters.
12	COSI 280 Organizational Communication	This course includes a review and analysis of the development of organizational communication theories associated with social interaction in the workplace. The course addresses communication challenges that contemporary organizational leaders and members face and strategies used to develop analytical and practical skills that promote success in interactions in diverse organizational situations and cultures.
13	COSI 332 Persuasion	This survey course is an introduction to persuasion and attitude change, and includes the history, dynamics, and theories of persuasion. There is an extensive focus on persuasive strategies and models of attitude change. The course aims to develop an understanding of principles of persuasion and the practical application of those principles in life and career situations.
14	COSI 345 Communication and Aging	This course addresses the normal and abnormal psychobiological changes that occur during aging and their effects on communication. Topics of discussion will include communicative interaction styles, disordered communication, and rehabilitation practices.

Religion Electives
Approved for Proposal

A		B		C
Course No.	Course Title	Course Description		
1 RLGNXXXX	Health, Body and Sexuality in Chinese Religions	This course (not yet approved) explores classical and contemporary understandings of the body, health, and sexuality in Chinese religions. It will explore the emergence and developments of Chinese approaches to health, e.g., diet, meditation, acupuncture, moxibustion, alchemy, etc. that are shaped by religious understandings of nature, body, and cosmos (five phases, yin/yang, etc.), the linkages between sexuality and health, as well as their contemporary significance and implications.		
2 RLGNXXXX	Religious Studies for Future Healthcare Professionals	This class (it has already been approved) will provide future healthcare professionals with the basic knowledge of religious studies and of topics pertaining to death and dying, sickness, suffering, and so on. Students will also gain a basic knowledge of related bioethical issues as they are found in the world's religions. The primary aim of the course is to offer future healthcare professionals an awareness of the diverse religious backgrounds of patients and issues that they might encounter and to provide a basic understanding of religious studies in the process.		
3				

Sociology Electives
Approved for Proposal

A		B		C	
Course No.	Course Title	Course Description			
1 SOCI 344	Health Disparities	We have come to understand that stark disparities in health result from the social organization of society, especially inequality in resources and opportunities between and within social groups in the population. This seminar course examines the differential distribution of health and illness in society, focusing on the social determinants of health. Topics include: socioeconomic inequality; geographic context; social cohesion and exclusion; health burden in minority populations; policy and federal priorities. We utilize a life course perspective to understand how inequality "gets under the skin" to produce adverse health. Offered as SOCI 344 and SOCI 444.			
2 SOCI 275	Lives in Medicine: Becoming and Being a Physician	This course applies a sociological approach to medical profession. Medical sociology emerged as a distinct field of study in the 1950s in part due to prominent studies of medical education such as The Student Physician by Robert K. Merton and Howard Becker's Boys in White. Since then, sociologists and other social scientists have written extensively about how issues of race, gender, aging and ethnicity are tied to issues of medical education, medical training, medical socialization and physician decision-making. Using a life course perspective, this course will examine how lives in medicine change over time; in particular, we'll study changing workforce patterns, physician satisfaction, and burnout. Other topics to be covered include contemporary ethical issues and alternative professional health careers. The course provides an overview of how medicine and medical practice have a profound influence on--and are influenced by--social, cultural, political and economic forces. In short, you'll become familiar with how scholars outside of medicine cast a sociological gaze on the profession.			
3 SOCI 365	Health Care Delivery	Health care in the U.S. may be approaching a critical cross-road. Limiting care to older persons and the chronically ill has been proposed as a means to combat rising costs and limited access to health care. What are the alternatives to health care rationing? Socialized medicine? National health insurance? This course deals with issues of cost, quality, and access to health care in the United States and other societies; it considers how solutions by other societies can provide directions for the organization of health care in the U.S. Offered as SOCI 355 and SOCI 455. Prereq: SOCI 101 and Sophomore standing.			
4 SOCI 311	Health, Illness and Social Behavior	This course considers the role of social factors (e.g., poverty, occupational and family structure) on health and illness. Discussion will concentrate on the role of health promotion (e.g., anti-smoking campaigns), social behavior and lifestyle in health and health care use. Considerable attention is given to understanding health careers and professions and their role in the health of societies and individuals. Offered as SOCI 311 and SOCI 411. Prereq: SOCI 101 and Sophomore standing.			
5 SOCI 345	Sociology of Mental Illness	Focus is on social construction of mental health and illness and sociology of emotions. Social determinants of psychological distress will be discussed along with social stigma associated with mental illness. Institutional and community options for care of the mentally ill will be considered along with the impact of recent social movements of deinstitutionalization and independent living. Offered as SOCI 345 and SOCI 445. Prereq: SOCI 101 and Junior/senior standing.			
6 SOCI 364	Disability and Society	This course considers and examines the relationship between disability and society. The course covers how we define, represent, and react to disability in modern society. This includes an analysis of stigma and discrimination. We also explore the timing and experience of disability from a life-course perspective. Finally, we examine the political, social, and economic influences on disability, including the Disability Rights movement. Offered as SOCI 364 and SOCI 464. SOCI 101 and sophomore standing.			
7 SOCI 264	Body, Culture and Disability	This course examines the ways that the body is constructed through culture, media, and policy and how that, in turn, defines disability. Students will explore the socio-historical shifts in views and treatment of the body, as a way to understand how this is used to classify, marginalize and contain social differences. We trace these trends through the American Freak Show to present day Disability Determination Processes in the Social Security Administration. We further explore how historical perspectives of the body "carry forward" through social institutions such as health care, religion and education.			
8 SOCI 361	The Life Course	Individual experiences and transitions over the life course are considered as the result of societal, cultural, psychological, biological, and historical influences. Developmental issues of childhood, adolescence, young adulthood, middle years and late life are discussed in the context of social expectations, challenges, and opportunities. Emphasis is placed on theoretical readings. Offered as SOCI 361 and SOCI 461. Prereq: SOCI 101 and Sophomore standing.			
9 SOCI 443	Medical Sociology (grad. only)	Course covers theories, research methods, and problems in sociology of medicine. Topics include social epidemiology, health and illness behavior, and sick role. Structures and functions of delivery systems and their interrelationships with other social institutions are discussed.			
10					

Appendix E: Memorandum of Understanding



MEMORANDUM OF UNDERSTANDING

PRIME (Post-Baccalaureate Readiness Instruction for bio-Medical Education) Program

Whereas the Case Western Reserve University (CWRU) School of Medicine (SOM) and College of Arts and Sciences (CAS) jointly propose a distinctive pre-medical, post-baccalaureate, non-degree certificate program, the following terms and conditions are agreed to:

- The SOM and CAS will equally share all program startup expenses. The startup period is considered to be the time before students matriculate. Current estimates are:

Interim program staffing (June-Aug 2017)	\$50,000
Part-time effort of current department assistant (June-Aug 2017)	\$7,000
Program marketing materials	\$10,000
TOTAL STARTUP EXEPNSES	\$67,000

- The program director will be jointly hired by and report to faculty directors: Cheryl Thompson, PhD, Assistant Professor, Department of Nutrition and Director of Master's Programs, SOM, and Jill Korbin, PhD, Professor of Anthropology and Associate Dean, CAS. The program director and department assistant will be administratively housed and located in the SOM. Expected hire date for program director: September/October 2017. Depending on actual approvals and start dates for the program, these expenses may be less costly than currently estimated.
- The annual operating expenses are expected to be share equally by the SOM and CAS:

Full-time program director (including benefits)	\$100,000
Part-time effort of department assistant (including benefits)	\$26,000
Program marketing materials	\$10,000
SOM GEO (% of office based on # program students)	TBD (est. \$20,000)
Indirect expenses (TBD)	TBD
TOTAL OPERATIONAL EXEPNSES	TBD (est. \$166K+)

- The SOM and CAS will each be individually responsible for instructional expenses necessary to offer the program's required or elective courses.
- Tuition will be charged on a per credit hour basis and students will be charged the most current graduate tuition rate.

- The net tuition revenue will be allocated to the management center based on the proportion of credit hours the PRIME program students take in each management center and up to the first 36 students annually. Tuition revenue will be shared equally for students beyond this headcount.
 - The program director will be responsible for maintaining student enrollment reports for this purpose. The agreement will serve for the first two years and will then be re-evaluated.
 - Net tuition will be calculated based on: Total tuition of the program less University fees less total operational expenses.

- It is our understanding that neither the SOM, nor the CAS, will incur increased indirect expenses for PRIME students as they are considered to be non-degree students. In the event that either school does incur increased indirect expenses, the schools will work together to determine the amount of this expense, which will be allocated as a direct cost of the program. Jon Carlson, Vice President for Financial Planning, will be asked to assist in the calculation and determine a fair indirect expense charge, if necessary.

- In any year where the program is running in deficit, for example, due to very low enrollment, loss will be split evenly between SOM and CAS.

- SOM and CAS agree work collaboratively towards a goal of equal proportion of credit hours taken by PRIME participants in each management center. Both schools recognize that it's difficult to accurately determine this proportion, but each school may create new courses or offerings that enable an equal distribution of credit hours taken in both management centers.


- The PRIME steering committee will be charged with establishing an evaluation component for the program to measure:
 - Program interest/demand as indicated by quantity and quality of applications
 - Student engagement and satisfaction
 - Medical school admissions outcomes
 - Program curricular content
 - Program operations

- The steering committee will be co-chaired by Professors Cheryl Thompson and Jill Korbin, who will each appoint two members from their respective management centers for a two-year term. In addition, the co-chairs will jointly appoint a CWRU Health Career staff member. Initial steering committee members are:
 - Paul MacDonald, PhD, Associate Dean of Graduate Studies, SOM
 - Henry Ng, MD, Assistant Dean of Admissions, SOM
 - TBN, CAS
 - TBN, CAS
 - Steven Scherger, PhD, Director of Health Career Advising, Undergraduate Studies

- Annually, the finance representatives of both schools will meet after the Spring semester add/drop deadline to reconcile the program revenues and expenses to determine any net financial distributions/payments. This reconciliation will be presented to the Steering Committee for their input and guidance. Payments will be due prior to the year end. There may arise a need for a year end reconciliation, but the finance representatives will determine if this is necessary and the associated impact.
- This memorandum of understanding will be reviewed and updated by the SOM and CAS every two years, unless SOM and CAS agree to a different term.
- In the event of a material change, the SOM and CAS will meet to revise the agreement. A material change includes: financial losses in any given year that is projected to continue for another year, implementation of the UBC proposed rate for intra-school graduate student teaching, or significant departure from the planned student experiences / outcomes.

Pam Davis, Dean
School of Medicine

Cyrus Taylor, Dean
College of Arts and Sciences

From: Matthew Lester mxl805@case.edu 
Subject: Final DRAFT of PRIME Proposal
Date: March 20, 2017 at 5:42 PM
To: Beth Trecasa bmt5@case.edu
Cc: Cheryl Thompson clw8@case.edu

ML

Beth,

Thanks so much for your efforts on this project and with the proposal. Attached is the redline version that the SOM is willing to support. If you're amenable to the edits, please proceed with a clean copy. I'm open to additional changes, so please send them our way.

Also, we recognize that the agreement is our best estimate as to the future of the program, but things will change, so we'll need to stay in touch and work through what ever arises in the future.

Please feel free to email or call (267-872-7021) if you have any questions for edits.

Thanks,

Matthew

Matthew J. Lester, MBA, MHA
Senior Associate Dean for Finance
Case Western Reserve University School of Medicine
10900 Euclid Ave.
Cleveland, OH 44106-4916
Phone: [216-368-8676](tel:216-368-8676)



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Cyrus C. Taylor, Dean
Albert A. Michelson Professor in Physics

College of Arts and Sciences
Crawford Hall, Room 712
Case Western Reserve University
10900 Euclid Avenue
Cleveland, Ohio 44106-7068

MEMORANDUM

TO: Faculty Senate Executive Committee

Phone 216-368-4437

FROM: Cyrus Taylor

A handwritten signature in black ink, appearing to read "Cyrus Taylor".

Fax 216-368-3842

1-800-515-2774

cyrus.taylor@case.edu

DATE: April 5, 2017

SUBJECT: PRIME Certificate Program

I am pleased to offer my strong support of the proposed pre-medical post-baccalaureate certificate program, PRIME (Post-baccalaureate Readiness Instruction for bioMedical Education). This program was jointly developed by the College of Arts and Sciences and the School of Medicine and draws on key strengths and expertise in both schools.

The PRIME Program is designed to qualify and prepare post-baccalaureate students for admission to well-ranked medical schools. PRIME students have the opportunity to take undergraduate and graduate courses, receive specialized MCAT preparation and close advising, and have the option to participate in clinical shadowing and research. Select PRIME students will be offered an interview at CWRU's School of Medicine, and we aim to develop similar opportunities at other medical schools.

The program has been carefully developed in consultation with several departments in the College of Arts and Sciences (including Anthropology, Biology, Chemistry, Classics, Dance, History, Political Sciences, Psychological Sciences, Religious Studies, and Sociology) and in response to feedback from the college's Graduate Committee; Budget Subcommittee; Committee on Educational Programs, and College Strategic Planning Steering Committee. I am pleased to report that the proposal just received the approval of the Faculty of the College of Arts and Sciences on March 31, 2017.

I believe the proposal reflects close consideration and collaboration. I greatly appreciate the Faculty Senate's review and consideration. Please do let me know if there is any additional information that I can provide.

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
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casemed.case.edu

December 21, 2016

Peter Harte
Chair, Faculty Senate
c/o Rebecca Weiss, Secretary of the University Faculty
Adelbert Hall
7001

Dear Professor Harte:

As noted in the accompanying memo from Dr. Maureen McEnery, Chair of the School of Medicine's Faculty Council, the Faculty Council has recommended approval of the Post-baccalaureate Readiness Instruction for biomedical Education (PRIME) Pre-Medical Post-Baccalaureate certificate program.

This program will improve students' knowledge, preparedness, and experience in an effort to increase the likelihood of their acceptance to well-ranked medical schools. Students in the certificate program take undergraduate level science courses to improve their GPA, receive specialized MCAT preparation, participate in regular meetings with one or more advisors, and engage in clinical experiences. The program includes two pre-medical Clinical Inquiry courses that utilize the School of Medicine's approach to the learner-centered and self-directed Western Reserve2 (WR2) curriculum. Select PRIME students will be offered an interview at CWRU's School of Medicine.

The proposal approval process is outlined in Dr. McEnery's memo. An ad hoc Committee was convened to review this new program and, after revisions and multiple presentations, the program was approved by the Faculty Council.

I concur with the Faculty of Medicine and recommend approval of this certificate program.

Please submit the proposed certificate program 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: Maureen McEnery, Chair, Faculty Council
Nicole Deming, Assistant Dean for Faculty Affairs and Human Resources, SOM

enclosures



Memorandum

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

From: Maureen W. McEnery, PhD, MAT
Chair of the Faculty Council

Re: PRIME (Post-baccalaureate Readiness Instruction for bioMedical Education) Pre-Medical Post-Baccalaureate Certificate Program

Date: Dec. 16, 2016

At its October 21, 2016 meeting, the Faculty Council voted in favor of recommending the PRIME (Post-baccalaureate Readiness Instruction for bioMedical Education) Pre-Medical Post-Baccalaureate Certificate Program to your office.

In accordance with our SOM practices, an *ad hoc* committee composed of members of the Faculty Council Steering Committee, Graduate Directors, the SOM members of the Faculty Senate's Committee on Graduate Programs, and the Associate Dean for Graduate Education was created to review the program proposal. The *ad hoc* committee was chaired by Nicholas Ziats. The *ad hoc* committee reviewed the document, discussed the proposal, and engaged with the program presenter.

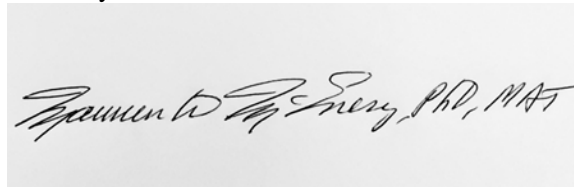
This program was initially reviewed at the Sept 19 Faculty Council meeting, and, at that time, additional questions remained after a lengthy discussion. The program was tabled for follow-up at the Oct meeting, allowing the members of the Faculty Council to email Cheryl Thompson if they had questions that required additional clarification. As noted above, after discussion at the Oct meeting, the Faculty Council approved the program with its vote.

After your review, I hope you will join me in recommending PRIME (Post-baccalaureate Readiness Instruction for bioMedical Education) Pre-Medical Post-Baccalaureate Certificate Program for approval by the Faculty Senate, as required by the Faculty Handbook.

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

Thank you very much for your consideration.

Sincerely,



Maureen W. McEnery, Ph.D, MAT
Chair of the Faculty Council
Associate Professor of Neurology
Associate Professor of Neuroscience
University Hospitals of Cleveland Medical Center
Case Western Reserve University School of Medicine

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

1. Please review the courses that count towards the Science GPA. Medical Anthropology, Bioethics, and Population Health may not fall into this category.

Apologies for this editing error. We have now revised and clarified the lists of courses that count toward the Science GPA and Overall GPA (pages 7-9).

2. Concern was expressed that only 300 level ANTH are listed and not the cross-listed 400s

Apologies for this editing error. As the department chair letter of support indicates, the program has approval for students to take either 300- or 400-level Anthropology courses.

Since 300/400 courses can be a moving target, we decided to add the following:

“Please note that in the case where a 300 level version of a course is added to a 400 level course, or a 400 level version of a course is added to a 300 level course, both would be acceptable to meet program requirements” Ultimately, whichever level (300 or 400) that a student enrolls in will dependent upon each student’s individual preparation and needs, as well as having the necessary perquisites” (page 7).

3. One member advised that to best prepare for the MCAT, CWRU students take 3 semester of biology, not only the two that are required. If PRIME students are to only take 2 courses, then it should be BIOL 214 and 216 and the, not BIOL 215. While the new MCAT has more of the 215 content on it, it would still be better for these students to take 214 and 216. This does not have to change in the proposal, but PRIME leadership should be aware of this.

We have revised program requirements to include 214 and 216 and made 215 an elective, which will be recommended if they have not already taken it (page 6, 8).

4. Concern was expressed about the disparity of the resources for this program in the way of advising and support compared to what is offered in the other post-bac programs in SOM.

The way things are administratively structured now in the SOM is that all academic and career advising is the responsibility of each individual program. In the School of Medicine Graduate Education Office, we (Cheryl Thompson and Paul MacDonald) have been working over the last couple years to develop more resources for students across the SOM. For example, we have added a seminar series directed at pre-med Master’s students, and have added an annual “how to mentor your student to get into medical school” seminar for faculty. That said, we do recognize that not all academic advisors are equally qualified or enthusiastic about mentoring students for medical school. That is the reason we felt so very strongly about having a dedicated pre-health advisor as the program director for PRIME. The SOM Graduate Education Office strongly encourages any program that considers itself a post-bac program to incorporate these advising resources for their students as well.

5. There needs to be a structured system for coordinating registration, student progress, and monitoring the courses that the students take.

A requirement for having a planned program of study on file with Graduate Studies was added (page 3).

6. Clarify the GPA requirement and the statement that....successful completion is a 3.5 GPA. The rationale for including this statement is not clear. How will this impact a student that receives a lower GPA (e.g., a 3.49)?

We have lowered the GPA to 3.0 to obtain the certificate (page 14). This is now consistent with what we expect master's students to graduate with. However, to be competitive for medical school, we would really expect students to have a significantly higher GPA.

7. Please double check with MCAS and their GPA reporting criteria (undergrad versus postbac)

Undergraduate courses taken as part of the PRIME program would be separated out as post-bac GPA, but would also be included in the undergraduate GPA. This is consistent with the AMCAS instruction manual as described on page 9: https://aamc-orange.global.ssl.fastly.net/production/media/filer_public/c0/f8/c0f8833d-a302-46c7-b726-1b153dbac6de/2017_amcas_instruction_manual_final.pdf

We have clarified this on page 5 of the proposal.

8. A problem area is that non-degree Y1 PRIME students are able to register for Fall semester classes before entering Y1 UG students (late May for PRIME vs. July 1 for UGs)

Yes, we agree this is an issue. The CAS has previously consulted with the Registrar on the topic of restricting/delaying enrollment on certain courses for certain program students. This strategy was originally explored based on an overwhelming number of non-CAS master's students enrolling/attempting to enroll in CAS undergraduate and graduate courses. We will coordinate with the registrar's office to work through our options with regard to this as it relates to PRIME students as well.

9. There were a number of issues that were raised concerning undergraduate education and the undergraduate experience including:

- a. availability of courses, particularly chemistry and biology labs**
- b. the effect on the UG student body, if these students need to be taught differently than a traditional Case UG because of an inadequate background**
- c. lack of communication with Biology and other faculty**
- d. other areas**

The College of Arts and Sciences and the School of Medicine began collaborating on the development of the PRIME program in the Fall 2015 semester. The programmatic and curricular model for PRIME were agreed upon during the Spring 2016 semester.

In follow up to discussion of the PRIME program at the CAS Chair Council on March 4, 2016 and in advance of submitting the program proposal for a preliminary review by the CAS faculty committees on April 21, 2016, Jill Korbin and Beth Trecasa, queried all CAS department chairs about participating in the PRIME program, requesting feedback on capacity, approval for PRIME-required and -elective courses, and suggestions for additional electives. For departments with required courses, a list of enrollments and capacity (as noted in SIS) for the most recent three academic years, including summers, was also provided.

As the letters of support indicate, all department chairs with PRIME-required courses approved the inclusion of courses in the program, some also suggested additional electives. These departments also provided more specific feedback on capacity in specific courses. Generally, chairs felt that coordination with the program and inclusion of PRIME students was possible, although sometimes requiring additional course sections. The notable exception was if all PRIME students or a significant numbers simultaneously needed the same course, especially an introductory course (an unlikely outcome and one the program will be managed to avoid). Many other CAS department chairs offered additional elective courses to be included.

The PRIME proposal received feedback from the CAS faculty committees (Committee on Educational Programs, Graduate Studies Committee, Budget Committee, and the College Strategic Plan Steering Committee) which was used to revise the proposal before submitting for review by the SOM Faculty Council in the Fall 2016 semester; the proposal was approved by this body on October 21, 2016. Resubmitting the PRIME proposal to the CAS Committee on Educational Programs for final committee approval was significantly stalled between October 2016 and March 2017 by revenue negotiations between the CAS and the SOM. Updates as to this stalled status were provided monthly at CAS Chair Council and faculty committee meetings.

A meeting between the deans of each school was scheduled for March 17, 2017 to discuss and agree on terms and allow the PRIME proposal to return to the CAS review and approval process. In advance of this meeting, Dean Taylor, Jill Korbin, Beth Trecasa, and Associate Dean Molly Berger met with the biology department chair, Mark Willis, to discuss two issues:

- the PRIME program and course capacity in the department of biology and
- non-CAS master's students (predominately from the SOM medical physiology program) overloading biology courses (especially in the Summer).

The group discussed the increasing demand and decreasing capacity in biology course (especially introductory course), related complications, and strategies to address challenges. The role of the program director in advising PRIME students on appropriate courses and coordinating capacities with all departments was affirmed.

An additional meeting with this group and members of the biology department had already been scheduled (and remains scheduled) to discuss these issues more specifically with faculty teaching the most in demand biology course (April 21, 2017).

The CAS and SOM deans agreed to final terms for PRIME during the March 17th meeting. Since this was not expected to be resolved so soon, Mark Willis was soon contacted with this update and next steps, including the CAS Curriculum on Educational Program's review of the PRIME proposal on March 24th and the potential for a CAS faculty vote on March 31st. The program's commitment to continue the conversation to resolve issues and coordinate enrollments was also reaffirmed. The PRIME proposal was approved by the CAS faculty on March 31st after discussion, in particular were similar questions as discussed with Mark Willis from biology faculty members. Following the program's approval by CAS faculty, Jill Korbin and Beth Trecasa have continued discussions and had multiple meetings with Mark Willis and again plan to meet with Dean Taylor and the biology department on April 21st. We are hopeful that our strategies to coordinate implementation of the PRIME program will also bring about improvement in the coordination of capacity and enrollments in biology courses overall and as it relates to SOM master's students seeking to study biology and other subjects in the CAS.

Report on FSCUE Discussion of PRIME Program Proposal

Most of our 4/18 meeting was taken up with a discussion of the PRIME proposal. We heard from two visitors: Mark Willis, chair of Biology and Jill Korbin, Associate Dean in CAS. Since this is a post-baccalaureate program, FSCUE's primary concern was the impact of the PRIME program on the undergraduate experience.

FSCUE voted to approve this proposal (with one member voting against it), although several reservations were expressed. One of our student representatives felt that this program would have a very negative impact on biology and bio chem majors, who already have a hard time getting into their required classes. FSCUE as a whole was troubled by the large size of the introductory science classes. FSCUE recommendations are given below.

- Some of the revenue generated by this program should be used to reduce class sizes, by adding sections and instructors, and to increase lab space for classes taken by first year students.
- Given the pattern of biology enrollments, a spring start date for the PRIME would be helpful, since that would cause the PRIME students to enroll in the introductory biology classes in the semesters with lower enrollments.
- Dedicated labs for the PRIME students, in the early mornings or in the evenings, might help to reduce the impact of the new enrollments on lab classes.

Potential impact on Biology course enrollments from the PRIME (Post-baccalaureate Readiness Instruction for biomedical Education) Program and non-CAS MS degree students

Brief overview of PRIME

- A Program Action Form (PAF) has been submitted and approved 3/24/17 by the CEP for the PRIME certificate program.
- The PRIME program will be voted on by the CAS faculty (faculty meeting 3/31/17), the Faculty Senate and the Board of Trustees.
- It is a joint program between CAS and SOM aimed to improve undergraduate GPAs, MCAT scores and provide experiences to be a competitive applicant for highly ranked medical schools.
- A tuition agreement between CAS and SOM was settled on late March 2017.
- Students in PRIME are non-degree students paying graduate-tuition rates.
- PRIME start date is this fall (Fall 2017).
- Anticipated enrollment: 20 students 1st year, 35 2nd year, and 50 in 3rd year
- By year three the anticipated enrollment is 50 students/year. This cap will be reevaluated once the program has been established (i.e., could become higher)

Some specifics of the PRIME program

- To earn the certificate students must complete 24 credits with a minimum GPA of 3.5. However, a student could take up to 60 credits, if the student has none of the medical school prerequisites upon entering the program. Thus, depending on the student's prior coursework the program is 1-2 years.
- 6 of the 24 credits will be taken through SOM (MGRD 310 and 311 are required courses). The rest of the credits will be selected from CAS and SOM course offerings (see PAF for full list of courses)
- There is also an MCAT preparatory course. It is not a requirement for PRIME students, but they have preference before other CWRU undergraduate and graduate students can enroll.
- According to the PAF, there will be an effort to balance the number of classes taken through CAS and SOM.
- There are two tracks in PRIME:
 - *Career-Changers*: Students who do not have the course requirements to enter medical school.
 - *Academic-Enhancers*: Students who did not earn a high enough GPA in their undergraduate science course work to be a competitive applicant.
- According to the CAS Dean's Office they anticipate 5-10 career-changer students and 35-40 academic-enhancers per year.
- There will be a dedicated program director to advise PRIME students.
- Optional opportunities will be available for students to shadow community physicians, attend grand rounds or participate in research. These opportunities will be facilitated by the program director and SOM Graduate Education Office.
- Shared startup costs of ~ 67K. Annual operating costs anticipated to be between 166K – 200K.

For the Department of Biology to consider:

Potential impact on lower divisions BIOL Courses

- Career-changers will have to take BIOL 214 and BIOL 214L, and BIOL 215/215L or BIOL 216/216L to meet a medical school requirement.
- Academic-enhancers, who earned a C or lower, may need to repeat one or more of these core courses.
- Many of the PRIME BIOL elective courses (see below) require BIOL 214, 215 and/or BIOL 216) as a prerequisite. Thus, if a student does not have the prerequisite(s) or equivalent course(s) they may need to take one or more core courses to enroll in upper level classes.
- Some of the core course offerings are at capacity (e.g., spring BIOL 216 and BIOL 216L cannot meet the demand of current undergraduates due to space limitation)
- Core course enrollments range from ~80-350 students during the regular academic year. An available seat in a classroom does not necessarily mean that a class is not at or surpassing capacity depending on the faculty's teaching practices and the experience they wish their students to have.

Potential impact on upper division BIOL courses

- Because most of the anticipated PRIME students will be academic-enhancers these students will be taking upper-division SOM and CAS classes to improve their science GPA.
- Below is the list of the approved BIOL electives for the PRIME Program as stated in the PAF:

BIOL 301/401 Biotechnology Laboratory
BIOL 302 Human Learning and the Brain
BIOL 333 The Human Microbiome
BIOL 340 Human Physiology
BIOL 346 Human Anatomy
BIOL 416 Fundamental Immunology
BIOL 417 Cytokines: Function, Structure, and Signaling
BIOL 424 Introduction to Stem Cell Biology
BIOL 427 Functional Genomics
BIOL 342/442 Parasitology
BIOL 343/443 Microbiology
BIOL 352/452 Ecology and Evolution of Infectious Diseases
BIOL 362/462 Principles of Developmental Biology
BIOL 363/463 Experimental Developmental Biology
BIOL 365/465 Evo-Devo: Evolution of Body Plans
BIOL 373/473 Introduction to Neurobiology
BIOL 374/474 Neurobiology of Behavior

- Some of the BIOL electives approved for the PRIME program are some of Biology's most impacted classes and cannot support the current undergraduate demand.

- Other elective classes may be capped due to pedagogical reasons and will not be able to support additional students without considerable cost (e.g., offering additional sections, increased GTA and UTA support, laboratory preparation support, etc.)

Registration Times:

- According to the Registrar's Office non-degree students register for classes *after* graduate and undergraduate students register for courses.

Summer enrollments:

- PRIME students may enroll in summer courses. Therefore, summer enrollments in BIOL courses may increase.
- Currently there is no GTA or UTA support for summer classes.

Brief overview of non-CAS MS students and their impact on BIOL Course enrollments

- In the past several years there has been an increased demand for non-CAS MS students to enroll in BIOL 400-level (graduate level) courses.
- There has also been an increase in the number of non-CAS MS students wishing to enroll in undergraduate courses. These students may be using the MS program as a bridge to health professional schools. However, because these schools only accept undergraduate science GPAs, a population of these graduate students would like to take undergraduate courses to boost their undergraduate science GPA.

Questions to consider:

1. Has the Department of Biology been offered any additional resources (e.g., GTA support, increases instructional support, lab materials, lab space, increased UTA budget, etc.) to offset the potential increase in demand for our courses and potential research opportunities? If it's a wait-and-see approach, how quickly will these resources become available to us?
2. How are we to meet the needs of undergraduates, CAS graduate, PRIME and non-CAS MS students given the fact that some BIOL classes are at capacity or cannot grow to accommodate more students?
3. If summer enrollments increase, will there be increased compensation for faculty teaching those courses? Will there be GTA and possible UTA support?
4. Who will be in charge of reviewing students transcripts admitted into the PRIME program to determine BIOL course equivalency (e.g., meeting prerequisites to take upper level courses)
5. Will the MGRD 310 & 311 classes be open to non-PRIME students?
6. Once the word gets out that this MCAT prep course is available, undergraduate students may demand access. How would this demand be accommodated?

7. An option for PRIME students is to participate in research. Can our research labs (CWRU Biology, CWRU Med, Cleveland Clinic, VA etc.) accommodate these students without additional monetary support? How will this impact our current undergraduates who also desire research experiences?
8. Does this tuition agreement allow non-CAS MS students and PRIME students to enroll in classes during the regular academic year and summer terms?
9. Many potential BIOL electives were not added to the PAF (e.g., BIOL 326 (genetics), BIOL 325 (Cell Biology), etc.) and some of the courses included are on hiatus or not taught regularly. Can classes be removed or added?
10. The number of requests from students for letters of recommendation is likely to increase with the PRIME program. Can faculty reasonably take on more of this workload?

Created 3.28.17

Revised 3.30.17

Created by R. Benard, Ph.D. and S. Burden-Gulley, Ph.D.