

**Faculty Senate Executive Committee**  
Friday, April 10 2015  
9:00a.m. – 11:00a.m. – Adelbert Hall, Room M2

AGENDA

9:00 a.m.	Approval of Minutes from the March 19, 2015 Executive Committee Meeting, <i>attachment</i>	R. Savinell
9:05 a.m.	President's Announcements	B. Snyder
9:10 a.m.	Provost's Announcements	B. Baeslack
9:15 a.m.	Chair's Announcements	R. Savinell
9:20 a.m.	CAS - Origins Major, <i>attachment</i>	J. Ruhl
9:25 a.m.	SOM- MPH/MS in Nutrition, <i>attachment</i>	E. Tracy H. Barkoukis
9:30 a.m.	Policy on Review and Evaluation of Doctoral Student Progress, <i>attachment</i>	E. Tracy M. Singham
9:45 a.m.	Bias Reporting – Next Steps	R. Savinell
9:50 a.m.	USG Resolution on Advising Feedback System, <i>attachment</i>	R. Savinell
10:00 a.m.	Report from School Representative: CSE	A. Abramson
10:05 a.m.	Human Research Protection Policy, <i>attachment</i>	D. Carney S. Rivera
10:20 a.m.	Faculty Handbook: Revisions to Endowed Professorship Provision, <i>attachment</i>	D. Carney
10:30 a.m.	Faculty Handbook: 5-Year Review, <i>attachment</i>	D. Carney
10:40 a.m.	International Affairs Strategic Plan Update	D. Fleshler
10:50 a.m.	Report from School Representative: SODM	Z. Kaleinikova
10:55 a.m.	Approval of Faculty Senate Agenda, <i>attachment</i>	R. Savinell

**Faculty Senate Executive Committee  
Minutes of the April 10, 2015 Meeting  
Adelbert Hall, Room M2**

**Committee Members in Attendance**

Alexis Abramson, CSE  
Bud Baeslack, Provost  
Susan Case, WSOM  
Juscelino Colares, LAW  
Peter Harte, SOM  
Zina Kaleinikova, SODM  
Carol Musil, SON  
Roy Ritzmann, CAS, Vice Chair  
Sandy Russ, CAS, Past Chair  
Robert Savinell, CSE, Chair  
Gillian Weiss, CAS

**Others Present**

David Carney, Chair, Committee on By-Laws  
Nicole Deming, Chair, Faculty Personnel Committee  
Kenny Fountain, Chair, Minority Affairs Committee  
John Ruhl, Chair, FSCUE  
Elizabeth Tracy, Chair, Graduate Studies Committee

**Guests**

Hope Barkoukis, SOM  
Charles Rozek  
Mano Singham

**Absent:**

Barbara Snyder, President  
Sonia Minnes, MSASS

**Call to Order**

Professor Robert Savinell, chair, Faculty Senate, called the meeting to order at 9:00 a.m.

**Approval of Minutes**

The minutes of the March 19, 2015 meeting of the Faculty Senate Executive Committee were reviewed and approved. *Attachment*

**Provost's Announcements**

The Provost reported that the President would not be attending due to illness.

**Chair's Announcements**

Prof. Savinell announced that the Faculty Senate End-of-Year Luncheon is scheduled for May 12<sup>th</sup>. All Executive Committee members are invited. Professor Peter Harte, SOM, has been elected vice chair of the

Faculty Senate for 2015-2016. The Senate budget meeting is scheduled for Friday, May 15<sup>th</sup> from 2:00pm-3:30pm in the Tinkham Veale Center.

Prof. Savinell said he had requested that the SOM submit to the Senate next year the proposal to convert the Department of Anatomy to a division. This will help the Senate consider the impact of the proposed amendment to the SOM By-Laws that defines a division.

### **CAS- Origins Major**

Professor John Ruhl, chair of FSCUE, presented the proposal for an Origins Major from the CAS. This is an interdisciplinary major in the Bachelor of Arts degree that is designed for students looking for a broader, more integrative scientific education, one less focused on a particular discipline. Interested students will include those intending to apply to professional programs such as medicine, law or journalism. The broad scientific base that this major provides will be valuable preparation for these careers as well as for careers in scientific research. Rick Bischoff endorsed the new major because of its ability to attract high quality applicants to the undergraduate program. FSCUE approved the major and letters of support were received from participating departments. The Executive Committee voted to include the Origins major on the agenda for the Faculty Senate meeting. *Attachment*

### **SOM-MPH/MS in Nutrition**

Professor Hope Barkoukis presented a proposal for an MPH/MS in Nutrition. This dual degree program is offered jointly by the departments of Epidemiology and Biostatistics and Nutrition. There are very few programs of this type at other institutions. This will be the 10<sup>th</sup> dual degree program offered by the MPH program. It will not require new resources or new courses and they anticipate one new student each year. The Executive Committee voted to include the dual degree program on the agenda for the Faculty Senate meeting. *Attachment*

### **Policy on Review and Evaluation of Doctoral Student Progress**

Professor Elizabeth Tracy, chair of the Graduate Studies Committee, introduced the policy on Review and Evaluation of Doctoral Student Progress. The proposal had been referred to the Graduate Studies Committee by Mano Singham, Director of UCITE. If adopted the policy will be included in the Graduate Student Handbook. The policy has been under review for the last two years, and feedback was received from faculty and students. Mano Singham said that doctoral students aren't always aware of departmental expectations and they may not receive sufficient feedback until well into their program. The new policy would require an annual review of doctoral student progress. The review has two purposes: i) to support mentoring of students by providing regular and timely feedback, and ii) to evaluate progress toward completion of the degree. Each doctoral program will be responsible for the development of its own annual review format and timing within minimum guidelines. The Graduate Studies Office will monitor the review process by requesting information from schools by June 30<sup>th</sup> each year. A committee member asked whether the policy would be applied to master's degree programs. Prof. Tracy said that there are so many different types of master's degree programs that they had decided to draft a policy for doctoral programs first. Another committee member expressed concern that this policy would add work to already overloaded faculty. The Executive Committee voted to include the policy on the agenda for the Faculty Senate meeting. *Attachment*

### **Bias Reporting System- Next Steps**

Prof. Savinell reminded the Executive Committee about the online bias reporting system that had been discussed at the March 19<sup>th</sup> meeting. He suggested that the Committees on Minority Affairs, Women Faculty and Faculty Personnel be charged with reviewing the system. One of the concerns that faculty have is the

anonymous reporting option. The committee discussed whether this option could be suspended until the Faculty Senate completes its review. The Provost said that he would discuss this possibility with those involved. The committee voted to charge the three committees with review of the system.

### **USG Resolution on Advising Feedback System**

Prof. Savinell suggested that the Executive Committee charge FSCUE with consideration of the USG resolution on an advising feedback system. The committee discussed whether the USG was concerned about advising at all levels and expressed concern that feedback received could be inappropriately used to evaluate faculty (e.g. a SAGES instructor in the English department who may be asked to advise a student about Engineering requirements). The Provost said that in student surveys, advising has risen to the top as an issue of concern. In FSCUE's review all levels of advising should be considered. The committee voted to charge FSCUE with a review of the university's current advising process (at all levels) and to make recommendations on possible assessment tools by looking at what other institutions use. *Attachment*

### **Report from School Representative: CSE**

Professor Alexis Abramson, CSE, reported that she had consulted with the CSE Executive Committee to determine areas of concern. The number one priority is the lack of funding (other than grant funding) available for graduate students. The lack of support makes it difficult to attract high quality students and impacts the School's rankings, the quality of research, and the undergraduate programs since there won't be as many qualified teaching assistants. Most donors want to fund endowed professorships and don't typically provide funding for graduate students.

### **Human Research Protection Policy**

Professor David Carney, chair of the Senate By-Laws Committee, presented a proposal for an expanded human research protection policy. The current policy is included in Chapter 3 of the Faculty Handbook. The expanded policy is required in order for the university's IRB to be accredited by the Association for Accreditation of Human Research Protection Programs (AAHRPP). Once the IRB is accredited, CWRU can join an Ohio consortium of accredited IRB's. The By-Laws Committee had been charged by the Executive Committee in January with reviewing the language of the expanded policy. The By-Laws Committee determined that there were two main issues with the policy. First, while the language of the policy excludes student research or classroom simulations involving human subjects, the exclusion was not clearly defined. A change was made to the policy to address this issue. Secondly, the committee was concerned that the dean/department chair's attestation in the policy could create an unfunded mandate because the dean/department chair is asked to attest that adequate resources are available before funding is secured. The committee agreed that Sue Rivera, Vice President of Research, would revise the language so that the dean/department chair is only required to affirm that the study proposed to be conducted in the department or school could be done responsibly by the study team using the resources described in the proposal. The Executive Committee voted to include the policy as revised on the agenda for the Faculty Senate meeting. *Attachment*

### **Faculty Handbook: Revisions to Endowed Professorship Provision**

Prof. Carney presented revisions to the endowed professorship provision of the Faculty Handbook from the By-Laws Committee. The Committee recommended removing the requirement that a senior endowed professorship be awarded to a *tenured* faculty member. Currently there are senior endowed professorships at CWRU for non-tenured faculty in the SOM and in other schools. Several committee members expressed concern that the proposal would dilute the significance of this award. The committee, by a vote of 8-2, approved including the proposed revisions on the agenda for the Faculty Senate meeting. *Attachment*

### **International Affairs Strategic Plan Update**

David Fleshler, Associate Provost for International Affairs, presented the final version of the Center for International Affairs Strategic Plan Phase II. A draft of the plan had been discussed with the Faculty Senate in January, and since that time the draft plan had been presented to 43 campus departments and groups involving over 500 participants. As a result of these meetings and feedback received, two major changes were made. Staff are now included in recommendation 2 of the plan and the geographic areas of focus will be China, Brazil, the countries of East Africa, and the ASEAN region. A committee member asked that the term "international experience" in appendix 3 of the plan be clarified so that faculty/schools will be able to determine how many students are involved in short term as opposed to long term study abroad programs. The Executive Committee voted to include the plan on the agenda for the Faculty Senate meeting. *Attachment*

### **Report from School Representative: SODM**

Professor Zina Kaleinikova reported on activities within the School of Dental Medicine. The school has a new dean as of last July and will be involved in an accreditation review during 2015-2016. The SODM will be moving into the new Medical Education Building once the building is complete. There is a strong international presence in the SODM student population with students from Brazil and China, and possibly Columbia in the future.

### **Faculty Handbook: 5-Year Review**

Due to insufficient time, the Executive Committee did not discuss proposed By-Laws Committee revisions to the Faculty Handbook as part of the 5-year review process. These will be considered in the fall.

### **Approval of Faculty Senate Agenda**

The agenda for the April 23, 2015 Faculty Senate meeting was approved with removal of the Faculty Handbook 5-year review item.

The meeting was adjourned at 11:00 a.m.

Approved by the Faculty Senate Executive Committee



Rebecca Weiss  
Secretary of the University Faculty

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

Docket # \_\_\_\_\_

College/School: College of Arts and Sciences

Department: None. The major will be administered by the Institute for the Science of Origins

PROPOSED:  major  
 minor  
 program  
 sequence  
 degree

TITLE: Bachelor of Arts in Origins Sciences (aka BA with Origins Major)

EFFECTIVE: fall (semester) 2015 (year)

**APPROVED**

*Arts Executive Committee 3-20-15  
Faculty of the College 3-27-2015  
Dean of the College 3-27-2015*

**DESCRIPTION:**

**Requirements**

Origins sciences seek to increase human understanding of the origin and evolution of complex systems, from the creation of the universe itself to the evolution of life in all its variety, to the emergence of the many components of human culture; from the most distant past, to the present and into the future. The Origins Major seeks to introduce the student to the wide range of underpinning sciences and then enable him/her to delve more deeply into at least one aspect of origins, whether physical, biological or cultural.

The major therefore consists of 3 components in addition to the Arts and Sciences General Education Requirements -- the Science core, the Origins core, and the Origins Focus. For the focus, the student must complete a total of at least three 300-level courses (and their pre/co-requisites) drawn from at least 2 broad areas of concentration: Cosmology and Astrophysics, Planetary Science & Astrobiology, and Integrative Evolutionary Biology. (More details are provided below.) Students will develop an educational plan in consultation with their major advisors as sophomores and submit that plan for approval by the Origins Major supervisory committee.

Of the 120 credits needed for graduation with a BA in Origins, 43-49 are SAGES Requirements of the CAS, 39 are additional major requirements -- 15 in the Science Core, 15 in the Origins Core, at least 9 in the Origins Focus, although the latter often have pre-requisites. Sample educational plans (attached) suggest that that would add 0-9 "required" credits. The balance of the 120 are then open electives. Majoring in Origins would give the student added value in applying to medical school or to science-related MBA & JD programs, or in pursuing a career in science writing. Significant overlap exists with majors in origins-related sciences, making it straightforward for students to consider a second major in one of those sciences or to otherwise prepare themselves for disciplinary graduate programs in Anthropology, Astronomy, Biology, Chemistry, Cognitive Science, Geosciences, Applied Mathematics, Paleontology and Physics, among others. The required credit hours are similar to those in other natural and mathematical sciences, so the possibilities of completing minors or second majors in arts, humanities and social sciences are similar, and are facilitated by the fact that the proposal is for a BA.

**SAGES Requirements of the College of Arts and Sciences (43-49) (summary)**

- First Seminar (4)
- Two University Seminars (6)
- Writing Portfolio
- Departmental Seminar (3) (students not completing another major are strongly encouraged to complete a DS in a department associated with their areas of Origins concentration)
- Senior Capstone (6) (students not completing another major are strongly encouraged to complete a SC in a department associated with their areas of Origins concentration)
- Two 3- or 4-semester hour Arts and Humanities courses (6-8)
- Two 3- or 4-semester hour Natural and Mathematical Science courses (6-8 -- fulfilled by required courses of the major)
- Two 3-semester hour Social Science courses (6 -- can be fulfilled by elective courses of the major)
- One 3- or 4-semester hour Quantitative Reasoning course (3-4 -- fulfilled by required courses of the major)
- At least one 3- or 4-semester hour course identified as a global and cultural diversity course (3-4)

**General Degree Requirements (0)**

Two semesters of physical education

**Science Core (29, of which 14 overlap CAS SAGES Requirements, and 15 are additional)**

- MATH 121 & 122, or 125 and 126 -- 2 courses --8 credits (MATH 121 fulfills Quantitative Reasoning requirement)
- PHYS -115, 121 or 123 and 116, 122 or 124 -- 8 credits (fulfill Natural and Mathematical Sciences requirement)
- CHEM -105 & 106, 2 courses --6 credits (fulfill Natural and Mathematical Sciences requirement)
- BIOL 214 & 225, 2 courses --7 credits (fulfill Natural and Mathematical Sciences requirement)

### Origins Core (15)

- Optional: ORIG 101 – 1 credit
- ORIG 201 & 202, 2 courses -- 6 credits
- MATH/ORIG 301 Modeling – 3 credits
- ORIG 351–3 credits taken twice = 6 credits

At the discretion of the Origins committee, 3 credits of ORIG 360 or 370 may be substituted for 3 credits of ORIG 351

### Origins Focus (9 credits plus pre-requisites)

Each student, in collaboration with his/her major adviser, will design a course of study that integrates a wide spectrum of Origins fields, including at least two of the following three broad categories:

- Cosmology and astrophysics
- Integrative evolutionary biology (including biochemistry, physical anthropology, paleontology, and evolutionary cognitive science)
- Planetary science & Astrobiology

This course of study should include at least three advanced non-ORIG classes and their prerequisites. These will normally be 300-level or above courses, however the Origins Major Committee will consider inclusion of appropriate 200 level courses, subject to the approval of the originating department. The Committee will also consider inclusion of ORIG-351 or ORIG 360 if a compelling case is made that no existing non-ORIG course will meet an important set of educational goals.

The proposed curriculum, presented as a comprehensive educational plan, must be submitted to the Origins Major committee for approval by the conclusion of the spring semester of the sophomore year. Subsequent revisions to the plan are encouraged, but must be submitted for approval by the committee at least two weeks before the beginning of the semester preceding the one in which the revisions have effect.

**Students are strongly encouraged to include an Origins research experience in their educational plans.**

Credit hours required by major:  $(28-37) + 29 + 15 + 9 + (0-9) = 81-99$

Additional credit hours of open electives required for graduation – 39-21

Total Required Credit Hours: at least 120

### ORIG Courses (Course action forms submitted separately)

- ORIG 101 Origins Prologue: Life, the Universe and Everything. A one-credit course that introduces students to the research interests of Origins faculty, and thereby to some of the possibilities for student research or focused study. Taught every spring and fall semester. **This is a new course.**
- ORIG 201: Origins I. From the Beginning. A three credit quantitative introduction to cosmology, astrophysics, planetary science and geology. Taught every spring semester. **This course is cross-listed with EEPS101. ORIG201 students will undertake enhanced assignments including greater quantitative components.**
- ORIG 202: Origins II. Life in all its diversity. A three credit quantitative introduction to evolutionary biology, paleontology, physical anthropology and cognitive science. Includes several weeks taught at the CMNH. Taught every fall semester. **This is a new course.**
- ORIG 301/MATH???: Mathematical Modeling Across the Sciences: A three credit course on mathematical modeling, cross-listed with MAMS. Taught annually. **This is a new course.**
- ORIG 351: Topics in Origins. A three-credit special topics course in an Origins discipline. On mutual approval by the Faculty Steering Committee of the Origins Major and the relevant department, can be cross-listed with a departmental course. Such approval will imply that the department is prepared to waive any associated pre-requisites that are not required Origins Major classes. Taught at least once per academic year. Could be taught by a CAS faculty member, a SOM faculty member, or a CMNH curator. **This is a new course.**
- ORIG 360: Independent Study in Origins. A 1-3 credit offering available on an *ad hoc* basis to students wishing to pursue in depth study in an appropriate origins topic who can identify an appropriate Origins faculty member to supervise the activity on a *pro bono* basis. **This is a new course.**
- ORIG 370: Research in Origins. A 1-6 credit offering available on an *ad hoc* basis to students wishing to pursue independent research in an origins topic who can identify an appropriate Origins faculty member to supervise the activity on a *pro bono* basis. **This is a new course.**

## Justification

The Origins major is designed to attract and serve students looking for a broader, more integrative scientific education, one less exclusively focused on a particular discipline than our traditional majors, or even on a particular pairwise disciplinary boundary than some of our cross-disciplinary majors. A description that has resonated with some, is that we are creating “liberal sciences” degree, that parallels the traditional “liberal arts” degree in its flexibility, and shares the outlook that it is not necessary “pre” anything, but rather that it is an invaluable diverse education. It is notable that just as the value of a liberal arts degree is being questioned in this country, China is vigorously seeking to emulate it. A “liberal sciences” degree suggests a greater emphasis on scientific and mathematical thinking than a conventional liberal arts degree, but without the same disciplinary concentration as a traditional major, or, as we think of it, possessing a greater flexibility for the student to link areas of concentration.

Despite not being exclusively “pre-anything” in particular, the expected set of interested students will include those with specific professional objectives, certainly (and designedly) including medical school, but also encompassing management (especially science and technology based management and entrepreneurship), law (especially environmental and intellectual-property law), and journalism (especially science journalism). For each of these, securing a wide scientific knowledge base—both wider and deeper than our general education requirements demand—is valuable preparation. However, we believe that the audience for this major will also include not just those who are intentionally pre-professional, but also those who are just broadly curious.

One could argue, and we do, that this broader knowledge base will also prove valuable for a career in scientific research in an environment where interdisciplinary and multidisciplinary thinking is often valuable and even essential. We expect that students recognize this even more than do faculty, and that they will see connections that are not obvious to us from the outset. For this reason the requirements for the major allow for considerable flexibility, exercised within the context of faculty oversight of an educational plan. Nevertheless, the requirements insist on the need to gain expertise, if not the usual disciplinary mastery, in at least two separate thematic areas. Recognizing that this target audience will also include those whose intentions evolve toward the pursuit of graduate work, almost by necessity rooted in a traditional disciplinary major, the Origins major is designed to be compatible with BA programs in the related scientific disciplines, and we include in our submission educational plans that demonstrate that compatibility. At the same time, as a BA program it can readily be paired with arts, humanities, and social science majors.

## The value to CWRU of this target audience

In an era in which CWRU is no longer seeking to matriculate more students, the business argument for a new major cannot simply be that it will attract more applicants. A new major must allow us to attract more *desirable* students that we couldn't otherwise, to attract desirable students at a lower discount rate, and/or to continue to attract desirable students in the face of increasing competition.

One such specific opportunity identified above pertains to pre-medical students. Our current pre-med offerings are excellent but standard, and thus hard to differentiate from similar offerings at other research universities. As training for medical school, a broader scientific education might well be of greater value for many future doctors than the level of specialization inherent in standard biology, (bio)chemistry or biomedical engineering majors. The Origins Major gives pre-meds greater flexibility to avoid the usual pre-med tracks if they prefer. As described by the CWRU VP for Enrollment, the proposed program promises to provide CWRU with something distinctive to offer in this very competitive segment of the market.

The Origins Science major is also an opportunity within the natural sciences to make more concrete our frequent ambition and oft-stated claim to make tangible and compelling connections for our students with other University Circle institutions. The Cleveland Museum of Natural History will be an active partner in the Origins Science major. CMNH curators will teach in the major on a regular basis. Significant segments of Origins courses will be taught at the CMNH. Research opportunities will be identified for Origins majors working with CMNH curators, both in the laboratory and in the field. Again, the VP for Enrollment expects this real connection to the CMNH to be an attractive point of distinction for the most competitive slice of the undergraduate market.

## Metrics and Goals

We suggest the following metrics and associated goals by which the major be evaluated over a pilot period of approximately 5 years:

1. Enrollment
  - Year V Goal: The Origins major will enroll no less than 10 majors per year.
2. Attractiveness
  - Year V Goal: At least 30 early action applicants per year will indicate interest in the Origins major.
  - Year V Goal: The majors will include at least 10 per year who indicated interest in the major as matriculants, and:
    - i. have higher total SAT (or equivalent) scores than the average for the 2014 incoming class; and/or
    - ii. have a lower discount rate than the average for the 2014 incoming class; and/or
    - iii. are members of under-represented minorities or low-income groups.
3. Retention
  - Year V Goal: the four year graduation rate for Origins majors who indicated interest in the major as applicants, will not be less than that for other STEM majors.
4. Satisfaction
  - Year V Goal: the satisfaction rate for Origins majors who indicated interest in the major as applicants, will not be less than that for other STEM majors.

Is this major/minor/program/sequence/degree:  new  
 modification  
 replacement

If modification or replacement please elaborate: \_\_\_\_\_

Does this change in major/minor/program/sequence/degree involve other departments?  Yes  No

If yes, which departments? \_\_\_\_\_

Contact person/committee: Glenn Starkman

SIGNATURES: Michael Weiss Digitally signed by Michael Weiss  
DN: cn=Michael Weiss, o=ou,  
email=michael.weiss@case.edu, c=US  
Date: 2014.10.15 20:38:17 -0400 DATE

ISO Major Committee Chair: \_\_\_\_\_

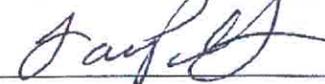
ISO Director:  \_\_\_\_\_ 10/6/2014

Biology Department Chair: Christopher Cullis \_\_\_\_\_ 10/8/2-14

Chemistry Department Chair: Mary Barkley Digitally signed by Mary Barkley  
DN: cn=Mary Barkley, ou=Case Western Reserve  
University, ou=Chemistry Department,  
email=mb@case.edu, c=US  
Date: 2014.10.09 12:54:02 \_\_\_\_\_

Mathematics, Applied Mathematics and Statistics Department Chair: David A Singer Digitally signed by David A Singer  
DN: cn=David A Singer, ou=Case Western Reserve  
University, ou=Department of Mathematics,  
email=dsinger@case.edu, c=US  
Date: 2014.10.09 22:16:45 -0400 \_\_\_\_\_

Physics Department Chair: Kathleen Kash Digitally signed by Kathleen Kash  
DN: cn=Kathleen Kash, o=Case Western Reserve University,  
ou=Department of Physics, email=kathleen.kash@case.edu, c=US  
Date: 2014.10.10 07:30:45 -0400 \_\_\_\_\_

Anthropology Department Chair:  \_\_\_\_\_ 10/16/14

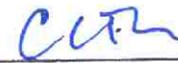
Astronomy Department Chair: Chris Mihos Digitally signed by Chris Mihos  
DN: cn=Chris Mihos, o=ou=CWRU Astronomy, email=mihos@cme.edu, c=US  
Date: 2014.10.13 08:43:51 -0400 \_\_\_\_\_

Biochemistry Department Chair: Michael Weiss Digitally signed by Michael Weiss  
DN: cn=Michael Weiss, o=ou,  
email=michael.weiss@case.edu, c=US  
Date: 2014.10.13 20:37:36 -0400 \_\_\_\_\_

Cognitive Science Department Chair:  \_\_\_\_\_ 2014.10.13 08:54:30 -04'00'  
11.0.9

Earth, Environmental, and Planetary Sciences Department Chair: James A. Van Orman Digitally signed by James A. Van Orman  
DN: cn=James A. Van Orman, ou=Case Western Reserve  
University, ou=Department of Earth, Learning, and  
Planetary Sciences, email=james.vanorman@case.edu, c=US  
Date: 2014.10.14 11:16:11 -0400 \_\_\_\_\_

College/School Curriculum Committee Chair: V. Hayward/cas \_\_\_\_\_ 3-27-2015

College/School Dean(s):  \_\_\_\_\_ March 27, 2015

FSCUE Curriculum Committee Chair: \_\_\_\_\_

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



CASE WESTERN RESERVE  
UNIVERSITY EST. 1826

Richard W. Bischoff  
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10900 Euclid Avenue  
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Updated September 10, 2014

### Letter in support of the proposed Bachelor of Arts in Origins Sciences

I am writing to enthusiastically support the addition of a major in Origins Sciences. The proposed major supports multiple enrollment goals for the university.

- Origins Sciences supports a broad message about the different ways in which Case Western Reserve University can prepare students for medical school and its interdisciplinary nature aligns with the forthcoming changes to the MCAT. Case Western Reserve is perceived to be good at preparing students for medical school. For us to be able to maintain this reputation, we must enhance the narrative. Origins Sciences gives us a way of doing this. The fact is that our narrative right now isn't that different from other institutions. We must enhance this narrative simply to maintain our current position.
- Employment after graduation is a top concern of parents and students. Origins Sciences provides a terrific example of how a student can translate broad intellectual interests into less common graduate school and career interests; science-related MBA or JD programs, careers in science writing or careers in consulting (especially for science and engineering based companies) amongst others. A program such as Origins Sciences supports the argument that CWRU is unusually good at preparing students for graduate or professional school as well as careers.
- Origins Sciences highlights our location in University Circle and partnerships with neighboring institutions, providing an additional example of how we leverage unique resources, in this case the Cleveland Museum of Natural History, to support undergraduate education. This is a very appealing differentiator for students and parents.

Because of how major data is reported, it is very hard to gauge the actual number of interdisciplinary science major degrees that are being earned at other institutions. However, a quick search of "interdisciplinary science' major" shows an abundance of universities with such majors. If you look at AAU private institutions that report a large number of interdisciplinary graduates, you see what appear to be rather substantial interdisciplinary science programs at the undergraduate level.

Medicine Health and Society at Vanderbilt or Philosophy-Neuroscience-Psychology at Wash U are examples.

My expectation is that origins sciences would behave very much like anthropology or cognitive science. We will recruit several high ability students who know what it is, but more will be attracted by the narrative and discover it while they are here. The fact is few high school students will have had the exposure to understand what origin sciences is coming out of high school.

From an enrollment perspective, support for Origins Sciences is about increasing our ability to compete for more of the students we want most to enroll. The major will appeal to high ability students with broad intellectual interests. Even amongst our pre-med students it will make us more appealing to the more broadly intellectual potential medical student. It gives students a reason to choose CWRU over other universities that on the whole may be more highly ranked or more expensive for their families.

Please feel free to contact me at 216.368.0978 or [richard.bischoff@case.edu](mailto:richard.bischoff@case.edu) if I can provide further support.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Richard W. Bischoff', followed by two vertical lines.

Richard W. Bischoff

**From:** Christopher Cullis <[cac5@case.edu](mailto:cac5@case.edu)>  
**Date:** Fri, Oct 17, 2014 at 3:39 PM  
**Subject:** Re: Origins Major proposal signature form  
**To:** Glenn Starkman <[glenn.starkman@case.edu](mailto:glenn.starkman@case.edu)>

Dear Glenn,

"I acknowledge that by signing the proposal for a BA with a major in Origins Sciences I am stating that the Department of Biology will identify the appropriate instructors/advisors for the teaching/advising roles discussed in the proposal.

Christopher Cullis  
Francis Hobart Herrick Professor and Chair of Biology  
Case Western Reserve University  
10900 Euclid Avenue  
Cleveland, Ohio 44106-7080  
Phone: 1 216 368 3557  
Fax: 1 216 3689 4672  
e-mail: [cac5@case.edu](mailto:cac5@case.edu)

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

From: **Kathleen Kash** <[kxk43@case.edu](mailto:kxk43@case.edu)>

Date: Fri, Oct 17, 2014 at 2:14 PM

Subject: Re: Origins Major proposal signature form

To: Glenn Starkman <[glenn.starkman@case.edu](mailto:glenn.starkman@case.edu)>

Dear Glenn,

I acknowledge that by signing the proposal for a BA with a major in Origins Sciences I am stating that the Department of Physics will identify the appropriate instructors/advisors for the teaching/advising roles discussed in the proposal.

Yours truly,

Kathy

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

From: **James Van Orman** <[jav12@case.edu](mailto:jav12@case.edu)>

Date: Friday, October 17, 2014

Subject: Origins Major proposal signature form

To: Glenn Starkman <[glenn.starkman@case.edu](mailto:glenn.starkman@case.edu)>

Dear Glenn:

I acknowledge that by signing the proposal for a BA with a major in Origins Sciences I am stating that the Department of Earth, Environmental and Planetary Sciences will identify the appropriate instructors/advisors for the teaching/advising roles discussed in the proposal.

Best,  
Jim

--

Sent from Gmail Mobile



**Glenn Starkman <gds6@case.edu>**

**Origins**

1 message

**Michael Weiss <Michael.Weiss@case.edu>**

To: Glenn Starkman <glenn.starkman@case.edu>

Thu, Oct 16, 2014 at 2:34 PM

Dear Glenn,

I acknowledge that by signing the proposal for a BA with a major in Origins Sciences I am stating that the Department of Biochemistry will identify the appropriate instructors/advisors for the teaching/advising roles as discussed in the proposal.

With warm regards,

Mike

Michael A. Weiss, M.D., Ph.D.  
Cowan-Blum Professor and Chair  
Department of Biochemistry

10/17/2014

Case Western Reserve University Mail - acknowledgement



Glenn Starkman <gds6@case.edu>

## acknowledgement

1 message

David Singer <david.singer@case.edu>

To: Glenn Starkman <gds6@case.edu>

Thu, Oct 16, 2014 at 3:42 PM

Glenn,

I acknowledge that by signing the proposal for a BA with a major in Origins Sciences I am stating that the Department of Mathematics, Applied Mathematics and Statistics will identify the appropriate instructors/advisors for the teaching/advising roles discussed in the proposal.

David Singer

---

Professor and Acting Chair  
Department of Mathematics, Applied  
Mathematics, and Statistics  
Case Western Reserve University  
Cleveland, OH 44106-7058  
(216) 368-2892



Glenn Starkman <gdss@case.edu>

## Origins Major Proposal

1 message

Todd Oakley <todd.oakley@case.edu>

To: Glenn Starkman <glenn.starkman@case.edu>

Thu, Oct 16, 2014 at 2:39 PM

Dear Glenn,

I acknowledge that by signing the proposal for a BA with a major in Origins Sciences I am stating that the Department of Cognitive Science will identify the appropriate instructors/advisors for the teaching/advising roles discussed in the proposal.

More specifically, I wish to emphasize that COGS 201, Human Cognition from an Evolutionary and Developmental Perspective, is a foundation course in the department as well as, under the present proposal, an elective for the Origins Major. The course is taught every Fall term. The course has been taught for the past three years by Professor Vera Tobin, but has also been taught in the past by Professor Mark Turner, and will likely be taught in the future by Professor Todd Oakley. Thus, there are at present at least 3 faculty who could serve as advisors.

Sincerely,

Todd Oakley  
Professor & Chair of Cognitive Science  
President, [International Association for Cognitive Semiotics](#)

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Glenn Starkman <gds6@case.edu>

## Re: Origins

Chris Mihos <mihos@case.edu>

To: Glenn Starkman <glenn.starkman@case.edu>

Thu, Oct 16, 2014 at 9:26 PM

Hmm not sure what happened then. Here it is again.

On Oct 13, 2014 9:00 AM, "Chris Mihos" <mihos@case.edu> wrote:

Hi Glenn,

I've signed off on the Origins major. This note also confirms our plans for staffing Origins-related courses.

As you and I discussed, given the teaching capacity in Astronomy, it is unlikely we will be able to offer "new" Origins courses any time soon, but we would certainly welcome Origins majors into our ASTR 221/222 courses (and subsequent 300-level courses). We anticipate ASTR 222 would be one of the "appropriate 200 level courses" that would count as 300-level Origins Focus course for students doing the cosmology and astrophysics track. Since these courses are required for our Astronomy majors and minors, we offer them every year, so they will always be available on the schedule. We are also happy to contribute to advising for Origins majors who are doing the cosmology and astrophysics track and have identified a faculty mentor in astronomy.

Chris

Chris Mihos

Professor and Chair of Astronomy  
Case Western Reserve University



Glenn Starkman <gds6@case.edu>

## Origins Major

1 message

Thu, Oct 16, 2014 at 3:39 PM

**Lawrence Greksa** <lpq2@case.edu>  
To: Glenn Starkman <glenn.starkman@case.edu>

Committees Evaluating the Proposed Origins Major:

The Origins major includes no required Anthropology courses. Nevertheless some Anthropology courses are likely to be of interest to Origins majors. Some of these are taught by regular faculty and are offered regularly, others are taught by adjunct faculty and have a history of being taught regularly. The department anticipates this to continue, especially to the extent that Origins majors increase demand for Anthropology courses. The department also anticipates that appropriate members of the department will agree to serve as advisors of Origins majors seeking to develop an Anthropology-related focus.

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



**Proposal for a Bachelor of Arts in Origins Sciences (“Origins Major”)  
Sponsoring unit: the Institute for the Science of Origins**

**1. How is the proposed program important to the sponsoring department/interdisciplinary program?**

- a. Discuss the relationship between the proposed new program and current programs (graduate and/or undergraduate), including its impact with respect to allocation of resources.**

The Institute for the Science of Origins is the principal outgrowth of the Origins Alliance. It includes as institutional partners CWRU, the Cleveland Museum of Natural History and *ideastream* (<http://www.ideastream.org>). At CWRU the ISO involves tens of faculty from a broad range of disciplines in the CAS, the SOM, the SODM, and WSOM.

The ISO does not currently administer any other degree-granting programs. (The Evolutionary Biology Major is closely affiliated with the ISO, and directed by Patricia Princehouse, Outreach Director and a Fellow of the ISO, but predates the ISO and is independent.) There are plans afoot in the context of a developing proposal for a Center for Evolution and Human Health for a graduate program (initially at the Master’s level), and there continue to be discussion about potential PhD programs through this possible Center, or through the ISO, or through ISO-related departments, but none of these potential initiatives are at the same stage of maturity as this proposal.

The ISO views the Origins Science Bachelor of Arts major as a central future activity, and has since its inception. One of the ISO’s three Goals is to “**Educate the discoverers and disseminators of tomorrow,**” and the first of two sub-goals is to “create and implement an undergraduate major in Origins that utilizes the resources of the partner institutions and their departments.” (See <http://www.case.edu/origins/about/goals.html>.) The ISO has resisted realizing this goal until it felt the time was right, i.e., when the ISO would be on sufficiently firm footing that it was responsible to create an undergraduate major.

Creating an undergraduate major in Origins Sciences achieves many purposes. As discussed in turn below, these include creating a distinctive undergraduate major that will be attractive to a desirable student demographic (as elaborated below), contributing to CWRU’s national and international reputation, fostering collaboration among disciplines, and increasing collaboration with partner cultural and research institutions in University Circle. As an interdisciplinary and multi-institutional partnership, advancing such “external” goals are of inherent importance to the ISO. However, we would additionally emphasize ways in which the major is specifically important to the ISO: we expect that “running” this inter/multidisciplinary major will increase ties among the ISO

scientists themselves, fostering collaborations, leading to new grant applications, and in so doing enhance the reputation of CWRU as a national/international research university. We anticipate that the students will help drive such new collaborations and expect that the alumni of the program will make positive contributions to the ISO, including philanthropic ones. We foresee that future Origins alumni/ae will also provide a valuable national/international academic network as long-term members of the ISO community.

**2. What is the perceived need or market for the program? Please provide supporting documentation.**

The Origins major is designed to attract and serve students looking for a broader and more integrative scientific education, one less exclusively focused on a particular discipline than our traditional majors, or even on a particular pairwise disciplinary boundary than some of our cross-disciplinary majors. A description that has resonated with some is that we are creating a “liberal sciences” degree, which parallels the traditional “liberal arts” degree in its flexibility, and shares an outlook that it is not necessary “pre” anything, but rather which is an invaluable diverse education in its own right. It is notable that just as the value of a liberal arts degree is being questioned in this country, China is vigorously seeking to emulate it. A “liberal sciences” degree suggests a greater emphasis on scientific and mathematical thinking than a conventional liberal arts degree, but without as strong a link to one of the traditional disciplines as our traditional disciplinary majors, or, as we think of it, possessing a greater flexibility for the student to link areas of concentration.

Like many majors, despite not being exclusively “pre-anything” in particular, the expected set of interested students will include those with specific professional objectives, certainly (and designedly) including medical school, but also encompassing management (especially science- and technology-based management and entrepreneurship), law (especially environmental and intellectual-property law), journalism (especially science journalism). For each of these career trajectories, a wide scientific knowledge base — both wider and deeper than our general education requirements demand — will prove valuable preparation. We have met with the appropriate pre-professional advisers (Steve Scherger and Terri Mester) to ensure that the pathway through the major to the relevant post-graduate work is transparent and can be followed straightforwardly. We have included in our submission two pre-med educational plans for illustrative purposes, since that is by far the most constrained (and popular) of the pre-professional programs.

We emphasize our expectation that the audience for this major will include not just those students who are intentionally pre-professional, but also those who are just broadly curious. This will include those who enter CWRU intending one major, and discover the wider world of intellectual opportunities once they are here.

One could argue, and we do, that this broader knowledge base will also prove valuable for a career in scientific research in an environment where interdisciplinary and multidisciplinary thinking is often valuable and even essential. We anticipate that students recognize this even more than do our faculty, and that they will see connections that are not obvious to us from the outset. For this reason the requirements for the major will allow considerable flexibility, exercised within the context of faculty oversight of an educational plan. Nevertheless, the requirements insist on the need to gain more specific expertise through the Origins Focus. Recognizing that the target audience will also include those whose intentions evolve toward the pursuit of graduate work, almost by necessity rooted in a traditional discipline, the Origins major is designed to be compatible with BA programs in related scientific disciplines. At the same time, as a BA program with requirements comparable to other natural and mathematical science majors, an Origins course of study can be paired with arts, humanities, and social science majors.

Interdisciplinary majors exist at many institutions (see table below of sample 2012 majors with associated enrollments). It is hard to determine the appropriate comparison group, or to obtain accurate numbers for the number of majors. Some, such as the Biological Basis of Behavior major at Penn are longstanding (since 1978) and important presences on campus. Others no doubt languish. The sole other broad undergraduate Origins major – at McMaster University in Hamilton, Ontario, Canada – has graduated 35 majors in seven years, but is a secondary “research specialization” at a large second-tier foreign public university. The available incomplete un-normalized heterogeneous numerical data necessarily lacks any context. We can offer the following anecdotal data – each of the undergraduates to whom we have mentioned the major has responded with unsolicited reactions ranging from interest to excitement. The sample size is small – less than a dozen. The methodology for selection is unscientific – random undergraduates with whom we have happened to be thrown together, currently in a variety of science majors. An event in late October for undergraduates organized by the ISO may or may not be a better gauge of interest, but only among current undergraduates.

Institution	(Majors( General( Interdisc	(Majors( Biological( and( Physical( Sciences(	(Majors( Systems( and( Science( Theory(	(Majors( Mathematics( and( Computer( Science(	(Majors( Biology(	(Majors( Psychology(	(Majors( Technology( and( Society(	(Majors( Accounting(	(Majors( Computer( and( Natural( Sciences(	
Brandeis	0	0	0	0	0	0	0	0	0	0
Brown	5	0	0	0	0	0	0	4	0	0
Caltech	0	0	0	0	0	0	0	0	0	0
CMU	0	0	20	0	23	0	0	0	0	0
Columbia	0	0	0	4	0	0	0	0	0	0
Cornell	0	0	0	0	0	0	0	8	0	0
Duke	0	0	0	0	0	0	0	0	0	0
Emory	0	0	0	2	0	0	0	0	0	0
Harvard	0	0	0	0	0	0	0	0	0	0
Johns(Hopkins	0	0	0	0	0	0	0	0	0	16
MIT	0	0	0	26	0	0	0	0	0	0
NYU	0	0	0	0	0	0	0	0	0	0
Northwestern	0	23	0	0	0	0	0	7	0	0
Princeton	0	0	0	0	0	0	0	0	0	0
Rice	0	0	0	0	0	0	0	0	0	0
Stanford	0	0	0	0	0	0	53	0	0	0
Syracuse	1	0	0	0	0	0	0	0	0	0
Tulane	0	0	0	0	0	0	0	0	0	0
Chicago	0	0	0	0	0	0	0	0	0	0
Penn	0	0	0	0	0	0	0	0	0	0
Rochester	0	0	0	0	0	0	0	0	0	0
USC	0	0	0	0	0	9	0	0	0	0
Vanderbilt	0	0	0	0	0	0	3	0	0	0
Wash(U	0	0	0	0	0	0	0	0	0	0
Yale	0	0	0	1	0	0	0	0	0	0
	6	23	79	33	23	9	75	0	16	

Institution	(Majors( Nutrition( Sciences(	(Majors( Cognitive( Biology(	(Majors( Human( Biological( Science(	(Majors( Computer( Interaction(	(Majors( Marine( Sciences(	(Majors( Multi/Int( erdiscipli( nary( Studies( Other(
Brandeis	0	0	0	0	0	3
Brown	0	8	90	0	0	0
Caltech	0	0	0	0	0	1
CMU	0	4	0	0	0	0
Columbia	0	0	0	0	0	0
Cornell	46	0	0	0	0	52
Duke	0	0	0	0	0	26
Emory	0	0	0	0	0	26
Harvard	0	0	0	0	0	0
Johns(Hopkins	0	11	0	0	0	0
MIT	0	9	0	0	0	0
NYU	0	0	0	0	0	0
Northwestern	0	0	0	0	0	0
Princeton	0	0	0	0	0	3
Rice	0	27	0	0	0	1
Stanford	0	21	177	0	0	1
Syracuse	8	0	0	0	0	0
Tulane	0	0	0	0	0	58
Chicago	0	0	0	0	0	0
Penn	0	21	0	0	0	0
Rochester	0	0	0	0	0	7
USC	0	0	14	0	0	17
Vanderbilt	0	19	0	0	0	154
Wash(U	0	0	0	0	0	82
Yale	0	17	0	0	0	54
	54	137	281	0	0	485

### The value to CWRU of this target audience

In an era when CWRU is no longer seeking to matriculate more students, the business argument for a new major cannot simply be that it will attract more applicants. A new major must enable us to attract more *desirable* students that we couldn't otherwise, to attract such students at a lower discount rate, or to continue to attract desirable students in the face of increasing competition by peer institutions.

One specific such opportunity identified above is provided by a subset of pre-medical students. Our current pre-medical offerings are excellent but standard, and thus difficult for prospective students (and their parents) to differentiate from similar offerings at other research universities. As training for medical school, a broader scientific education might well be of greater value for many future doctors than the level of specialization inherent in standard biology, (bio)chemistry or biomedical engineering majors. The new MCAT with its more diverse expectations is an affirmation of that viewpoint. The Origins Major will provide pre-meds with greater flexibility to avoid the usual pre-med tracks if they prefer. As described by the VP for Enrollment, such a program promises to give us something distinctive to offer in this very competitive segment of the market.

The Origins Science major will also provide an opportunity within the natural sciences to make more concrete our frequent ambition and oft-stated claim to make real connections for our students with other University Circle institutions. The Cleveland Museum of Natural History will be an active partner in the Origins Science major. CMNH curators will teach in the major on a regular basis. Significant segments of Origins courses will be taught at the CMNH. Further, research opportunities will be identified for Origins majors working with CMNH curators, both in the laboratory and in the field. Again, the VP for Enrollment expects this tangible connection to the CMNH to be an attractive point of distinction for the most competitive slice of the undergraduate market.

### Metrics and Goals

We provide the following metrics and associated goals by which we suggest the major be evaluated over a pilot period of approximately 5 years.

1. Enrollment
  - Year V Goal: The Origins major will enroll at least 10 majors per year.
2. Attractiveness
  - Year V Goal: At least 30 early-action applicants per year will indicate interest in the Origins major.
  - Year V Goal: The Origins majors will include at least 10 per year who indicated interest in the major as matriculants, and:

- i. have higher total SAT (or equivalent) scores than the average for the 2014 incoming class; and/or
  - ii. have a lower tuition discount rate than the average for the 2014 incoming class; and/or
  - iii. are members of under-represented minorities or low-income groups.
- 3. Retention
  - Year V Goal: the four year graduation rate for Origins majors who indicated interest in the major as applicants, will not be less than that for other STEM majors .
- 4. Satisfaction
  - Year V Goal: the satisfaction rate for Origins majors who indicated interest in the major as applicants, will not be less than that for other STEM majors.

As supporting documentation we attach a letter from the VP for Enrollment endorsing the Origins major for the reasons given above.

**3. What are the projected costs necessary to mount the program? More specifically, what are the projected needed near- and long-term resources and estimated costs for:**

*NOTE: We have attached an excel spreadsheet to enable the CAS committees to better understand any questions they may have relating to the following.*

**a. Faculty?**

Faculty time will be required for three purposes:

- Teaching
- Advising/Mentoring
- Administration

**I. Teaching:**

The major will require the creation of the following new ORIG-designated courses, and the described teaching resources:

- **ORIG 101 Origins Prologue: Life, the Universe and Everything.** A one-credit course that introduces students to the research interests of Origins faculty, and thereby to some of the possibilities for student research or focused study. Taught every semester.

Because this consists of individual lectures, faculty will be asked to do this course as an overload. The Director of the Origins Major (see below) will coordinate.

**Estimated additional cost: \$0**

- **ORIG 201: Origins I: In the Beginning.** To be cross-listed with the existing EEPS 101 Earth and Planets. A three-credit quantitative introduction to cosmology, astrophysics, planetary science and geology. Taught every spring semester.

This course will continue to be taught principally by an EEPS faculty member. A physics or astronomy faculty member will serve as co-instructor, and will provide enriched cosmology content to a course that traditionally has included some such content. In line with the model of 300/400 level cross-listed courses, those students taking the course as ORIG 201 will complete enhanced/extended assignments with greater quantitative content. The co-instructor will have primary responsibility for these assignments.

The existing EEPS effort is shown as dual use of existing effort for a full course (10% effort) on the basis of a \$100K AY salary, \$5K salary plus \$3K fringe. For the co-instructor at the same rate 5% annualized effort (taken to be a ½ course), would compensate for replacement teaching to cover a half course in the co-instructor's home department, however this is shown as reallocation of existing effort.

**Estimated additional cost: \$0**

- **ORIG 202: Origins II. Life in all its diversity.** A three credit quantitative introduction to evolutionary biology, paleontology, physical anthropology and cognitive science. Taught every fall semester.

This will be a team-taught class. Two CWRU faculty will teach the class as part of their regular teaching duties; a CMNH curator will also co-teach the course. Cost estimates are provided on the basis of one CAS faculty member, one SOM faculty member and a CMNH curator. Costs for CAS faculty time (estimated as above for ORIG 201, for a net of \$6.5K) is taken to be a reallocation of existing effort. SOM faculty time is estimated at 5 weeks as lead instructor (12 hours per week), and 9 weeks as non-lead instructor (4.5 hours per week), for 100.5 hours out of a nominal 1560 hours of work in a 39-week academic year, or 0.064% effort. A salary of \$105k is assumed (per instructions of the Chair of Biochemistry). Net cost for SOM faculty: \$8.8k. Per CMNH head of science, net cost for half-course teaching by a CMNH curator: \$6.5k.

**Estimated additional cost: \$15.3k**

- **ORIG 301/MATH3xx: Mathematical Modeling Across the Sciences:** A three credit course on mathematical modeling, cross-listed with MAMS. Taught annually. Estimated at full cost of one CAS faculty (see above) but represents a dual use of (planned) faculty effort.

**Estimated additional cost: \$0**

- ORIG 351: Topics in Origins.** A three-credit special topics course in (an) Origins discipline(s). Taught at least once per academic year. Could be (co-)taught by a CWRU faculty member (CAS/SOM/other), or a CMNH curator. Currently estimated at the average of the nominal cost of a CAS faculty member or a CMNH curator (\$13k) and that of a SOM faculty member (168 hours, other assumptions as above, yielding an estimate of \$19.6k). We also allocate \$1k for course development. Since some 351 courses will be cross-lists of existing departmental courses, some savings will be realized; these are not reflected in the budget. The savings will be allocated for further course-development funding. For example, we would hope to develop courses in astrobiology, exo-planets, pre-biotic evolution, and linguistics, probably beginning life as an ORIG 351 offering and, demand permitting, evolve into a course with a departmental designation. In the meantime a number of courses exist that could be cross-listed as ORIG 351, examples include: ANTH 302 Darwinian Medicine, ANTH 327. Ancient Cultures of the Ohio Region, ANTH 331. The Most Ancient Near East, ANTH 375. Human Evolution: The Fossil Evidence, ANTH 378. Reproductive Health: An Evolutionary Perspective, BIOC 315. Nuclear Receptors in Health and Disease, BIOC 334. Structural Biology, BIOL 307. Evolutionary Biology of the Invertebrates, BIOL 326. Genetics, BIOL 328. Plant Genomics and Proteomics, BIOL 345. Mammal Diversity and Evolution, BIOL 352. Ecology and Evolution of Infectious Diseases, CHEM 329. Chemical Aspects of Living Systems, COGS 310. Cognitive Science of Religion, COGS 327. Gesture in Cognition and Communication, EEPS 301. Stratigraphy and Sedimentation, EEPS 307. Evolutionary Biology and Paleobiology of Invertebrates, EEPS 315. Structural Geology and Geodynamics, EEPS 340. Earth and Planetary Interiors, EEPS 345. Planetary Materials, EEPS 350. Geochemistry, EEPS 367. Topics in Evolutionary Biology, PHYS 365. General Relativity

**Estimated additional cost: \$14.6k**

- ORIG 398: Independent Study in Origins.** A 1-3 credit offering available on an *ad hoc* basis to students wishing to pursue in depth study in an appropriate origins topic who can identify an appropriate Origins faculty member to supervise the activity on a *pro bono* basis.

**Estimated additional cost: \$0**

**Subtotal estimated real additional costs for teaching: \$29.9k**

## II. Advising/Mentoring

Major advising costs scale directly with number of majors, and so are more difficult to project *ab initio*. We begin by projecting annual cohorts of 15 majors, suggesting that there will be 45 majors requiring advising. We project on the basis of half-hour meetings 8 times per year. This is high compared to most majors, however, given the interdisciplinary nature of the major, the need for students to draw up, submit and, inevitably, revise educational plans, and the need for faculty advisors to individually and collectively participate in that process, as well as in the collective review of the plans, perhaps this is not a gross overestimate. On that basis we would project a total of 180 advisor hours per academic year (3 cohorts x 15 students/cohort x 4 hours/student/year). This represents 11.6% of 39 forty-hour weeks. On a cost basis of \$100K for CAS and \$105K for SOM, and taking an average of 75% of those cost for CAS advisors and 25% for SOM advisors, we would arrive at an estimated additional cost for advising of \$15.4.

Such a "full-cost" accounting for advising time is an unfair cost burden to the proposed major. Most of that time spent would have been spent no matter what major the students had. Moreover, we expect that the Director of the Origins Major will assume some fraction of the advising burden, especially when the majors are newly declared and have yet to have an approved educational plan. Estimating that only 1/3 of this is "additional new costs" and that the CAS portion of that would be a reallocation of effort, we find

**Subtotal estimated additional cost for advising: \$3.9K**

## III. Administration

The ISO is not currently an administrative unit of the University. In order to administer the major, it will have to create appropriate administrative structures. These include a faculty member serving as Director of the Origins Major. This person would also provide advising to Origins majors who have not yet developed a plan for their Origins foci. We provide for a single course release for said faculty member. For CAS this is at an estimated cost of \$13K per year (see above). For SOM, assuming a Full Professor (~\$140K per year), and 7.5% effort, it is at an estimated cost of \$14K per year. We use the average of those two number as our:

**Subtotal estimated additional cost for administration: \$13.5k**

Note that this does not include costs for general ISO administration (ISO director).

**Subtotal estimated additional cost for faculty: \$47.3k**

**b. Staff**

We budget for a 20% part time staff position in support of the major, at \$30K full-time, plus fringe.

Subtotal estimated additional cost for staff: **\$7.8k**

**c. Graduate student support.**

No graduate student support is budgeted. If the enrollment in ORIG 201 or ORIG 202 reaches ~30 students, there will be a need to begin budgeting for a teaching assistant.

**d. Space (offices, research or instructional labs and/or equipment, if applicable) required for faculty or graduate students to carry out the program?**

The major will have the following short term space requirements:

I. Instructional Space

Classrooms will be required for 2 additional courses each fall (ORIG202, ORIG 351) and one each spring (ORIG 101), plus one other (ORIG301) in one or the other. CMNH has expressed interest in being the site for some of this teaching. There are several advantages for making that the case. We will advocate for teaching ORIG101 at CMNH, and at least half of ORIG202 there as well. ORIG 351 should be taught there when appropriate.

II. Administrative Space:

We will require a place for the part-time staff member to sit. This could also serve as a central administrative office for the major, where appropriate documents are kept, ... Because of associated FIRPA issues, it would be best if this was a lockable office, preferably on the Case Quad.

III. Other space

It may be difficult in the short term, but it would be useful to identify study and gathering space for the majors.

In the longer term, if the ISO is eventually "housed," the major would be well served by having appropriate space dedicated to it associated with the ISO space.

**e. Impact on university resources, such as increased library needs?**

None currently identified.

**f. Other costs:**

- Origins lecture series: We budget for an annual lecture series in Origins that ORIG 201 and 202 students will be expected to attend, and we anticipate that they will be incorporated in ORIG 101. We allow for 14 lectures at \$500 per lecture. CAS science departments generally have similar lecture series that are available to their upper level majors. Subtotal estimated cost: **\$7k**

- Program fund: Used to cover the costs normally covered by departments in support of their majors, including travel to conferences, discretionary spending by an associated student group, research support.  
Subtotal estimated cost: \$5k

Subtotal estimated other costs: **\$12k**

**Total estimated new costs (15 major/yr): 67k\$/yr**

**Additional new costs for increasing cohorts by 5 above 15:  
4k\$/yr**

**Estimated cost of five-year pilot: 286k\$**

#### **Ramp Down Contingency**

We have provided a budget for a four-year ramp down period in the event that the program does not meet its five-year metrics, and a decision is made to terminate the program.

These are: 29.1k in year VI, 27.8k in Year VII, 22.7k in year VIII and 14.9k in year VIII. Total: 94.5k. (Details are contained in the appropriate spreadsheet tab.) These would permit existing declared majors, including those who matriculate at the beginning of Year VI with the intention to major in Origins, to complete their degrees with the full academic experience originally advertised to them. Some savings compared with this projection might be realized depending on the context of the ramp down.

#### **4. What is the projected income associated with the new program? Identify likely sources and assess the near- and long-term likelihood of raising funds to support the program in such categories as external and internal grants, philanthropy and other non-grant external funding, and tuition.**

We discuss each of these categories in turn:

##### **I. Tuition:**

The most straightforward way to recoup the additional costs outlined above is through additional tuition income. As discussed, it is not realistic to imagine that we will add new students, therefore the relevant tuition income is however much additional tuition the average Origins major is willing to pay compared to the current average CWRU undergraduate. With an annual cohort of 15 and a nominal tuition of \$41.5K per student per year, collecting an additional 3% of tuition (about \$1250 per student per year), or in other words reducing the discount rate by about 6%, results in \$75K of additional annual income, fully offsetting the projected costs.

At this rate, each additional 5 students per cohort results in \$3K /year of additional costs, and 20 times \$1.25k per year (i.e. \$25K /year) in

additional revenue, netting out to \$22K /yr. A cohort of 20 is therefore cost neutral with a 2.2% (i.e \$900/year) improvement in the fraction of nominal tuition collected per student.

Similar income levels can be achieved with an annual cohort of 10 and a discount rate that is lower than the current level by 4%.

It should however be recognized that attracting a cohort of students with a lower average discount rate may not be our only metric of (financial) success. Two such possible metrics are attracting more under-represented minorities, and attracting a more selective cohort (as measured, for example, by higher average SAT or ACT scores). Greater diversity does not, in and of itself, translate into an improved bottom line, but is an institutional goal. School selectivity has a 12.5% weight in US News Rankings; improving the University's rankings is an institutional objective, and may well lead to improved financial outcomes in the long run — through an ability to reduce the discount rate and attract more philanthropy.

## II. Grants

There is some possibility of applying for an NSF grant through that agency's Directorate of Education and Human Resources (EHF), and it's Division of Undergraduate Education. Programs such as Improving Undergraduate STEM Education, Transforming Undergraduate Education in STEM (TUES) program, and Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE) program are promising if new solicitations are opened. These federal programs would of course not offer long-term funding of the program, but could provide valuable opportunities for seed funding. However, it will be difficult to solicit funds until approval of the major is secured.

## III. Philanthropy

There are both short-term and long-term opportunities for philanthropy. In the short term a truly innovative, indeed nationally unique, undergraduate program might be attractive to donors or foundations. This possibility has not yet been explored. In the long run alumni/ae of a unique and innovative program might be expected to exhibit particular loyalty to the program as a distinct community of CWRU graduates.

## **5. What are the national and international competitive programs and their resources?**

We have not identified a similar broad-based stand-alone undergraduate Origins major anywhere in the United States. Arizona State University's School of Earth and Space Exploration offers a B.S. in Earth and Space Exploration with a concentration in Astrobiology and Biogeosciences. Florida Institute of Technology advertises (apparently inaccurately) that it has the first and only undergraduate astrobiology

program in the country. Paleoanthropology can be studied as a concentration within anthropology in many places. Introductory and upper level courses in cosmology can be found at most major research universities. None of these programs are as broadly conceived as this one, though many institutions could easily mount one as a future response to innovation at CWRU.

The closest program extant is the Origins Research Specialization (ORP) offered by the Origins Institute (OI) at McMaster University in Hamilton, Ontario, Canada. It has a similar scope, though it is not itself a stand-alone major, but an add-on to other science majors. The McMaster Origins Institute is similar in scope and structure to the CWRU institute; it dates from 2004, and so is well established. The McMaster's Institute initially focused on an undergraduate pre-medical program, but appears to have recently added the ORP. McMaster is not a likely competitor to CWRU in most of our relevant markets. On the other hand its relative proximity offers opportunities for collaboration. ISO director Starkman and the OI director have a long acquaintance and have discussed opportunities for future collaborations.

## **6. How does the proposed program:**

### **a. move the college's strategic plan forward in regard to the goals for undergraduate and/or graduate education?**

Since these are among its leading metrics, the proposed program will, if successful, by definition do one or more of the following:

- reduce the undergraduate tuition discount rate (although not by "increase[ing] in the funded portion of the undergraduate discount rate;"
- "increase [the] quality of undergraduates enrolled, measured, e.g., by standardized test scores;"
- "increase [the] numbers and shares of undergraduate and graduate students who are women or underrepresented minorities."

The Origins major will also, if successful, increase the number of undergraduate applications that express interest in a specific major that is within the College, which may be regarded as similar to the stated goal of "increas[ing] the number of undergraduate applications that express interest in specific departments within the college (as compared to, say, "pre-med," or engineering)."

As suggested above, we anticipate that students applying to a specific program will be more likely to be retained through graduation, and will be more likely to remain engaged as alumni/ae, furthering two more of the "Measurable Outcomes" identified in the College's plan.

This is an undergraduate major and does not directly address issues in graduate education.

- b. strengthen the discipline through scholarship? And**
- c. foster collaboration across disciplines?**

This is an interdisciplinary undergraduate major, and so these are not the principal objectives of the proposal. Nevertheless, a desired, and expected, side-benefit of establishing the major will be to more tightly connect faculty across multiple departments of the College, as well as faculty from outside the College and scientists outside the University. The ISO's experience is that when we do this we increase collaborations across disciplines. This cross-disciplinary fertilization is itself an important vehicle for "strengthen[ing] the discipline[s]."

- d. increase attractiveness of the department and the college (to faculty, undergraduate students, graduate students, potential donors)?**

We have addressed the question of how the Origins major increases the attractiveness of the College/University to undergraduate students. We make no claim that it will do the same for graduate students, for whom it is likely to be mostly invisible in and of itself. However, we would imagine that it could lay the foundation either for a single interdisciplinary graduate program of similar scope, or for one or more such programs of more limited scope. For faculty, it seems likely to be of neutral effect for many faculty, but to be attractive to a subset of faculty who value the possibilities of interdisciplinary scholarship and teaching; thus on the whole the proposed Origins Major should be a net positive. Finally, as described above, as a nationally unique program it would seem likely to be attractive to potential donors.

**7. How does the proposed program relate to the university's strategic plan?  
Might the program:**

- a. involve alliance areas?**

The program is offered under the auspices of the ISO, which is the multi-institutional realization of the Origins Alliance.

- b. involve internationalization?**

There are, within the context of the major, multiple opportunities for international educational experiences. (One example is paleontology, (paleo-)anthropology, and geology field experiences in Africa and South America.) As a distinctive undergraduate major, it may well be marketable to foreign students, although that marketability may require a track record of post-graduation placement in graduate and professional programs or appropriate post-graduate employment.

- c. involve other units?**

The program involves faculty from SOM, and the CMNH. Faculty from other units, including WSOM and SODM are likely to participate.

**d. increase the university's impact by advancing our academic programs?**

As a nationally unique academic program, the proposed major has the potential to increase the University's impact.

**e. increase the diversity on our campus?**

Without specific research, it is difficult to assess whether the major would be differentially attractive to groups whose presence would increase campus diversity.

**f. strengthen institutional resources?**

Insofar as the major succeeds in various goals we have identified -- attracting a desirable cohort of students, attracting philanthropy, increasing interdisciplinary collaborations, strengthening collaborations with partner institutions — it will strengthen institutional resources.

**g. foster collaborations/partnerships with other institutions?**

The major involves the CMNH. We will also work to involve ideastream in the major activities.

**8. How will the program contribute to CWRU's reputation regionally, nationally, and internationally?**

This is a distinctive undergraduate major. More than that it represents a different take on undergraduate STEM education at a private or public research university. That has many positive possibilities (as described above) for reputation building, certainly regionally and nationally, but perhaps even internationally.

**9. To what extent does the new program reflect a change of departmental priorities and subsequent reallocation of resources?**

The question is not directly applicable, however, perhaps a relevant point to make is that the program may allow redistribution of effort among CAS (and other CWRU) departments in a way that is beneficial to each of them. In particular, certain departments (BME, Biology, Chemistry) currently have a heavy burden of teaching and advising due to the popularity of their major programs among pre-med students. To the extent that the Origins major allows these pre-med students to

move away from traditional pre-med majors it may allow a shifting of the teaching and advising burden away from those traditional department-based pre-medical courses of study.

**EXPENSES**

assume 15 per cohort

Item	new costs (K\$)	total (K\$)
Teaching	29.9	29.9
Advising	3.9	3.9
Administration	21.1	21.1
Program Funds	12.0	12.0

total **67** 66.9

**additional costs for 5 additional students per cohort**

Advising	1.3	0.0	1.3
Program Funds	1.7	0	1.7
total	3.0	0.0	3.0

**INCOME**

	students /cohort	cohorts	Origins	nominal tuition	additional %	additional \$/student	additional income (K\$)	revenue
<b>10/cohort</b>	<b>10</b>	<b>4</b>	<b>40</b>	<b>41.5</b>	<b>4.05</b>	<b>1.68075</b>	<b>67 10 @ 4.05%</b>	<b>0.3</b>
	10	4	40	41.5	4.5	1.8675	75 10 @ 4.5%	7.8
	10	4	40	41.5	5	2.075	83 10 @ 5%	16.1
<b>15/cohort</b>	<b>15</b>	<b>4</b>	<b>60</b>	<b>41.5</b>	<b>2.85</b>	<b>1.18275</b>	<b>71 15 @ 2.85%</b>	<b>1.06</b>
	15	4	60	41.5	3	1.245	75 15 @ 4%	4.80
	15	4	60	41.5	4	1.66	100 15 @ 4%	29.70
	15	4	60	41.5	5	2.075	124.5 15 @ 5%	54.60
<b>20/cohort</b>	<b>20</b>	<b>4</b>	<b>80</b>	<b>41.5</b>	<b>2.2</b>	<b>0.913</b>	<b>73.04 20 @ 3%</b>	<b>0.16</b>
	20	4	80	41.5	3	1.245	100 20 @ 3%	26.72
	20	4	80	41.5	4	1.66	132.8 20 @ 4%	59.92
	20	4	80	41.5	5	2.075	166 20 @ 5%	93.12

## Origins Major BA

Sample Educational Plan Template non Pre-Med

### Key:

Open Elective

SAGES requirements of the CAS

Science Core

Origins Core

Origins Focus

(courses fulfilling multiple purposes shown in all appropriate colors)

- <sup>1</sup> Fulfills Social Sciences requirement
- <sup>2</sup> Fulfills Natural and Mathematical Sciences requirement
- <sup>3</sup> Fulfills Arts and Humanities requirement
- <sup>4</sup> Fulfills Quantitative Reasoning Requirement
- <sup>5</sup> Fulfills Global and Cultural Diversity requirement
- <sup>6</sup> Fulfills PHED requirement
- <sup>7</sup> Fulfills Departmental seminar requirement
- <sup>8</sup> 300 level or above

## Year I

### **Fall**

Course	Credits
Freshman Seminar	3
PHED I <sup>6</sup>	0
Quantitative Reasoning <sup>4</sup> MATH 121	4
Natural/Math. Sciences I <sup>2</sup> PHYS 121	4
CHEM 105	3
Semester Credits	14

### **Spring**

Course	Credits
Natural/Mathematical Sciences II <sup>2</sup> PHYS 122	4
BIOL 214	4
MATH 122	4
Open Elective I	3
Semester Credits	15

## Year II

### **Fall**

Arts and Humanities I	3
University Seminar I	3
CHEM 106	4
ORIG 202      Origins II. Life in all its diversity	3
Open Elective II	3
Semester Credits	16

### **Spring**

University Seminary II	3
PHED II <sup>6</sup>	0
BIOL 225      Evolution	3
ORIG 201      Origins I. From the Beginning	3
Open Elective III	3
Open Elective IV	3
Semester Credits	15

**Summer suggestion:** work in CWRU lab

### Year III

#### **Fall**

Social Sciences I	3	
ORIG 351 <sup>8</sup> Topics in Origins	3	
Prereq to Origins Focus course	3	
Open Elective V	3	
Open Elective VI	3	
Semester Credits		15
Credits at 300 level or above		3

#### **Spring**

Social Sciences II	3	
Departmental Seminar <sup>7,8</sup>	3	
ORIG 301/MATH 3xx <sup>8</sup> Mathematical Modeling	3	
Origins Focus I <sup>8</sup>	3	
Open Elective VII	3	
Semester Credits		15
Credits at 300 level or above		9

**Summer suggestion:** NSF REU

### Year IV

#### **Fall**

Global and Cultural Diversity <sup>5</sup>	3	
ORIG 351 <sup>8</sup> Topics in Origins	3	
Origins Focus II <sup>8</sup>	3	
Open Elective VIII <sup>8</sup>	3	
Open Elective IX	3	
Semester Credits		15
Credits at 300 level or above		9

#### **Spring**

Arts and Humanities II	3	
Senior Capstone <sup>8</sup>	3	
Origins Focus III <sup>8</sup>	3	
Open Elective X <sup>8</sup>	3	
Open Elective XI	3	
Semester Credits		15
Credits at 300 level or above		9

<b>Total Credits</b>	<b>120</b>
<b>Total Credits at 300 level or above</b>	<b>30</b>

## Origins Major BA

Sample Educational Plan for Pre-Med (Mathematical/Physical Sciences Track)

### Key:

Open Elective

SAGES requirements of the CAS

Science Core

Origins Core

Origins Focus

Pre-Health Requirement

(courses fulfilling multiple purposes shown in all appropriate colors)

- <sup>1</sup> Fulfills Social Sciences requirement
- <sup>2</sup> Fulfills Natural and Mathematical Sciences requirement
- <sup>3</sup> Fulfills Arts and Humanities requirement
- <sup>4</sup> Fulfills Quantitative Reasoning Requirement
- <sup>5</sup> Fulfills Global and Cultural Diversity requirement
- <sup>6</sup> Fulfills PHED requirement
- <sup>7</sup> Fulfills Departmental seminar requirement
- <sup>8</sup> 300 level or above

## Year I

### Fall

Course	Credits
First Seminar	4
PHED I <sup>6</sup>	0
Quantitative Reasoning <sup>4</sup> Calculus for Sci/Eng I. MATH 121	4
Natural/Math Sciences I Intro. Physics I. PHYS 121 (or 115) <sup>2</sup>	4
Natural/Math Sciences I Principles of Chemistry I CHEM 105 <sup>2</sup>	3
Open Elective I e.g. ORIG 101	1

Semester Credits 16

### Spring

Course	Credits
Principles of Chemistry II CHEM 106	3
Principles of Chemistry Lab CHEM 113	2
Calculus for Science & Engineering II MATH 122	4
Intro. Physics II. PHYS 122 (or 116)	4
Open Elective II	3

Semester Credits 16

## Year II

### Fall

University Seminar I	3
Social Sciences I <sup>1</sup> Sociology (eg SOCI 101)	3
Genes, Evolution and Ecology (with Lab) BIOL 214 <sup>2</sup>	4
Introductory Organic Chemistry I CHEM 223 <sup>2</sup>	3
Introductory Organic Chemistry Lab I CHEM 233 <sup>2</sup>	2

Semester Credits 15

### Spring

University Seminar II	3
PHED II <sup>6</sup>	0
Introductory Organic Chemistry II CHEM 224 <sup>2</sup>	3
Introductory Organic Chemistry Lab II CHEM 234 <sup>2</sup>	2
Cells and Proteins BIOL 215 (with lab)	4
Origins I. From the Beginning ORIG 201	3

Semester Credits 15

**Summer suggestion:** work in CWRU lab

### Year III

#### **Fall**

Development and Physiology (with Lab) BIOL 216 <sup>2</sup>	4	
Biochemistry BIOC 307 <sup>8</sup> <b>Origins Focus I</b>	4	
ORIG 202      Origins II. Life in all its diversity	3	
Open Elective III	3	
Open Elective IV <sup>#</sup>	0-3	
Semester Credits		14-17
Credits at 300 level or above		6

#### **Spring**

Social Sciences II <sup>1</sup> Psychology (eg PSCL 101)	3	
Departmental Seminar <sup>7,8</sup>	3	
ORIG 301/MATH 3xx <sup>8</sup> Mathematical Modeling	3	
ORIG 360 <sup>8</sup> Independent Study in Origins	3	
Open Elective IV <sup>#</sup>	0-3	
Semester Credits		12-15
Credits at 300 level or above		6

<sup>#</sup>Students may choose to do Open Elective IV in Fall of Year III to free up time for MCAT studying in Spring.

**Summer suggestion:** NSF REU

### Year IV

#### **Fall**

Arts and Humanities I <sup>3</sup>	3	
Global and Cultural Diversity <sup>5</sup>	3	
ORIG 351 <sup>8</sup> Topics in Origins	3	
<b>Origins Focus II (eg. ANTH 302 Darwinian Medicine)<sup>9</sup></b>	3	
Open Elective VI <sup>8</sup>	3	
Semester Credits		15
Credits at 300 level or above		9

#### **Spring**

Arts and Humanities II <sup>3</sup>	3	
Senior Capstone <sup>8</sup>	3	
<b>Origins Focus III (eg. EEPS 345 Planetary Materials)<sup>9</sup></b>	3	
Open Elective VII <sup>8</sup>	3	
Open Elective VIII <sup>8</sup>	3	
Semester Credits		15
Credits at 300 level or above		9

<b>Total Credits</b>	<b>120</b>
<b>Total Credits at 300 level or above</b>	<b>30</b>

## Origins Major BA

Sample Educational Plan for Pre-Med (Biological/Chemical Sciences Track)

### Key:

Open Elective

SAGES requirements of the CAS

Science Core

Origins Core

Origins Focus

Pre-Health Requirement

(courses fulfilling multiple purposes shown in all appropriate colors)

- <sup>1</sup> Fulfills Social Sciences requirement
- <sup>2</sup> Fulfills Natural and Mathematical Sciences requirement
- <sup>3</sup> Fulfills Arts and Humanities requirement
- <sup>4</sup> Fulfills Quantitative Reasoning Requirement
- <sup>5</sup> Fulfills Global and Cultural Diversity requirement
- <sup>6</sup> Fulfills PHED requirement
- <sup>7</sup> Fulfills Departmental seminar requirement
- <sup>8</sup> 300 level or above

## Year I

### Fall

Course		Credits
First Seminar		4
PHED I <sup>6</sup>		0
Quantitative Reasoning <sup>4</sup>	MATH 121	4
Genes, Evolution and Ecology (with Lab)	BIOL 214 <sup>2</sup>	4
Natural/Math Sciences I Principles of Chemistry I	CHEM 105 <sup>2</sup>	3
Open Elective I	e.g. ORIG 101	1

Semester Credits 16

### Spring

Course		Credits
Principles of Chemistry II	CHEM 106	3
Principles of Chemistry Lab	CHEM 113	2
Cells and Proteins	BIOL 215 (with lab)	4
MATH 122		4
Open Elective II		3

Semester Credits 17

## Year II

### Fall

University Seminar I		3
Introductory Organic Chemistry I	CHEM 223	3
Introductory Organic Chemistry Lab I	CHEM 233	2
Development and Physiology (with Lab)	BIOL 216	4
Open Elective III		3

Semester Credits 15

### Spring

University Seminar II		3
PHED II <sup>6</sup>		0
Introductory Organic Chemistry II	CHEM 224	3
Introductory Organic Chemistry Lab II	CHEM 234	2
Introductory Physics I. PHYS 121		4
Origins I. From the Beginning	ORIG 201	3

Semester Credits 15

**Summer suggestion:** work in CWRU lab

### Year III

#### **Fall**

Social Sciences I <sup>1</sup>	Sociology (eg SOCI 101)	3
Biochemistry BIOC 307 <sup>B</sup>	Origins Focus I	4
ORIG 202	Origins II. Life in all its diversity	3
ORIG 351 <sup>B</sup>	Topics in Origins	3
Open Elective IV		3

Semester Credits

16

Credits at 300 level or above

6

#### **Spring**

Social Sciences II <sup>1</sup>	Psychology (eg PSCL 101)	3
Departmental Seminar <sup>7,8</sup>		3
ORIG 301/MATH 3xx <sup>B</sup>	Mathematical Modeling	3
PHYS 116 or 122		4
Open Elective V		0-3

(time to study for MCATs)

Semester Credits

13-16

Credits at 300 level or above

6

**Summer suggestion:** NSF REU

### Year IV

#### **Fall**

Arts and Humanities I <sup>3</sup>		3
Global and Cultural Diversity <sup>5</sup>		3
ORIG 351 <sup>B</sup>	Topics in Origins	3
Origins Focus II (eg. ANTH 302 Darwinian Medicine) <sup>6</sup>		3
Open Elective VI <sup>B</sup>		3

Semester Credits

16

Credits at 300 level or above

9

#### **Spring**

Arts and Humanities II <sup>3</sup>		3
Senior Capstone <sup>8</sup>		3
Origins Focus III (eg. BEPS 345 Planetary Materials) <sup>6</sup>		3
Open Elective VII <sup>8</sup>		3

Semester Credits

12

Credits at 300 level or above

9

**Total Credits**

**120**

**Total Credits at 300 level or above**

**30**

# **Master of Public Health/Master of Science in Nutrition Dual Degree Proposal**

## **(Plan B, non-thesis requiring)**

**Document of December 8, 2014; Revised February 2, 2015**

This is a dual degree program that is offered jointly by the Departments of Epidemiology and Biostatistics, and Nutrition. The core Master Degree courses include a mixture of those from nutrition, biochemistry and public health.

### **1. Background and Justification**

The World Health Organization, (WHO), identifies diet and nutrition as a lifestyle factor critical for maintenance of health and well-being, as well as a factor influencing risk of chronic disease. Cardiovascular disease, diabetes, cancer and obesity are examples of chronic diseases significantly related to diet and nutrition. Obesity is one of the most common conditions and is growing to epidemic proportions. The two most common associated co-morbidities of obesity, type 2 diabetes and hypertension, are highly prevalent health risks and are among the principal causes of death in the general population. Additionally, in third world countries, malnutrition is a very common cause of infection or death, especially in young children. Accordingly, knowledge of the basic elements of good nutrition and the biochemical pathways associated with the metabolism of protein, fat and carbohydrate offers important contributions to mitigate these health problems. The proposed dual degree program will provide the student with a core understanding of the mechanics of metabolism combined with advanced courses in public health and nutrition. This combined approach will yield a highly qualified and competitive public health practitioner trained to develop evidence based policy, programs, strategies and advocacy to address these health risks and problems.

The trained graduate could be employed in a wide variety of settings, including (but not limited to) local, state, national, or global public policy, governmental public health, hospital outreach, community-based health non-profit organizations, health organizations, research projects; or the Food and Drug Administration. Additionally, these graduates could serve as health emissaries to foreign countries regarding nutrition, sufficient food supply, sanitary environment, food safety, oral rehydration, or the advisability of food supplements. Recent evidence demonstrates that obesity has now passed tobacco as the top driver of health care cost in the US at \$190 billion per year. At a time of high health care cost, improved preventive care represents a best hope to decrease the healthcare cost of obesity and its related chronic diseases while improving quality of life before the complications of poor nutrition occur.

## **2. Administration**

Program administration and governance will be managed jointly by program liaisons identified from Public Health, Nutrition and Biochemistry. Liaisons will meet at least once per semester to assure effective program management. Each liaison will also work within management structure of their own program in order to meet necessary liaison responsibilities. Program leadership has substantial experience with dual degree program administration, with 9 successfully managed dual degrees offered by the MPH program. Dual degree students make up 40 to 45% of the MPH student body. Dual degree management is bolstered by the MPH Management Team which meets on a weekly basis to discuss administrative issues and review student progress. Retreats are conducted 4 times yearly to discuss “big issues” that require input from the MPH executive committee. The Management Team includes representatives from the Student Public Health Assembly who have the opportunity to bring student issues and contribute to program decision-making. These students are dismissed during discussion of individual student progress.

- Master of Public Health liaison: Scott Frank, Associate Professor of Epidemiology and Biostatistics
- Nutrition Department liaison: Hope Barkoukis, Associate Professor of Nutrition

Responsibilities of the liaisons include:

- Program policy decision-making: Liaisons will make policy recommendations through appropriate structure in each department.
- First level student advising: Meeting with all MPH/Nutrition dual degree students to assure appropriate networking of the student into the program.
- Assign faculty advisors: Public Health and Nutrition will each identify a primary faculty advisor for MPH/Nutrition dual degree students, though if a better match is apparent the liaison may assign a different advisor.
- Systematic review of student progress: This task will be addressed independently by each program through existing mechanisms and further discussed at liaison meetings.
- Oversee recruitment and admission of MPH/Nutrition dual degree students.
- Participate in a yearly meeting of MPH dual degree liaisons from all dual degree programs to compare program progress and discuss dual degree issues that cross disciplinary boundaries.
- Oversee routine and special communications with MPH/Nutrition dual degree students, including delegation of these communications as appropriate.

## **3. Program Structure**

If one were to acquire the MPH and MS degrees independently, it would require the completion of 42 hours for the MPH program and 30 hours for the MS in Nutrition program (a total of 72 credit hours). The 42 credit hour and 30 credit hour numbers are for the independent programs as accredited through the Ohio Board of Regents.

In the dual degree program, cross counting allows for a reduction in the total number of class hours to 58 credit hours for both degrees as described below (33 credit hours in MPHP and 25 credit hours in BIOC/NTRN).

The MPH/Nutrition dual degree is envisioned with students able to apply for either degree, then later join the other; or apply directly for the joint degree. Both the MPH and MS programs confer degrees through the School of Graduate Studies and as such are subject to Graduate Studies rules and procedures. Both programs are housed in the School of Medicine.

#### 4. Dual Degree Curriculum: Sample Program of Study

<b>Year 1 – Emphasis on Biochemistry and Public Health</b>					
<b>Fall Course #</b>	<b>Fall Course Title</b>	<b>Cr Hrs/ Degree</b>	<b>Spring Course #</b>	<b>Spring Course Title</b>	<b>Cr Hrs/ Degree</b>
BIOC 407	Introduction to Biochemistry*	4/MS	BIOC 408	Molecular Biology*	4/MS
MPHP 406	History and Philosophy of Public Health**	3/MPH	MPHP 429	Introduction to Environmental Health**	3/MPH
MPHP 483	Intro to Epidemiology for Public Health**	3/MPH & MS	MPHP 405	Statistical Methods in Public Health**	3/MPH
MPHP 403	Public Health Research & Evaluation Methods**	3/MPH	MPHP 439	Public Health Management & Policy**	3/MPH
Total Fall MS Credits		4+3	Total Spring MS Credits		4
Total Fall MPH Credits		9	Total Spring MPH Credits		9
Year 1 MS Credit Hour Total/Dual Total					8/11
Year 1 MPH Credit Hour Total/Dual Total					18/18
Year 1 Dual Degree Credit Hour Total/Dual Total					26/29

\* MS Required. \*\*MPHP Required. Note: MS degree components are shaded in grey.

<b>Year 2 – Emphasis on Nutrition and Public Health</b>					
<b>Fall Course #</b>	<b>Fall Course Title</b>	<b>Cr Hrs/ Degree</b>	<b>Spring Course #</b>	<b>Spring Course Title</b>	<b>Cr Hrs/ Degree</b>
NTRN 433	Advanced Human Nutrition I*	4/MS	NTRN 434	Advanced Human Nutrition II*	3/MS
MPHP 411	Introduction to Health Behavior**	3/MPH & MS	MPHP	Public Health Major Elective	3/MPH
NTRN	Nutrition Elective	3/MS & MPH	MPHP 650	Public Health Practicum**	3/MPH
Total Fall MS Credits		4+3	Total Spring MS Credits		3
Total Fall MPH Credits		3+3	Total Spring MPH Credits		6
Year 2 MS Credit Hour Total/Dual Total					7/10
Year 2 MPH Credit Hour Total/Dual Total					9/12
Year 2 Dual Degree Credit Hour Total/Dual Total					16/22

\* MS Required. \*\*MPHP Required. Note: MS degree components are shaded in grey.

<b>Year 3 – Emphasis on Nutrition and Public Health</b>					
<b>Fall Course #</b>	<b>Fall Course Title</b>	<b>Cr Hrs/ Degree</b>	<b>Spring Course #</b>	<b>Spring Course Title</b>	<b>Cr Hrs/ Degree</b>
NTRN 452	Nutritional Biochemistry and Metabolism*	3/MS	NTRN	Nutrition Elective	3/MS & MPH
MPHP 652	Public Health Capstone**	3/MPH	MPHP 652	Public Health Capstone**	3/MPH
NTRN	Nutrition Elective	3/MS & MPH	EXAM 600	MS Qualifying Exam*	1/MS
Total Fall MS Credits		6	Total Spring MS Credits		4
Total Fall MPH Credits		3+3	Total Spring MPH Credits		3+3
Year 3 MS Credit Hour Total/Dual Total					10/10
Year 3 MPH Credit Hour Total/Dual Total					6/12
Year 3 Dual Degree Credit Hour Total/Dual Total					16/22
Grand MS Credit Hour Total/Dual Total					25/31
Grand MPH Credit Hour Total/Dual Total					33/42
Grand Dual Degree Credit Hour Total/Dual Total					58/73

\* MS Required. \*\*MPHP Required. Note: MS degree components are shaded in grey.

MPH Dual Degree = 33 credit hours (standard program 42 credit hours)  
 BIOC/NTRN Dual Degree = 25 credit hours (standard program 30 credit hours)  
 Total Dual Degree = 58 credit hours

The standard MPH program consists of 21 hours of core required material, 9 hours of major, 3 hours of elective, and 9 hours of culminating experience (3 credits of practicum and 6 hours of capstone). In the MPH/MS in Nutrition dual degree program, the 9 hours of major credit will consist of one MPH major required course (see below) and 2 approved Nutrition courses pertinent to that major. An additional approved Nutrition course may be taken in fulfillment of the MPH Elective course. For the purposes of completing the M.S. in Nutrition, the 25 hours of Nutrition and Biochemistry will be complimented with 6 hours of MPHP courses. Default courses counting toward the MS in Nutrition will be MPHP 483 (Public Health Epidemiology) and MPH 411 (Health Behavior).

#### MPH Major Required Courses:

- Health Promotion and Disease Prevention:
  - MPHP 433 Community Intervention and Program Evaluation
- Health Care Policy and Administration:
  - MPHP 468 Continual Improvement of Health Care
- Global Health (choose one):
  - INTH 401 Fundamentals of Global Health
  - MPHP 484 Global Health Epidemiology
  - MPHP 494 Infectious Disease epidemiology
- Population Health Research
  - Methods course, individually determined with Population Health Research track leader

The sample program of study above is intended as a template which will vary based on student needs. While the basic coursework will remain consistent, electives will differ and the sequence or number of courses taken during different years of the program may vary. Students have the option of taking summer courses, which could change the number of credit hours per semester or the duration of their program of study. All students will meet with program liaisons from Public Health and Nutrition upon program entry and with assigned faculty advisors throughout the duration of the program to individualize their program of study and assure compliance with all program requirements. If a student elects to discontinue the dual degree program and complete only one of the degrees, they will be expected to meet full credit hour requirements of the remaining program.

## 5. Admissions

Target enrollment in the program is six or more students, achieved by admission of at least two students annually. Students wishing to enroll in the dual degree program apply and are admitted into each program separately. While admissions committees for each program will communicate with each other regarding applicants, each committee will decide independently about the suitability of the applicant to their program. Admissions for both programs comply with policies set by the School of Graduate Studies. Applicants should provide the program with a national exam score (such as the GRE, MCAT, LSAT, GMAT, etc) and a TOEFL score if the applicant is applying from a foreign country where English is not the

native language. In addition, in order to be prepared to take graduate courses in the biological sciences, the applicant must have taken introductory biology, general chemistry, and organic chemistry. Additional courses such as introductory physics, calculus, statistics and genetics would strengthen the student's application although these would not be required for entry into the dual degree program. The standard national exam score to be reported will be the GRE, but as noted above, others may substitute. Once students have been admitted, they will consult with their MPH Program Advisor to determine their appropriate course of MPH study and with the Department of Nutrition Advisor to determine their appropriate program of MS study. Advisor meetings will continue at least once per semester.

## **6. Tuition Revenue Mechanics:**

For courses taught by Nutrition, Epidemiology and Biostatistics, or Biochemistry (prefixes: NTRN, BIOC, MPHP, EPBI), the tuition return will go to the teaching department. For courses taught by other departments, usual medical school rules for the tuition return should apply, with the "home" department being Nutrition if the course is being used for the MS in Nutrition, and Epidemiology and Biostatistics if the course is being used for the MPH.

No additional costs are anticipated in the initiation or maintenance of the MPH/Nutrition dual degree program.

## **7. Approval Signatures**

Vice Chair for Education, Department of Epidemiology and Biostatistics  
Dr. Mendel Singer

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Interim Chair, Department of Nutrition  
Dr. Hope Barkoukis

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Chair, Department of Biochemistry  
Dr. Michael A. Weiss

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Dean, School of Medicine  
Dr. Pamela A. Davis

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Dean, School of Graduate Studies  
Dr. Charles Rozek

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## **8. Student Activities**

The MPH/Nutrition program liaisons or their designee will regularly contact students in the program by email with information about activities and to verify proper progress. At the conclusion of year one, the faculty advisors (from MPH and Nutrition) will notify students of their progress. During the subsequent years, yearly student evaluations will be completed once by each of the respective programs.

Students are encouraged to participate in regular Departmental activities as their schedule will allow. Under the direction of the Graduate Program Directors, all MPH/MS students enrolled in the dual degree program will meet twice a year in a colloquium retreat (approximately one-half day in length). The purposes of the retreat are (1) to ensure the programs are meeting the expectations of the students and the faculty, (2) to capture the benefits of the interdisciplinary experience, (3) to socialize the dual degree students as a group, instead of small groups of isolated students, and (4) to explore the intellectual and professional challenges of doing interdisciplinary work. Students from other dual degree programs may also be included.

In addition, at the beginning of their first semester the Graduate Program Advisors will meet with each dual degree student to review their schedule and to explore any other issues on which they need guidance and advice. All new students will be partnered with an experienced student to address questions the students may have about the program and life as a graduate student at Case. These students will initially be drawn from the ranks of existing MS, MPH, or PhD. students. Once the program is established student guides will be partnered with advanced MPH/MS students. A get-acquainted welcoming event will be organized in the fall to facilitate this process.

The MPH Capstone requirement and the MS EXAM 600 requirement may be completed jointly by the dual degree student. Each student must form a Capstone Committee that includes at least 3 members, with at least one from the MPH program and one from Nutrition. Capstone Committee membership should be driven by the student's scholarly and research topic interest. Detailed criteria and guidelines for the completion of this project are available. To satisfy requirements for both programs, the Capstone must include a focus on both nutrition and public health; and must be approved by committee members from both programs. The

product of this Capstone project may be framed as an essay, a report, or as a manuscript suitable for peer-reviewed submission. In addition to the written product, the student is required to conduct a formal oral presentation at the MPH conducted Public Health Innovations conference offered yearly in the spring and fall. Capstone evaluation includes assessment of the essay, the oral presentation, and completion of Capstone competencies by each Capstone Committee member.

Other appropriate activities for the MPH/MS students may include attending the weekly Departmental Seminar and Student Seminars, as well as annual named lectureships, participating in annual retreats, and one or more journal clubs.

## **9. Advantages of the Joint Degree Program**

The key advantage the MPH/MS program will be the integration of the two disciplines *during* the time the students receive their training, thus allowing the students to develop a unique focus on their studies in each of the two disciplines. Creating a nutrition track (major) within the MPH program was considered as an alternative to a dual degree, but rejected because of limitations on rigor and depth possible in a 42 credit hour nutrition track compared to the 58 credit hour dual degree. Further, this comprehensive, concurrent focus encourages systems thinking and may compel students to look at each discipline through a different lens. One of the substantial strengths of the CWRU MPH program involves the number and diversity of dual degree programs offered. This encourages a true multidisciplinary approach, with classmates from 9 different MPH dual degree programs (medicine, dental medicine, anthropology, law, business, nursing, social work, bioethics, and integrated undergraduate) encouraging dialogue and broadening of perspective and worldview. In addition, the usual Master of Science in Nutrition and MPH programs are each two year programs, but the students in the dual degree program will be able to complete the program requirements in just 36 months (about 6 semesters).

It should be noted that there is the potential for confusion regarding an existing MS program titled the Public Health Nutrition Dietetic Internship Program (PHNDIP), though often referred to as “Public Health Nutrition”. This proposed dual degree program differs starkly from the PHNDIP, also housed within the Nutrition Department. The PHNDIP is an accredited dietetic internship program consisting of 1500 hours of community-based supervised practice while concurrently completing the MS degree coursework. This internship program is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) and is the longest running program of its kind in the US, started in 1941. Students cannot apply for direct admission to the PHNDIP program, but instead must participate in a national online match program after having completed the necessary prerequisite science and nutrition courses. Students admitted to the dual degree program will not be eligible for the PHNDIP because they would likely lack the mandatory prerequisite courses necessary for participation eligibility in the national online application process. Specifically, an additional 17 credit hours in science courses

and 25 additional credit hours in nutrition courses would be necessary for PHNDIP application eligibility

**10. MPH/MS in Nutrition programs in the US (results of a Google search) –**

As noted below, there appear to be very few dual degree MPH/MS in Nutrition programs in the United States. While there are some programs that have a concentration in their public health program in nutrition (University of Minnesota, University of Massachusetts, City University of New York, Hunter College, University of Washington, University of Michigan to name a few) the joint MPH/MS degree is indeed rare, as shown in the list below. The paucity of programs does not reflect the importance of this disciplinary combination or student interest in the dual degree, but rather resources necessary to offer this complex and comprehensive program. We are fortunate to have the resources and leadership vision to join this list of outstanding universities.

- Tufts University (MPH/MS Nutrition)
- University of Tennessee (MPH/MS Nutrition)
- Benedictine University (MPH/MS Nutrition)
- Saint Louis University (MPH/MS Nutrition)
- Stony Brook University (MPH/MS Nutrition)
- Johns Hopkins University (MSPH/Registered Dietitian)
- University of North Carolina (MPH/Registered Dietitian)

## **Course descriptions for Biochemistry and Nutrition courses anticipated to be taken as part of the MPH/MS program**

Note: All listed courses have been reviewed and are currently active.

### **BIOC 407. Introduction to Biochemistry: From Molecules To Medical Science. 4 credits.**

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](#) or [CHEM 224](#).

### **BIOC 408. Molecular Biology. 4 credits.**

An examination of the flow of genetic information from DNA to RNA to protein. Topics include: nucleic acid structure; mechanisms and control of DNA, RNA, and protein biosynthesis; recombinant DNA; and mRNA processing and modification. Where possible, eukaryotic and prokaryotic systems are compared. Special topics include yeast as a model organism, molecular biology of cancer, and molecular biology of the cell cycle. Current literature is discussed briefly as an introduction to techniques of genetic engineering. Recommended preparation for [BIOC 408](#) and [BIOL 408](#): [BIOC 307](#) or [BIOL 214](#). Offered as [BIOC 308](#), [BIOL 308](#), [BIOC 408](#), and [BIOL 408](#).

### **BIOC 412. Proteins and Enzymes. 3 credits.**

Aspects of protein and nucleic acid function and interactions are discussed, including binding properties, protein-nucleic acid interactions, kinetics and mechanism of proteins and enzymes, and macromolecular machines. Recommended Preparation: [CHEM 301](#). Offered as [BIOC 312](#) and [BIOC 412](#).

### **BIOC 420. Current Topics in Cancer. 3 credits.**

The concept of cancer hallmarks has provided a useful guiding principle in our understanding of the complexity of cancer. The hallmarks include sustaining proliferative signaling, evading growth suppressors, enabling replicative immortality, activating invasion and metastasis, inducing angiogenesis, resisting cell death, deregulating cellular energetics, avoiding immune destruction, tumor-promoting inflammation, and genome instability and mutation. The objectives of this course are to (1) examine the principles of some of these hallmarks, and (2) explore potential therapies developed based on these hallmarks of cancer. This is a student-driven and discussion-based graduate course. Students should have had some background on the related subjects and have read scientific papers in their prior coursework. Students will be called on to present and discuss experimental design, data and conclusions from assigned publications. There will be no exams or comprehensive papers but students will submit a one-page critique (strengths and weaknesses) of one of the assigned papers prior to each class meeting. The course will end with a full-day student-run symposium on topics to be decided jointly by students and the course director. Grades will be based on class participation, written critiques, and symposium presentations. Offered as [BIOC 420](#), [MBIO 420](#), [MVIR 420](#), [PATH 422](#), and [PHRM 420](#). Prereq: [CBIO 453](#) and [CBIO 455](#).

**BIOC 434. Structural Biology. 3 credits.**

Introduces basic chemical properties of proteins and discusses the physical forces that determine protein structure. Topics include: the elucidation of protein structure by NMR and by X-ray crystallographic methods; the acquisition of protein structures from data bases; and simple modeling experiments based on protein structures. Offered as [BIOC 334](#), [BIOL 334](#), [BIOC 434](#), and [BIOL 434](#).

**BIOC 452. Nutritional Biochemistry and Metabolism. 3 credits.**

Mechanisms of regulation of pathways of intermediary metabolism; amplification of biochemical signals; substrate cycling and use of radioactive and stable isotopes to measure metabolic rates. Recommended preparation: [BIOC 307](#) or equivalent. Offered as [BIOC 452](#) and [NTRN 452](#).

**NTRN 433. Advanced Human Nutrition I. 4 credits.**

Emphasis on reading original research literature in energy, protein and minerals with development of critical evaluation and thinking skills. Recommended preparation: [NTRN 201](#) and [CHEM 223](#) or equivalent.

**NTRN 434. Advanced Human Nutrition II. 3 credits.**

Emphasis on reading original research literature on vitamins with development of critical evaluation and thinking skills. Recommended preparation: [NTRN 433](#) or consent.

**NTRN 435. Maternal Nutrition. 3 credits.**

Study of current research literature on nutrition for pregnancy, lactation, infancy and childhood, including assessment and requirements. Recommended preparation: Nutrition major or consent of instructor.

**NTRN 436: Pediatric Nutrition. 3 credits.**

This course will focus on understanding the nutritional needs of infants, children and adolescents. Evidence based guidelines will be used for discussions on best clinical practice for the management of pediatric nutrition issues. Anthropometric measurements used in growth assessment will be reviewed. Recommended preparation: [NTRN 433](#).

**NTRN 437. Evaluation of Nutrition Information for Consumers. 3 credits.**

Reading and appraisal of food and nutrition literature written for the general public, including books, magazines, newsletters. Prereq: Graduate standing and Nutrition or Public Health Nutrition major or consent of instructor.

**NTRN 438. Trends in Diet Therapy: Dietary Supplements. 3 credits**

Emphasis on reading peer reviewed medical literature and understanding the mechanisms of action for the most popular dietary supplements throughout the life cycle, how to review the efficacy and safety of dietary supplements. Special focus on understanding the Dietary Supplement Health Education Act. Recommended preparation: [NTRN 433](#) or consent.

**NTRN 440. Nutrition for the Aging and Aged. 3 credits.**

Consideration of the processes of aging and needs which continue throughout life. The influences of food availability, intake, economics, culture, physical and social conditions and

chronic disease as they affect the ability of the aged to cope with living situations. Recommended preparation: Nutrition major or consent of instructor.

**NTRN 446. Advanced Maternal Nutrition: Special Topics. 3 credits.**

Analysis of the problems commonly associated with high-risk pregnancies and fetal outcome. Discussion of causes, mechanisms, management and current research. Recommended preparation: [NTRN 435](#) or consent.

**NTRN 452. Nutritional Biochemistry and Metabolism. 3 credits.**

Mechanisms of regulation of pathways of intermediary metabolism; amplification of biochemical signals; substrate cycling and use of radioactive and stable isotopes to measure metabolic rates. Recommended preparation: [BIOC 307](#) or equivalent. Offered as [BIOC 452](#) and [NTRN 452](#).

**NTRN 454: Isotope Tracer Methodology. 3 credits.**

Stable and radioactive isotopes in metabolic research concentrating on the design of in-vitro and in-vivo investigative protocols using mostly stable isotopes and mass spectrometric analysis; critical interpretation of data from recent literature; pathway identification and kinetics.

**NTRN 455: Molecular Nutrition. 3 credits**

Nutrient control of gene expression in mammalian cells and deregulation of expression of these genes. The molecular basis of nutrition related diseases, such as diabetes mellitus, PKU, and LDL-receptor deficiency will be discussed. The application of genetic manipulation to metabolism and nutrition will be evaluated. Recommended preparation: Biochemistry 307 or 407.

**NTRN 460: Sports Nutrition. 3 credits**

Study of the relationships of nutrition and food intake to body composition and human performance. Laboratory sessions include demonstration of body composition and fitness measurements and participation in a research project. Recommended preparation: [NTRN 363](#) or [NTRN 433](#) or consent.

**NTRN 363/461: Energy Dysregulation: From Anorexia to Obesity. 3 credits**

The purpose of this course is to provide students with the knowledge of theoretical and applied concepts of exercise physiology. Students will gain an understanding of the acute and chronic physiological responses and adaptations of the cardiovascular, metabolic, hormonal, and neuromuscular systems in response to exercise. Additional topics include factors effecting performance, assessing cardiorespiratory and muscular fitness, designing exercise programs for health and wellness, special populations, and athletes, environmental considerations and nutrition's role in sport and exercise performance.

## **MPH Courses**

**INTH 401. Fundamentals of Global Health**

This course seeks to integrate the multiple perspectives and objectives in global health by investigating how the disciplines of Biology, Medicine, Anthropology, Nursing, Mathematics, Engineering analyze and approach the same set of international health problems. Students will develop a shared vocabulary with which to understand these various perspectives from within their own discipline. The focus sites will emphasize issues related to the health consequences of development projects, emergency response to a health care crisis and diseases of development in presence of underdevelopment. Offered as INTH 301 and INTH 401.

**MPHP 403. Research and Evaluation Methods. 3 Units.**

This course is designed to provide an overview of research and evaluation methods for first-year MPH students. Through lecture, discussion and application exercises, students are introduced to the principles and processes of research and evaluation methods in public health, including formulation of research questions, aims and hypotheses and evaluation goals and objectives; literature review; development/selection of conceptual and theoretical models; quantitative, qualitative and mixed methods study designs; data collection approaches (including surveys, interviews, focus groups, observations and use of existing data); research and evaluation project management; and application of ethical principles and protection of human subjects in public health research and evaluation.

**MPHP 405. Statistical Methods in Public Health. 3 Units.**

This one-semester survey course for public health students is intended to provide the fundamental concepts and methods of biostatistics as applied predominantly to public health problems. The emphasis is on interpretation and concepts rather than calculations. Topics include descriptive statistics; vital statistics; sampling; estimation and significance testing; sample size and power; correlation and regression; spatial and temporal trends; small area analysis; statistical issues in policy development. Examples of statistical methods will be drawn from public health practice. Use of computer statistical packages will be introduced. Prereq: Enrollment limited to MPH students (Plan A or Plan B) and EPBI students only. All others require instructor consent.

**MPHP 406. History and Philosophy of Public Health. 3 Units.**

The purpose of this course is to introduce students to the science and art of public health through an understanding of the history and philosophies that represent its foundation. Students will learn about the essentials of public health and applications of those precepts throughout history and in the present. The course will examine public health case histories and controversies from the past and present, in order to better understand solutions for the future. Offered as [MPHP 306](#) and [MPHP 406](#). Prereq: Enrollment limited to MPH students (Plan A or Plan B) and EPBI students or instructor consent.

**MPHP 411. Introduction to Health Behavior. 3 Units.**

Using a biopsychosocial perspective, an overview of the measurement and modeling of behavioral, social, psychological, and environmental factors related to disease prevention, disease management, and health promotion is provided. Offered as [EPBI 411](#) and [MPHP 411](#). Prereq: Enrollment limited to MPH students (Plan A or Plan B) and EPBI students or consent.

**MPHP 413. Health Education, Communication, and Advocacy. 3 Units.**

Historical, sociological, and philosophical factors that have influenced definitions and the practice

of health education and health promotion are studied. Advanced concepts in health communication theory will also be explored. This course is designed to educate, motivate, and empower undergraduate and graduate students to become advocates for their own health, the health of their peers, and the health of the community. Offered as [MPHP 313](#) and [MPHP 413](#).

**MPHP 419. Topics in Urban Health in the United States. 3 Units.**

This course examines patterns of urban health and disease across the life course among marginalized populations and communities. We will examine the socio-environmental contexts that impact health status (i.e., racism, health disparities, neighborhood context, and environmental stressors). Readings from epidemiology, sociology, and public health literature will provide a foundation for the multiple factors and processes that impact health. Offered as [EPBI 419](#) and [MPHP 419](#).

**MPHP 421. Health Economics and Strategy. 3 Units.**

This course has evolved from a theory-oriented emphasis to a course that utilizes economic principles to explore such issues as health care pricing, anti-trust enforcement and hospital mergers, choices in adoption of managed care contracts by physician groups, and the like. Instruction style and in-class group project focus on making strategic decisions. The course is directed for a general audience, not just for students and concentration in health systems management. Offered as [ECON 421](#), [HSMC 421](#), and [MPHP 421](#).

**MPHP 429. Introduction to Environmental Health. 3 Units.**

This is a survey course of environmental health topics including individual, community, population, and global issues. Introduction to risk management, important biological mechanisms, and age and developmental impacts are covered in an overview fashion. A practical inner city home environment experience is included. Offered as [EVHS 429](#) and [MPHP 429](#).

**MPHP 431. Statistical Methods I. 3 Units.**

Application of statistical techniques with particular emphasis on problems in the biomedical sciences. Basic probability theory, random variables, and distribution functions. Point and interval estimation, regression, and correlation. Problems whose solution involves using packaged statistical programs. First part of year-long sequence. Offered as [ANAT 431](#), [BIOL 431](#), [EPBI 431](#), and [MPHP 431](#).

**MPHP 432. Statistical Methods II. 3 Units.**

Methods of analysis of variance, regression and analysis of quantitative data. Emphasis on computer solution of problems drawn from the biomedical sciences. Design of experiments, power of tests, and adequacy of models. Offered as [BIOL 432](#), [EPBI 432](#), and [MPHP 432](#). Prereq: [EPBI 431](#) or equivalent.

**MPHP 433. Community Interventions and Program Evaluation. 3 Units.**

This course prepares students to design, conduct, and assess community-based health interventions and program evaluation. Topics include assessment of need, evaluator/stakeholder relationship, process vs. outcome-based objectives, data collection, assessment of program objective achievement based on process and impact, cost-benefit analyses, and preparing the evaluation report to stakeholders. Recommended preparation: [EPBI 490](#), [EPBI 431](#), or [MPHP 405](#). Offered as [EPBI 433](#) and [MPHP 433](#). Prereq: [MPHP 411](#)

**MPHP 439. Public Health Management and Policy. 3 Units.**

This course is designed to introduce students to the basics of health policy-making and includes a background on the basic structure and components of the US Health Care System (such as organization, delivery and financing). It will also cover introductory concepts in public health management, including the role of the manager, organizational design and control, and accountability. We will address relevant legal, political and ethical issues using case examples. At the end of the course, students will understand how health policy is developed and implemented in various contexts, and the challenges facing system-wide efforts at reform. This is a required course for the MPH degree. Grades will be based on a series of assignments. Prereq: Enrollment limited to MPH students (Plan A or Plan B) and EPBI Students or instructor consent.

**MPHP 442. Biostatistics II. 3 Units.**

This course deals with the basic concepts and applications of nonparametric statistics. Topics will include distribution-free statistics, one sample rank test, the Mann-Whitney and Kruskal Wallis tests, one sample and two sample U-statistics, asymptotic relative efficiency of tests, distribution-free confidence intervals, point estimation and linear rank statistics. Recommended preparation: [EPBI 441](#). Offered as [EPBI 442](#) and [MPHP 442](#).

**MPHP 447. Global Health: Outbreak Investigation in Real-Time. 3 Units.**

This course provides a trans-cultural, trans-disciplinary, multimedia learning experience by analyzing historical and real-time data from the annual dengue endemics and sporadic epidemics in Puerto Rico and Brazil. A rigorous problem-centered training in the epidemiology, prevention, treatment, and control of infectious diseases using real-time and historical surveillance data of endemic and epidemic Dengue in Bahia, Brazil. This is an advanced epidemiology course in which core material will be primarily taught through reading assignments, class discussion, group projects, and class presentations. The course will utilize the online web-based communication and learning technology to create a single classroom between the CWRU and international partners with unique and complementary skills. In addition to joint classroom lectures across sites, student groups will also perform smaller-scale videoconference meetings for assigned group projects, thus creating strong international connections for the students, faculty, and our institutions. Note: Due to the complexities of time zones for this international course, the course will begin at 8:00a.m. until the U.S.A. adjusts clocks for Daylight Savings Time (unlike Brazil). Therefore, classes after the second week of March will begin at 9:00a.m. Offered as: [EPBI 447](#), [INTH 447](#), and [MPHP 447](#).

**MPHP 450. Clinical Trials and Intervention Studies. 3 Units.**

Issues in the design, organization, and operation of randomized, controlled clinical trials and intervention studies. Emphasis on long-term multicenter trials. Topics include legal and ethical issues in the design; application of concepts of controls, masking, and randomization; steps required for quality data collection; monitoring for evidence of adverse or beneficial treatment effects; elements of organizational structure; sample size calculations and data analysis procedures; and common mistakes. Recommended preparation: [EPBI 431](#) or consent of instructor. Offered as [EPBI 450](#) and [MPHP 450](#).

**MPHP 451. Principles of Genetic Epidemiology. 3 Units.**

A survey of the basic principles, concepts and methods of the discipline of genetic epidemiology,

which focuses on the role of genetic factors in human disease and their interaction with environmental and cultural factors. Many important human disorders appear to exhibit a genetic component; hence the integrated approaches of genetic epidemiology bring together epidemiologic and human genetic perspectives in order to answer critical questions about human disease. Methods of inference based upon data from individuals, pairs of relatives, and pedigrees will be considered. Offered as [EPBI 451](#), [GENE 451](#), and [MPHP 451](#).

**MPHP 456. Health Policy and Management Decisions. 3 Units.**

This seminar course combines broad health care policy issue analysis with study of the implications for specific management decisions in organizations. This course is intended as an applied, practical course where the policy context is made relevant to the individual manager. Offered as [HSMC 456](#) and [MPHP 456](#).

**MPHP 458. Statistical Methods for Clinical Trials. 3 Units.**

This course will focus on special statistical methods and philosophical issues in the design and analysis of clinical trials. The emphasis will be on practically important issues that are typically not covered in standard biostatistics courses. Topics will include: randomization techniques, intent-to-treat analysis, analysis of compliance data, equivalency testing, surrogate endpoints, multiple comparisons, sequential testing, and Bayesian methods. Offered as [EPBI 458](#) and [MPHP 458](#).

**MPHP 460. Introduction to Health Services Research. 3 Units.**

This survey course provides an introduction to the field of Health Services Research and an overview of key health services research concepts and methods, including conceptual frameworks and models; outcomes research; risk adjustment; disparities in health care; policy/health care systems; cost and cost-effectiveness; quality of life, process improvement; patient satisfaction; patient safety; health economics; statistical modeling techniques; and qualitative research methods. Offered as [EPBI 460](#) and [MPHP 460](#).

**MPHP 464. Obesity and Cancer: Views from Molecules to Health Policy. 3 Units.**

This course will provide an overview of the components of energy balance (diet, physical activity, resting metabolic rate, dietary induced thermogenesis) and obesity, a consequence of long term positive energy balance, and various types of cancer. Following an overview of energy balance and epidemiological evidence for the obesity epidemic, the course will proceed with an introduction to the cellular and molecular biology of energy metabolism. Then, emerging research on biologically plausible connections and epidemiological associations between obesity and various types of cancer (e.g., colon, breast) will be presented. Finally, interventions targeted at decreasing obesity and improving quality of life in cancer patients will be discussed. The course will be cooperatively-taught by a transdisciplinary team of scientists engaged in research in energy balance and/or cancer. Didactic lectures will be combined with classroom discussion of readings. The paper assignment will involve application of course principles, lectures and readings. Offered as [EPBI 464](#), [MPHP 464](#).

**MPHP 466. Promoting Health Across Boundaries. 3 Units.**

This course examines the concepts of health and boundary spanning and how the synergy of the two can produce new, effective approaches to promoting health. Students will explore and analyze examples of individuals and organizations boundary spanning for health to identify

practice features affecting health, compare and contrast practices and approaches, and evaluate features and context that promote or inhibit boundary spanning and promoting health. Offered as [MPHP 466](#), [EPBI 466](#), [SOCI 466](#), [NURS 466](#) and [BETH 466](#). Prereq: Graduate student status or instructor consent.

**MPHP 467. Comparative and Cost Effectiveness Research. 1 Unit.**

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

**MPHP 468. The Continual Improvement of Healthcare: An Interdisciplinary Course. 3 Units.**

This course prepares students to be members of interprofessional teams to engage in the continual improvement in health care. The focus is on working together for the benefit of patients and communities to enhance quality and safety. Offered as [EPBI 468](#), [MPHP 468](#), [NURS 468](#).

**MPHP 472. Leadership and Advocacy in Urban Community Health. 3 Units.**

Teams of medical and MPH students will work with the Children's Defense Fund and Cleveland neighborhood and nonprofit organizations using principles of community organization to articulate shared stories and hopes for the health and well-being of community where both the students and the organizations live and serve. While the course begins with dialogue, it will end with specific activities (performed by the students and community together) to improve community health, and a logic model for evaluating and expanding those activities. As reflection is a critical skill for leadership, the experiences in community organizing and advocacy will be counterposed with reflection on learning and will include independent reading and writing and small group discussions. Readings about leadership, advocacy and community health (particularly in cities) will include diverse perspectives and genre including work from Lao Tzu, Gandhi, Martin Luther King Jr., Shakespeare, Saul Alinsky and others. Prereq: Enrolled in MPH or JD program.

**MPHP 475. Management of Disasters Due to Nature, War, or Terror. 3 Units.**

The purpose of this course is to make participants aware of the special needs of children and families in disaster situations and understand public health approaches to address these needs. The learning objectives for this course are: 1) Identify the most important problems and priorities for children in disaster situations, 2) Identify the organizations most frequently involved in providing assistance in disaster situations and define their roles and strengths, 3) Describe the reasons why children are among the most vulnerable in disaster events, 4) Conduct emergency

nutritional assessments for children, 5) Develop health profiles on displaced children and plan interventions based on results, 6) Define common psychosocial issues of children and the means to address them, 7) List basic points of international law including the Geneva Convention that relate to all persons involved in disaster situations, 8) List important security issues, 9) Appreciate ethical issues involved in disaster situations and employ skills of cross cultural communication, 10) Recognize and respond to special issues for children involved in biological and chemical terrorist attacks.

**MPHP 478. Assessment and Application of Health Behavior Principles to Clinical Prevention. 3 Units.**

To develop an understanding of the basic principles of health behavior and related theory in an effort to better inform the assessment and delivery of clinical prevention and health promotion to both individuals and populations.

**MPHP 480. Health Systems Management in Primary Care. 1 Unit.**

Goal - To develop a deeper understanding of components of the health system that influence and provide shape to the environment in which health care is delivered and about the implementation of systems-based strategies that foster better processes and/or outcomes of health care delivery.

**MPHP 481. A Primer of Dental Public Health. 3 Units.**

This course introduces students to principles and issues in dental public health. In addition to the principles, students will learn about contemporary issues impacting dental public health, oral epidemiology , dental health care systems, and oral health promotion. To facilitate the understanding of oral health promotion, students will gain a basic understanding of the common oral diseases. Prereq: [MPHP 306](#) or [MPHP 406](#) and [MPHP 490](#) or [EPBI 490](#).

**MPHP 482. Qualitative and Mixed Methods in Public Health. 3 Units.**

The purpose of this course is three-fold - 1) to provide students with an understanding of the fundamentals of qualitative and mixed methods, including the history and philosophy of these methods, 2) to provide students with an understanding of and skill set associated with the use of qualitative and mixed methods in public health research, and 3) to provide students with an introduction to local professionals engaged in qualitative and mixed methods public health research. Prerequisites include [MPHP 405](#) and [483](#) (or equivalents) and current status as an MPH student. Prereq: [MPHP 405](#), [MPHP 483](#) and current MPHP student.

**MPHP 483. Introduction to Epidemiology for Public Health Practice. 3 Units.**

This course is designed to introduce the basic principles and methods of epidemiology. Epidemiology has been referred to as the basic science for public health. Application of epidemiologic principles is critical to disease prevention, as well as in the development and evaluation of public policy. The course will emphasize basic methods (study design, measures of disease occurrence, measures of association, and causality) necessary for epidemiologic research. It is intended for students who have a basic understanding of the principals of human disease as well as statistics. Prereq: Must be an MPHP Plan A or MPHP Plan B, or EPBI student in order to enroll in the course.

**MPHP 484. Global Health Epidemiology. 1 - 3 Unit.**

This course provides a rigorous problem-centered training in the epidemiology, prevention,

treatment, and control of infectious diseases and, more generally, global health. This is an advanced epidemiology that embraces an active learning environment. Students are expected to invest time out of the classroom reading and working with classmates. Classes will be conducted with discussions, debates, group projects, and group presentations. By taking this course, students will develop a framework for interpreting, assessing, and performing epidemiologic research on issues of global importance. The course will be divided into three modules: 1) Global Health Epidemiology 2) Helminth Epidemiology, and 3) Epidemiology of Disease Elimination. Each module is worth 1 credit hour and may be taken separately. Each module will have a separate project and/or exam. The final exam time will be used for group presentations and panel discussion. Active class participation is required through discussions, case studies, and group projects. Offered as EPBI 484, INTH 484, and MPHP 484.

**MPHP 485. Adolescent Development. 3 Units.**

Adolescent Development can be viewed as the overriding framework for approaching disease prevention and health promotion for this age group. This course will review the developmental tasks of adolescence and identify the impact of adolescent development on youth risk behaviors. It will build a conceptual and theoretical framework through which to address and change adolescent behavior to promote health.

**MPHP 490. Epidemiology: Introduction to Theory and Methods. 3 Units.**

This course provides an introduction to the principles of epidemiology covering the basic methods necessary for population and clinic-based research. Students will be introduced to epidemiologic study designs, measures of disease occurrence, measures of risk estimation, and causal inference (bias, confounding, and interaction) with application of these principles to specific fields of epidemiology. Classes will be a combination of lectures, discussion, and in-class exercises. It is intended for students who have a basic understanding of the principals of human disease and statistics. Offered as [EPBI 490](#) and [MPHP 490](#). Prereq or Coreq: [EPBI 431](#) or requisites not met permission.

**MPHP 491. Epidemiology: Case-Control Study Design and Analysis. 3 Units.**

This course builds upon [EPBI 490](#) with a comprehensive study of the concepts, principles, and methods of epidemiologic research. The course content specifically focuses on the case-control study design and provides a framework for the design, analysis, and interpretation of case-control studies. Rigorous problem-centered training includes exposure measurement, subject selection, validity, reliability, sample size and power, effect modification, confounding, bias, risk assessment, matching, and logistic regression. Individual and group data projects will be analyzed using SAS statistical software. Offered as [EPBI 491](#) and [MPHP 491](#). Prereq: [EPBI/MPHP 490](#).

**MPHP 492. Epidemiology: Cohort Study Design and Analysis. 3 Units.**

This course provides a comprehensive introduction to the cohort study. Particular emphasis is placed on cohort study design and cohort data analysis. The course will cover the conceptual framework underlying cohort studies, planning and conducting a cohort study, basic concepts of time, exposure and outcome, and methods in the analysis of longitudinally collected data. Analytic methods covered in the class include, but are not limited to: analysis of age, period, and cohort effects, analysis of incidence rates, analysis of repeated measures, and analysis of time-to-event data. Students will have the opportunity to conduct analysis of data obtained from an actual cohort

study using a statistical package of their choice. Offered as [EPBI 492](#) and [MPHP 492](#). Prereq: [EPBI 431](#) and [EPBI 490](#) or equivalent.

**MPHP 494. Infectious Disease Epidemiology. 3 Units.**

This course focuses on tuberculosis (TB) and HIV epidemiology, including perspectives on these diseases in the US and globally. It is a follow-up to [EPBI/MPHP 484: Global Health Epidemiology](#), but these courses do not necessarily need to be taken in sequence. This is an advanced course, focusing on methods and approaches in epidemiology and public health. Offered as [EPBI 494](#), [INTH 494](#) and [MPHP 494](#). Prereq: [EPBI 490](#).

**MPHP 497. Cancer Epidemiology. 1 - 3 Unit.**

This is a 1-3 credit modular course in cancer epidemiology and is intended for graduate students in epidemiology and biostatistics, environment health, MPH students and MD or MD/PhD students. The course will consist of 3 five-week modules: 1) introduction to cancer epidemiology (study design, etiology and causal inference, cancer statistics and cancer biology); 2) site-specific discussions of various cancers involving natural history of disease and risk factors and etiology and 3) cancer prevention and screening and cancer survivorship. Each of the modules is worth 1 credit hour for a total of 3 credit hours. Offered as: [EPBI 497](#) and [MPHP 497](#).

**MPHP 499. Independent Study. 1 - 3 Units.**

**MPHP 508. Ethics, Law, and Epidemiology. 3 Units.**

This course is designed to provide epidemiology students with basic knowledge about the ethical and legal principles underlying epidemiological research. This is not a public health law class. Issue papers are assigned on a weekly basis. Each issue paper requires that the student analyze the situation depicted and apply the principles learned. Some issue papers may require that the student draft a proposed rule, a portion of legislation, or a document such as an informed consent form. Other exercises may require that students critique an existing agency rule or legislation. Offered as [EPBI 508](#) and [MPHP 508](#). Prereq: [EPBI 490](#) and [EPBI 491](#) or equivalent.

**MPHP 510. Health Disparities. 3 Units.**

This course aims to provide theoretical and application tools for students from many disciplinary backgrounds to conduct research and develop interventions to reduce health disparities. The course will be situated contextually within the historical record of the United States, reviewing social, political, economic, cultural, legal, and ethical theories related to disparities in general, with a central focus on health disparities. Several frameworks regarding health disparities will be used for investigating and discussing the empirical evidence on disparities among other subgroups (e.g., the poor, women, uninsured, disabled, and non-English speaking populations) will also be included and discussed. Students will be expected to develop a research proposal (observational, clinical, and/or intervention) rooted in their disciplinary background that will incorporate materials from the various perspectives presented throughout the course, with the objective of developing and reinforcing a more comprehensive approach to current practices within their fields. Offered as [CRSP 510](#), [EPBI 510](#), [MPHP 510](#), [NURS 510](#), and [SASS 510](#).

**MPHP 532. Health Care Information Systems. 3 Units.**

This course covers concepts, techniques and technologies for providing information systems to

enhance the effectiveness and efficiency of health care organizations. Offered as [HSMC 432](#), [MIDS 432](#), [MPHP 532](#) and [NUNI 432](#).

**MPHP 650. Public Health Practicum. 3 Units.**

The Public Health Practicum is an integral component of the MPH curriculum, allowing students to apply, develop, and refine their conceptual knowledge and skills as part of a planned, supervised, and evaluated community-based experience. The Practicum is designed to move students beyond the walls of academia, to understand the political, economic, social, and organizational contexts within which public health activities are conducted. To complete the Practicum, students must complete three credits of [MPHP 650](#), dedicating at least 120 hours to a substantial public health experience, and attend Community Health Research and Practice (CHRP) group meetings. Prereq: Complete at least 9 credit hours in the MPH program and be in good academic standing.

**MPHP 652. Public Health Capstone Experience. 6 Units.**

Public health field practicum, involving a placement at a community-based field site, and a Master's essay. The field placement will provide students with the opportunity to apply the knowledge and skills acquired through their Master of Public Health academic program to a problem involving the health of the community. Students will learn to communicate with target groups in an effective manner; to identify ethical, social, and cultural issues relating to public health policies, research, and interventions; to identify the process by which decisions are made within the agency or organization; and to identify and coordinate use of resources at the placement site. The Master's essay represents the culminating experience required for the degree program and may take the form of a research thesis, an evaluation study, or an intervention study. Each student is required to formally present the experience and research findings. In any semester in which a student is registered for [MPHP 652](#) credit, it is required that the student attend the Community Health Research and Practice (CHRP) group at a minimum of two sessions per 3 credits. CHRP is held once a week for approximately an hour and a half for the duration of fall, spring, and summer semesters. [MPHP 652](#) credit is available only to Master of Public Health students.

Memorandum

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

From: Mark Aulisio, PhD  
Chair, Faculty Council

Re: Bylaws Amendment

Date: March 18, 2015

At its February 16, 2015, meeting, the Faculty Council voted to recommend approval of a Master of Public Health/Master of Science in Nutrition Dual Degree Proposal (Plan B, non-thesis requiring). The program is offered by the Department of Epidemiology and Biostatistics and the Department of Nutrition and includes courses from nutrition, biochemistry, and public health.

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 Martin Snider and met with Hope Barkoukis, Interim Chair, Nutrition Department, Scott Frank, Director, Master of Public Health Programs, and Mendel Singer, MPH Director. The ad hoc committee reviewed the document, discussed the proposal, and engaged with the program presenters. After the meeting was concluded a summary of changes was created. These changes were adopted and the revised proposal was circulated to the ad hoc committee for a vote. The ad hoc committee approved the reviewed proposal and it was sent to the Faculty Council for a vote.

After your review, I hope you will join me in recommending approval of the Master of Public Health/Master of Science in Nutrition Dual Degree Program by the Faculty Senate, as required by the Faculty Handbook.

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

Thank you for your consideration.

Sincerely,



Mark Aulisio, PhD  
Chair, Faculty Council

cc: Nicole Deming

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Dean, School of Medicine  
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Sincerely,



Mark Aulisio, PhD  
Chair, Faculty Council

cc: Nicole Deming



**Department of Nutrition**  
**School of Medicine – Room WG 48**  
2109 Adelbert Road  
Cleveland, Ohio 44106-4054  
216.368.2440

December 15, 2014

Dr. Elizabeth Tracey  
Graduate Studies – Faculty Senate Committee

Dear Dr. Tracey,

According to the most recent statistics from the Center for Disease Control, (CDC), currently half of adults in the US, nearly 117 million, have at least one chronic disease. This disease burden and the associated health care costs influence quality of life, productivity and ultimately the future well-being of the United States. Poor nutrition is identified as one of the top four health behaviors that can be changed to significantly impact chronic disease and disease prevention.

Given this health status reality, I am very excited to be writing a letter of support for the creation of a joint graduate degree between the Department of Nutrition and our CWRU Master in Public Health, (MPH), Program. This joint degree offers students an unparalleled opportunity to gain the core competencies in the important domains of evidence based science, nutrition and public health. All aspects of public health activity including program implementation, development and evaluation, policy and advocacy at the local, state or national level, and even direct health education will be strengthened when students are equally competent in public health and understanding human nutrition and the basic biochemistry/metabolism behind those nutrition recommendations. Conversely, nutrition students will also gain a broader depth of understanding as they are exposed to the variety of public health courses available to them via this joint degree. The dual exposure to the competencies in each of these respective programs means that CWRU will lead the way in developing practitioners who have skill sets far superior to what can be achieved by either program independently.

Accordingly, this joint degree has the strong support of the Department of Nutrition. I will look forward to finalization of this degree to begin welcoming students to an exciting chapter of opportunity for their professional development.

Sincerely,

Hope Barkoukis, PhD, RD, LD  
Interim Chair  
Department of Nutrition

## Policy Recommendation on Periodic Review and Evaluation of Doctoral Student Progress

In order to achieve excellence in student mentoring in doctoral programs within the School of Graduate Studies at Case Western Reserve University, an annual review of student progress toward the degree is required for every doctoral student. This review has two purposes: i) to support mentoring of students by providing regular and timely feedback that will enhance their success at CWRU and their career goals and professional development, and ii) to evaluate progress toward completion of the degree. To achieve these goals, the review should evaluate the previous year's progress, detail the student's strengths and areas that need improvement, and make recommendations for future action to complete the degree.

Each doctoral program shall develop its own annual review format and timing within these minimal guidelines:

***(1) Every doctoral student will submit an annual progress report to their program, department, or school. The report should describe progress toward the degree in the past year, future plans for completing the degree, career goals and progress toward professional development.***

***(2) Faculty of the program, department, or school will review the student reports to evaluate student progress in the program. The review process shall include at least two faculty members, such as the faculty advisor, dissertation or thesis chair or committee, graduate student director, or other subset of faculty designated by the department. Additional faculty members may be asked to provide input to help the review process.***

***(3) The findings of the evaluation shall be communicated to the student in a written report and, whenever possible, discussed in person, that details the student's current status in the program, progress towards completion, career goals and professional development, and makes concrete suggestions for future actions.***

***(4) Master's level students may be evaluated in a similar fashion at the discretion of the program, department, or school.***

If a doctoral program already has an annual review policy in place, the program shall inform the School of Graduate Studies of what form that review takes. For programs that do not have an annual review policy, the School of Graduate Studies requests that they create an annual review policy within a year from the approval of the policy. This policy does not mandate the use of one student review format. Examples of existing formats for review of student progress will be posted on the Graduate Studies website.

For some programs, the annual report can be coordinated with other reporting needs (e.g. NIH grants) so as to eliminate redundancy in reporting for the student.

Compliance with this policy will be monitored by SGS. Programs shall provide an annual list of names of students who have been reviewed by June 30<sup>th</sup>. A template of the department review form shall be provided to SGS. Copies of an individual student's annual reviews will be made available to SGS upon request.

The School of Graduate Studies shall conduct a process evaluation two years after implementation of this policy.



## General Assembly Resolution R. 24-02

**Authors:** Vice President Li, Member-at-Large Shah

**Committee:** Academic Affairs

**Presented:** February 3, 2015

### *Advising Feedback System*

**Whereas**, academic advising is an important component of the educational program at Case Western Reserve University;

**Whereas**, an effective undergraduate advising system ensures curricular success, leading to increased retention and enhanced post-graduation opportunities;

**Whereas**, only 61% of graduating seniors reported satisfaction with CWRU academic advising according to the CWRU Senior Survey in 2012 and has been lower than the Association of American Universities' average for five of the past six available surveys;

**Whereas**, a formalized feedback system for undergraduate advising has not been previously established;

**Whereas**, students' advising feedback would provide faculty advisors insight into their personal advising strengths and weaknesses;

**Whereas**, an anonymous feedback system would allow a student to honestly detail their positive and negative advising experiences;

### **Be it resolved by the Undergraduate Student Government, acting in full session:**

- I. That Case Western Reserve University creates an anonymous advising feedback system;
- II. That the University makes any pertinent anonymous feedback collected by the system accessible to appropriate faculty members and undergraduate students;
- III. That the University integrates undergraduate student input to continually define and develop specific strategic goals for the undergraduate advising system;
- IV. That this resolution in its entirety be sent to the following people:
  - a. John Ruhl, Chair of Faculty Senate Committee on Undergraduate Education
  - b. Robert Savinell, Chair of Faculty Senate
  - c. Jeffrey Wolcowitz, Dean of Undergraduate Studies
  - d. Donald Feke, Vice Provost for Undergraduate Education
  - e. Lou Stark, Vice President of Student Affairs

## University Standards for Human Research Protection

### Purpose

The promotion of scholarship and the discovery of new knowledge through research are among the major functions of Case Western Reserve University (CWRU) as an institution of higher learning. If this research is to be meaningful and beneficial to humanity, involvement of human subjects as study participants is necessary. It is imperative that investigators in all disciplines protect the rights and welfare of human subjects.

University policy and federal regulations mandate compliance with all applicable requirements. Moreover, faculty investigators also have a moral obligation to humankind. The interests of society and the rights of individual subjects must be protected as investigators carry out the mandate to advance knowledge. Research may entail risks to human subjects. Therefore, investigators are obligated to weigh those risks in light of potential benefits to the subject and/or to society.

### Mission

The mission of CWRU's Human Research Protection Program (HRPP) is to protect the rights and welfare of human research subjects by ensuring that the oversight of human research is appropriate and in accordance with institutional, federal, state and local requirements, as well as the ethical principles promulgated by The Belmont Report.<sup>1</sup>

### Scope

The CWRU HRPP covers all human research conducted by any student, employee, trainee, or faculty member (whether paid or unpaid) of CWRU ("CWRU investigator"). It includes any human research conducted at cooperating institutions pursuant to a grant, contract, cooperative agreement, or other award to CWRU. Cooperating institutions include: University Hospitals of Cleveland (UHC), the MetroHealth System (MHS), the Louis Stokes Cleveland Department of Veterans Affairs Medical Center (LSCDVAMC) and the Cleveland Clinic Foundation (CCF). Reliance agreements in place allow CWRU to defer to the IRBs at these institutions for local protocol review. Hereafter, these institutions shall be referred to as "member institutions" under the CWRU HRPP.

### Definitions

**Research** is defined in 45 CFR 46 as "a systematic investigation designed to develop or contribute to generalizable knowledge." Therefore, any systematic investigation designed to generate results for the purpose of publication (e.g., dissertation, thesis, journal, book, or technical report) or public presentation (e.g. speech, poster, panel, symposium) is considered to be research.

**Human subject** is defined in 45 CFR 46 as "a living individual about whom an investigator (whether professional or student) conducting research obtains:

- (1) Data through intervention or interaction with the individual, or

<sup>1</sup> Belmont Report (1979). *The Belmont Report: Ethical principles and guidelines for the protection of human subjects of research*. Retrieved February 24, 2015, from [hhs.gov/ohrp/humansubjects/guidance/belmont.html](http://hhs.gov/ohrp/humansubjects/guidance/belmont.html)

(2) Identifiable private information.”

- **Intervention** includes both physical procedures by which data are gathered (for example, venipuncture) and manipulations of the subject or the subject’s environment that are performed for research purposes.
- **Interaction** means communication or interpersonal contact between investigator and subject.
- **Private Information** means information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information an individual can reasonably expect will not be made public (for example, a medical record).
- **Identifiable Information** means information that is individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information).

**Minimal Risk** is defined in 45 CFR 46.102(f) as “the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.”

**Responsible or Principal Investigator** is the person responsible for the conduct of a human research study at one or more sites, whether on- or off-campus. If the human research study is conducted by a team of individuals, the responsible/principal investigator is the responsible leader of the team. The responsible/principal investigator is held accountable for ensuring that the team complies with all rules and regulations and engages with human subjects properly and ethically.

**IRB Definition?** An Institutional Review Board (IRB) is a specially constituted review body established or designated by an entity to protect the welfare of human subjects recruited to participate in biomedical or behavioral research [Federal Policy §§ .102(g), .108, .109].

**Commented [I1]:** There are a number of references to “the IRB” in this document. But there are a number of IRBs at different institutions which might approve a particular research project.

Can or should we define “IRB” to clarify which IRB is applicable?

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## Conditions under Which Investigations Involving Human Subjects May Be Pursued under the CWRU HRPP

### 1. **Ethical Principles and Regulatory Mandates**

Human research conducted under the auspices of the CWRU HRPP must be carried out in an ethical manner and in accordance with the principles promulgated by The Belmont Report: respect for persons, beneficence, and justice. In addition, investigators must comply with all applicable federal, state and local requirements related to the protection of human subjects, including Department of Health and Human Services (DHHS) regulations (i.e., 45 CFR 46) and all relevant requirements of other regulatory and funding agencies. CWRU maintains a Federalwide Assurance (FWA) with DHHS. Research must not begin until investigators have received review and approval or verification of exemption by one of the Institutional Review Boards (IRBs) listed on the CWRU FWA.

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CWRU applies its ethical standards to all human research regardless of funding. All human research must undergo review by the appropriate designated IRB(s). Activities that do not meet the definition of human research (e.g., most classroom activities, quality improvement activities, non-scholarly program evaluation, and certain health surveillance activities) do not require review and approval by one of the IRBs within the CWRU HRPP. When CWRU is engaged in human research that is conducted, funded, or otherwise subject to regulations by a federal department or agency, it will apply the regulations of that agency relevant to the protection of human subjects.

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**Commented [I2]:** The bylaws committee is concerned that this carve out might be too broad.

Several "introduction to research" type classes (esp. in the SMDEP program) may generate personally identifiable information about class members which could be published to the class in a powerpoint presentation or research presentation.

Should such research projects developed in these classes be required to undergo IRB review?

(contact Maureen McEnery for more information)

**Commented [SR3]:** Presented to the class is not the same as published. We want this carve out to be broad so as not to over interpret those activities subject to IRB oversight.

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## 2. **Informed Consent**

An investigator may involve a human subject in research only if the investigator has obtained the informed consent of the subject or the subject's legally authorized representative, unless consent is waived by an IRB per the regulatory provisions. An investigator shall seek such consent only under circumstances that provide the prospective subject or representative sufficient opportunity to consider whether or not to participate and that minimize the possibility of undue influence. Unless written documentation is waived by an IRB, the investigator must provide the participant with an informed consent document written in language that is understandable to the subject or his/her representative. The investigator cannot include in the consent process, either orally or in writing, any language through which the subject or his/her representative is made to waive or appear to waive any of the subject's legal rights, or which releases the investigator, the sponsor, the institution, or its agents from liability for negligence.

The basic elements of informed consent, as described in 45 CFR 46, are as follows:

- 1) statement that study involves research, explanation of purposes of research and expected duration of subject's participation, description of procedures to be followed, and identification of any procedures which are experimental;
- 2) description of risks or discomfort to subject;
- 3) description of benefits to subject or to others;
- 4) disclosure of alternative procedures, if appropriate;
- 5) description of the extent to which confidentiality will be maintained;
- 6) for research involving more than minimal risk, explanation as to whether compensation and medical treatments are available if injury occurs;
- 7) explanation of whom to contact if questions arise about the research, the subject's rights or whom to contact if research related injury occurs; and

8) statement that participation is voluntary, that refusal to participate involves no penalty or loss of benefits, and that subject may discontinue at any time.

DRAFT

Revised November 2014

3. **Confidentiality of Data**

Investigators are responsible for protecting the rights of research subjects by safeguarding the confidentiality of all individual data and all data that could be used to identify subjects. Should any investigator be called upon to reveal research data which would in any way endanger confidentiality, it is his or her obligation to refuse to divulge such information as privileged communication between researcher and subject, unless compelled by law. The investigator should consult with the Office of Research Administration prior to releasing any such information.

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The University, funding agencies, and regulatory bodies have the right to audit study data in order to ensure that human subjects are being protected adequately, and that the University is in compliance with approved protocols and its FWA. Those individuals who perform audits are bound by the same rules of confidentiality as the investigator.

4. **Investigator Non-compliance**

All CWRU investigators working with human subjects have a responsibility to comply with federal regulations and university policy. Human research non-compliance is defined as conducting research involving human subjects in a manner that disregards or violates federal, state or local requirements, or policies established by the applicable IRB. This can include, but is not limited to, failure to obtain IRB approval for research involving human subjects; inadequate or non-existent procedures for informed consent; failure to follow the approved version of the protocol; failure to follow recommendations made by the IRB to safeguard the rights and welfare of subjects; failure to report adverse events or request permission for proposed protocol changes to the IRB; and failure to provide required ongoing progress reports.

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Per the applicable regulations, IRBs have the authority to review allegations of human research non-compliance for studies they oversee. An IRB may receive allegations in several different ways, including, quality assurance auditing reports, subject complaints, internal allegations, or investigator self-reporting.

The CWRU IRB is required to report serious or continuing non-compliance to federal regulatory entities and to funding agencies or other sponsors. Additionally, CWRU is required to report serious or continuing non-compliance to federal regulatory entities when the research is federally funded and when one of CWRU's affiliated hospital IRBs is the IRB of record.

5. **Faculty Advisor Responsibility for Student Research**

A faculty member advising student research projects\* involving human subjects is responsible for assuring that the rights and welfare of the subjects of student research are adequately protected. CWRU expects that advisors will take an active part in preparing students for the role of researcher, instructing them in the ethical conduct of research and assisting in the preparation of IRB applications. After protocol approval, the advisor should meet regularly with his/her students in order to review their work and progress. While a student serves as the primary researcher for the protocol, the faculty advisor is ultimately responsible for the protection of the student's human subjects. A

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faculty member's electronic "signature" on the application indicates his/her acceptance of responsibility to comply with all administrative and federal regulations.

\* Simulated research activities in a classroom setting for purposes of teaching research techniques typically is not designed to develop or contribute to generalizable knowledge and therefore is not regulated as research.

**Commented [I4]:** See previous comment re identifiable information created in classroom "simulations."

## **CWRU IRB Review**

All protocols, correspondence, notifications, outcomes, and stipulations pertaining to a social/behavioral/educational research study must be submitted and received via the CWRU IRB electronic system.

**Exempt Determination.** All research involving human subjects, even if exempt from federal regulation, must be submitted to the appropriate IRB. Research may be exempt from IRB review if it meets the criteria described in 45 CFR 46. Determination of exemption must be made in accordance with the policy of the applicable IRB. If a determination of exemption is made, investigators are still responsible for ethical conduct of human research in accordance with The Belmont Report.

**Expedited Review.** Expedited review is a procedure through which human research posing no more than minimal risk may be reviewed and approved without convening a meeting of the full IRB. DHHS regulations<sup>2</sup> specifically define when minimal-risk research can receive expedited review by an IRB.

**Full Review.** All research that has not received an exemption determination or an expedited review must be reviewed at a convened meeting of the IRB where a quorum of voting members is present.

**Amendments.** Changes to a study, including, but not limited to, the enrollment criteria or sample size, recruitment methods, consent form language, procedures for data collection, or study interventions require prior approval by the IRB\*. Investigators wanting to change a procedure in a study that has already been approved by an IRB must prepare a written description of the proposed change and the reason for the change. Upon review of the proposed amendment, the IRB will then reassess the balance of risks to benefits.

\*In the unusual situation where a protocol change is required to avoid an immediate apparent hazard to a subject, the investigator may make the change prior to obtaining IRB approval but must immediately inform the IRB of the occurrence.

**Adverse Events.** An adverse event is defined as any undesirable and unintended (although not necessarily unexpected) impact on the subject, as a result of a study intervention.<sup>3</sup>

<sup>2</sup> (45§46.110) Which ones? This should include a cite for the benefit of researchers.

<sup>3</sup> <http://www.hhs.gov/ohrp/policy/advevntguid.html> Is this a definition from some other source such as CFR?

Investigators must report in writing to the IRB all adverse events in accordance with the IRB's policies and procedures for reporting such events.

## Conduct of Biomedical Human Research

The CWRU IRB reviews only social/behavioral/educational and other non-biomedical human research.

When CWRU investigators wish to engage in biomedical human research, including all human research subject to FDA regulations (tests of drugs, devices, and biologics, and other biomedical interventions), they must seek review and approval from the IRB at the affiliated clinical site where the study will take place. The CWRU-affiliated hospital IRBs that have agreements with CWRU to review biomedical research are:

- University Hospitals of Cleveland
- MetroHealth Hospital
- The Cleveland Clinic Foundation
- \*The Louis Stokes Cleveland Veterans Affairs Medical Center ([LSCVAMC](#))

Any questions about whether a research activity is considered biomedical or otherwise subject to FDA regulations should be referred to a representative from the CWRU IRB who will provide assistance.

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\*Per Central VA policy, the Louis Stokes Cleveland Veterans Affairs Medical Center IRB cannot be the IRB of record for CWRU research. Therefore, unless the CWRU PI has a VA appointment, another CWRU hospital IRB will need to be the IRB of record for CWRU for biomedical research conducted at the LSCVAMC. The CWRU Research Compliance Officer facilitates this process.

## International Research

All human research, regardless of funding, performed outside the United States must obtain appropriate institutional IRB approval according to federal regulations and the FWA. Typically, this means IRB approval from CWRU or one of its affiliate IRBs plus local approval at the study site. The university recognizes that the procedures normally followed in the foreign countries may differ from those set forth in U.S. federal regulation.

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All applicable ethical standards and regulations are applied consistently to all human research, regardless of whether it is conducted domestically or in another country, including:

- Confirming the qualifications of investigators for conducting the research
- Conducting initial review, continuing review, and review of modifications to previously approved research
- Post-approval monitoring; quality assurance
- Handling of complaints, non-compliance, and unanticipated problems involving risks to subjects or others
- Consent process (when applicable)
- Ensuring all necessary approvals are met
- Coordination and communication with local IRBs

## CWRU HRPP Components

### Institutional Official

CWRU's Vice President for Research is designated as the Institutional Official (IO) for the CWRU HRPP. In addition to oversight of the HRPP, the Institutional Official ensures that CWRU evaluates Conflicts of Interests in research and that education on the responsible conduct of research is conducted.

The Institutional Official has the authority to take the following actions or delegate these authorities to a designee:

- Allocate resources within the HRPP budget.
- Appoint and remove CWRU IRB members and IRB chairs.
- Approve and rescind authorization agreements for CWRU IRBs.
- Suspend or terminate research approved by the CWRU IRB.
- Disapprove research approved by the CWRU IRB.

### Organizational Official

The Associate Vice President for Research is designated as the Organizational Official. The Organizational Official is responsible for oversight of, among other things, policies, procedures, and business decisions related to how research and sponsored project administration are overseen and monitored.

The Organizational Official has the authority to take the following actions or delegate these authorities to a designee:

- Create the HRPP budget.
- Make personnel decisions.
- Determine upon which IRBs the university will rely<sup>4</sup>.
- Place limitations or conditions on an investigator's or research staff's privileges to conduct human research.
- Develop policies and procedures related to the HRPP that are binding on the university.

The Organizational Official has the responsibility to:

- Oversee the review and conduct of human research under the jurisdiction of the HRPP
- Periodically review this plan to assess whether it is providing the desired results and recommend amendments as needed.

<sup>4</sup> [What does this mean? – Are there opportunities to “shop” research to different IRBs? Is this provision intended to implement the research consortium?The organizational official can make a determination about whether CWRU will enter into an inter-institutional agreement to relay on another IRB for review and approval of research.](#)

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- Establish policies and procedures designed to increase the likelihood that human research will be conducted in accordance with all applicable ethical and legal requirements.
- Institute regular, effective, educational and training programs for all individuals involved with the HRPP.
- Ensure that the research review process is independent and free of undue influence, and ensure that officials of the organization cannot approve research that has not been approved by one of the IRBs designated by the organization.
- Implement a process to receive and act on complaints and allegations regarding the HRPP.
- Implement an auditing program to monitor compliance and improve compliance in identified problem areas.
- Investigate and remediate identified systemic problem areas and, where necessary, ~~removal-remove~~ of individuals from involvement in the HRPP.
- Ensure that the HRPP has sufficient resources, including IRBs appropriate for the volume and types of human research to be reviewed, so that reviews are accomplished in a thorough and timely manner.
- Fulfill federally-mandated educational requirements.

### **CWRU Investigators and Study Staff**

Investigators and research staff have the responsibility to:

- Understand the definition of Human Research.
- Consult the ~~relevant~~<sup>2</sup> IRB<sup>5</sup> when there is uncertainty about whether an activity is human research.
- Not conduct human research or allow human research to be conducted without review and approval by an IRB designated in the CWRU FWA.
- Comply with institutional, federal, state and local requirements, as well as the ethical principles promulgated by ~~the~~ The Belmont Report.
- Follow HRPP requirements.
- Follow IRB policies and procedures.
- Comply with all determinations and additional requirements of the IRB, the IRB chair, and the Organizational Official.
- Report allegations of undue influence regarding the oversight of the HRPP or concerns about the HRPP to the Organizational Official.
- Report allegations or findings of non-compliance with the requirements of the HRPP to the IRB.

### **Institutional Review Boards (IRB)**

The IRBs relied upon by CWRU are listed in CWRU's FWA and on the CWRU IRB website (<https://research.case.edu/Compliance/>).

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<sup>5</sup> This assumes there is only one IRB. OK to add "the relevant"

Reliance on an IRB not listed in CWRU's FWA requires an Institutional Authorization Agreement for IRB review (IAA) executed by the Institutional or Organizational Official.

The CWRU IRB, as well as any IRBs relied upon by CWRU, has the authority to, for the studies they are monitoring:

- Approve, require modifications to secure approval, and disapprove human research.
- Suspend or terminate approval of human research not being conducted in accordance with an IRB's requirements or that has been associated with unexpected serious harm to subjects.
- Observe, or have a third party observe, the consent process.
- Determine whether an activity is human research.
- Determine whether additional protections are warranted for studies involving vulnerable subject populations.
- Evaluate financial interests of investigators and research staff and have the final authority to decide whether the financial interest and management plan, if any, allow the human research to be approved.  
([http://www.case.edu/president/facsen/frames/handbook/conflicts\\_of\\_interest.htm](http://www.case.edu/president/facsen/frames/handbook/conflicts_of_interest.htm))

IRB members and IRB staff have the responsibility to follow HRPP policies and procedures, including disclosure of outside financial interests and recusal from review of protocols with which the member or staff may have a conflict.

### **Legal Counsel**

Legal Counsel has the responsibility to:

- Provide legal advice upon request to the Institutional Official, Organizational Official, IRB, and other individuals involved with the HRPP.
- Help resolve conflicts among applicable laws.

### **Deans/Department Chairs**

Deans and Department Chairs have the responsibility to:

- Assure scientific review and oversee the conduct of human research in their department or school.
- Forward complaints and allegations regarding the HRPP to the Organizational Official.
- Ensure that each human research study conducted in their department or school has adequate resources<sup>6</sup>.

### **Office of Research Administration**

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<sup>6</sup> [Is this language creating potential grievances for unfunded or under-funded research? Is it needed? It seems to require a blank check. This does not require a blank check-- it requires the Chair to sign off on all protocols before they come to the IRB, certifying that the study as planned can be done responsibly by the study team. If a researcher proposes using a facility, or piece of equipment, or person with expertise that CWRU does not have, the Chair should raise questions before the study is submitted to IRB.](#)

The Office of Research Administration (and similar offices with delegated authority, such as the School of Medicine Office of Grants and Contracts) has the responsibility to review contracts and funding agreements for compliance with HRPP policies and procedures.

## Education and Training

IRB members, IRB staff, and others involved in the review of human research must complete initial and continuing training on the protection of human subjects.

Investigators and research staff must complete the initial and continuing training on the protection of human subjects.

## Reporting and Management of Concerns

Questions, concerns, complaints, allegations of undue influence, allegations or findings of non-compliance, or input regarding the HRPP may be reported orally or in writing. Employees are permitted to report concerns on an anonymous basis. Concerns may be reported to the IRB Office, the IRB Chair, the Organizational Official, Office of General Counsel, Integrity Hotline, Internal Audit Department, Deans, or Department Chairs.

The IRB<sup>7</sup> has the responsibility to investigate allegations and findings of non-compliance related to conduct of research for studies under its jurisdiction and take corrective actions as needed. The Organizational Official has the responsibility to investigate all other reports and take corrective actions as needed. In some instances, the IRB and the Organizational Official may, for different purposes, both be required to investigate the same matter, or may collaborate or share resources as necessary.

Employees who report in good faith possible compliance issues shall not be subjected to retaliation or harassment as a result of the reporting. Concerns about possible retaliation should be immediately reported to the Organizational Official or designee.

To make such reports, contact:

The Office of the Associate Vice President of Research  
Sears Library Building, 6<sup>th</sup> Floor.  
2083 Martin Luther King, Jr. Drive  
Cleveland, Ohio 44106-7230  
216-368-0143

## Monitoring and Auditing

In order to monitor and assure compliance, auditors who have expertise in federal and state statutes, regulations and organizational requirements will conduct periodic not-for-cause audits.

## Disciplinary Actions

<sup>7</sup> Again, this assumes only one IRB exists. Can this be clarified?

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Commented [SR5]: The IRB<sup>1</sup> has the responsibility to investigate allegations and findings of non-compliance related to conduct of research for studies under its jurisdiction and take corrective actions as needed.

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| The IRB and the Institutional Official may terminate or suspend IRB approval. In addition, the IRB and/or the Institutional Official and/or Organizational Official may place limitations or conditions on an investigator's or research staff's privilege to conduct human research whenever, in the opinion of the IRB and/or the Institutional Official and/or Organizational Official, such actions are required to maintain the integrity of the HRPP.

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DRAFT

David and Rebecca:

With regard to item 1, there are a multitude of obligations we are trying to cover in the Chair's attestation (the box a Chair checks before a protocols can be submitted officially to the IRB's in-box).

That attestation is trying to make someone at the Department level responsible for assuring:

Federal Regs: 46.107 - In addition to possessing the professional competence necessary to review specific research activities, the IRB shall be able to ascertain the acceptability of proposed research in terms of institutional commitments and regulations, applicable law, and standards of professional conduct and practice.

AAHRPP Element I.1.F: The Organization has and follows written policies and procedures for reviewing the scientific or scholarly validity of a proposed research study.

AAHRPP Element III.1.C: Researchers employ sound study design in accordance with the standards of the discipline. Researchers design studies in a manner that minimizes risks to participants.

AAHRPP Element III.1.D: Researchers determine that the resources necessary to protect participants are present before conducting each research study.

The critical point is that we are not trying to imply the Chair takes on financial responsibility for a study just because they sign off on an IRB application. But, rather, that they don't forward a protocol to the IRB that clearly cannot be done responsibly due to a poor design, or a lack of adequate resources, facilities, equipment or expertise.

If you can help us think of a better way to get the Chairs to affirm this, I'm all ears.

Sue

## Chapter 3: Part II

### ARTICLE VII. Endowed Professorships ~~and other Chairs~~\*

A senior, endowed ~~chair professorship~~ for a ~~tenured~~ full professor is designed to recognize eminence in a given field, primarily through demonstrated scholarship and excellence in teaching. When the Board of Trustees is advised to bestow an ~~endowed professorship chair~~, it is on the premise that the individual has earned a national reputation for scholarly distinction in his or her field and shares that expertise in his or her teaching. Such a professorship signifies to the external as well as internal academic community the highest standards for scholarship and teaching the school has to offer.

There are occasions when appointments to ~~senior endowed professional chairs professorships~~ are coterminous with administrative appointments. The criterion of scholarship continues to hold in such cases but may be interpreted more flexibly. ~~Appointments to endowed chairs at assistant professor and associate professor levels are of a specified duration. Endowed chairs at the full professor level may be of a specified duration. These Junior endowed professorship~~ appointments are intended to recognize exceptional faculty potential and merit and to add special strength to particular areas of teaching and research.

Appointments to endowed professorships are of a specified duration, unless the terms of the endowment state otherwise.

Appointments to visiting ~~chairs professorships~~ may be at any faculty rank and do not lead to tenure consideration.

*\*Office of the President 11/7/86; amended 2/18/87; approved by the Faculty Senate 3/25/09.*

## Proposed Revisions to Faculty Senate By-Laws

### Faculty Senate By-Law VI. Procedure for Election of the Chair-Elect

1) Each year the Nominating Committee shall nominate two candidates for Chair-elect for the coming year and shall report these nominations to the Secretary not later than March 1. The Secretary shall thereupon notify all members of the Faculty Senate of these nominations by mail.

Within three weeks thereafter, an additional nominee, or nominees, for the office may be entered in candidacy by written petition signed by not less than ten percent of the members of the Faculty Senate with respect to each such nominee, and submitted to the Secretary, providing, however, that each such nominee by petition shall have stated in writing to the Secretary acceptance of the nomination.

2) Following the close of the period for nominations by petition, the Secretary shall submit by mail, to each voting member of the Faculty Senate, a ballot listing the names of the nominees, to be marked and returned within two weeks.

The nominee receiving the majority of votes cast shall be declared elected. In the event no one nominee receives a majority of the votes cast, a second ballot bearing the names of the two nominees who have received the largest numbers of votes shall be distributed for run-off election. In the event of a tie vote of such character as to foreclose the second ballot procedure or of a tie vote on the second ballot, such tie shall be resolved by the Executive Committee.

3) The Chair-Elect shall begin his/her term on the day following Commencement day each year.

### Faculty Senate By-Law VII. Committees

#### Item b. Executive Committee

##### *Item b. Executive Committee.*

The membership and functions of the Executive Committee shall be as provided in the Constitution, Article VI, Section A, excepting that, in addition to the functions therein specified, the Executive Committee shall also assume the following responsibilities:

1) Each year the Executive Committee, in consultation with the Secretary, shall determine the dates of regular meetings of the Faculty Senate as specified in By-law III, Item a.

2) The Executive Committee shall select the chair of each standing and ad hoc committee from among the faculty members of each respective committee. . **In the event that the chair of a standing committee resigns during the academic year in which he/she is serving, the chair of the Faculty Senate shall, in consultation with the current members of that standing committee, appoint a new chair from the members of that committee. If none of the committee members are able or willing to serve, the chair of the Faculty Senate may appoint a chair from the members of the University Faculty.**

3) Upon request by the chair of any standing committee, the Executive Committee shall submit to that standing committee a written statement clarifying the responsibilities of the standing committee, subject to the provisions of the Constitution and of these By-laws; and the Executive Committee may submit such a statement to any standing committee on its own initiative.

4) The Executive Committee shall be responsible for identifying existing or emerging issues affecting the nature and scholarly effectiveness of the University, including all proposed changes in the organizational structure of the University falling within the scope of Article III, Section B, and Article V, Section A, Paragraph 2, of the Constitution of the University Faculty. The Executive Committee shall take suitable and timely action with respect to all such issues, including, as appropriate, their placement on the agenda of the Faculty Senate.

5) Since each elected faculty member on the Executive Committee serves *ex officio* on his or her constituent faculty executive committee, as provided in the Constitution Article VI, Sec. A, Par. 1, he or she should report to the Faculty Senate Executive Committee at least once during the year about issues affecting his or her constituent faculty.

6) The Executive Committee should hear reports from the standing committees at least once a year, preferably in the middle of the academic year.

The Executive Committee shall take the initiative in periodically exploring with the President plans and projects affecting the Faculty and the University and shall assume full responsibility for bringing to the attention of the Faculty Senate all issues which, in the Committee's judgment, affect the vital interests of the Faculty and involve the nature and direction of the University.

**Proposed Language re Vacancy of Faculty Senate Chair – to be included in Chapter 2, Article V (Faculty Senate), Sec. F (Apportionment, Election, Term of Office, and Vacancies), new par. 6 – approved by By-Laws Committee at 5-13-15 meeting**

Par. 6. VACANCY OF FACULTY SENATE CHAIR DURING TERM. If the Faculty Senate chair is unable to complete his or her term, the vice-chair of the Faculty Senate shall assume the position of Faculty Senate chair. If this vacancy occurs during the fall semester, there shall be an election for a new vice chair. The new chair may choose to serve as chair again the following year, and shall notify the Secretary of the University Faculty of their decision by February 1.

If a vacancy in the position of the Faculty Senate chair occurs after the fall semester, then the current vice chair will assume the role of chair immediately and continue as chair during the following year. The Faculty Senate Executive Committee may choose to hold the election for a new chair-elect earlier than otherwise provided in the Faculty Handbook.

## Proposed Addition to the Constitution of the University Faculty

### Faculty Handbook, Chapter 2, Article VI

#### Sec. A. Executive Committee

Par. 1. The Executive Committee shall consist of fourteen persons. The president of the University, or, in the absence of the president, a designee of the president; the provost; the chair of the Faculty Senate; the vice chair of the Faculty Senate; the immediate past chair of the Faculty Senate; the secretary of the University Faculty shall be members *ex officio*. In addition, there shall be eight faculty members of the Faculty Senate one representing each of the constituent faculties, **chosen by the faculty senators of the constituent faculty by a democratic process which process shall include newly-elected as well as continuing senators. The faculty members shall be** elected at large by the Faculty Senate for one-year terms. Each of the elected members of the Faculty Senate Executive Committee shall serve *ex officio* on the faculty executive committee of his or her constituent faculty. A member may be successively re-elected to membership of the Executive Committee for the duration of his or her term as a member of the Faculty Senate. The chair of the Faculty Senate or, in the absence of the chair, the vice chair shall serve as chair of the Executive Committee.

Par. 2. The Executive Committee shall consult with the president on such matters as the president may bring before it; it shall be empowered to act for the Faculty Senate between meetings on matters requiring emergency action; and it shall advise the president in the selection of officers of academic administration whose positions carry responsibilities extending beyond a single constituent faculty.

Par. 3. The Executive Committee shall set the agenda for meetings of the Faculty Senate, subject, however, to such exceptions as may be specified in the by-laws of the Faculty Senate.

Par. 4. The Executive Committee shall report all actions and recommendations to the Faculty Senate.

## Proposed Revision to Chapter 3 of the Faculty Handbook

### Revisions to Chapter 3, Part One, Article 1, Sec. K

#### **K. Non-Renewal of Term Appointments**

(This provision shall not apply to special University Faculty appointments. Special appointments may be terminated in accordance with the terms of the appointment.)

1. A decision not to reappoint a faculty member beyond his or her current appointment term shall be communicated to him or her in writing by the chair of the department, with copy sent to the dean of the constituent faculty (or by the dean in the case of a school without department structure) in accordance with the following schedule:
  - a. If the faculty member will have continuously served the University for not more than one year at the end of the current appointment term, notice of the intention not to reappoint the faculty member beyond the current appointment term shall be given at least three months prior to the end of the current appointment term.
  - b. If the faculty member will have continuously served the University for more than one year but not more than two years at the end of the current appointment term, notice of the intention not to reappoint the faculty member beyond the current appointment term shall be given at least six months prior to the end of the current appointment term.
  - c. If the faculty member will have continuously served the University for more than two years at the end of the current appointment term, the faculty member shall be given a 12-month terminal appointment. The notice of the intention not to reappoint the faculty member beyond the 12-month terminal appointment shall be given prior to the start of the terminal appointment year. The terminal appointment may consist of the 12 months prior to the end date of the current appointment term.
  - d. The notice of the intention not to reappoint a faculty member shall inform the faculty member of his or her right under Section I, I, 5 to request promotion and/or tenure consideration within four weeks of receipt of such notice, if such a right exists under Section I, I, 5.
  - e. The notice of the intention not to reappoint a faculty member is adequate if delivered to the faculty member in person or if mailed **or sent by overnight delivery service** to the faculty member's latest address on file with the University, return receipt requested, within the time specified in the foregoing schedule.

# think: international

WE BRIDGE  
CWRU  
AND THE  
WORLD

**Center for International Affairs  
Strategic Plan Phase II  
Faculty Senate Executive Committee  
April 10, 2015**



CENTER FOR  
INTERNATIONAL AFFAIRS

CASE WESTERN RESERVE  
UNIVERSITY

Center for International Affairs

# Process

- **Staff of Center for International Affairs met over Summer, 2014**
- **Process and drafts reviewed by International Affairs Advisory Council, Education Abroad Advisory Council, and the International Student Services Advisory Council**
- **Review draft plan Deans and Leadership**
  - **Dean's Council**
  - **CAS Chair Council and Executive Committee, CSE Policy Committee, MSASS Steering Committee, WSOM Chair Meeting, School of Nursing Executive Committee,, School of Medicine Dean's Leadership Team,, School of Law Senior Management, School of Dental Medicine Dean's Leadership Team Leadership committees in schools throughout the university**
  - **International Affairs Visiting Committee**

# Presented Draft Plan to campus departments and groups (Spring, 2015)

Presentations	
CAS	12
CSE	4
FPB-SON	2
MSASS	2
SODM	2
SOL	1
SOM	3
WSOM	1
Campus Groups	6
Faculty Groups	3
Staff Groups	2
Student Groups	5
<b>Total</b>	<b>43</b>

Over 500 faculty,  
staff and students  
participated in  
presentations!

# Recommendation 2

**SUPPORT FACULTY **AND STAFF** IN ORDER TO DEVELOP NEW AND STRENGTHEN EXISTING INTERNATIONAL RELATIONSHIPS WHILE PROVIDING SUPPORT FOR EXPANDING INTERNATIONAL UNDERSTANDING AND ENGAGEMENT.**

## **Initiatives Abroad**

- **Develop & strengthen university-wide international relationships, increasing opportunities for research & collaboration**
  - ❖ **China, Brazil, the countries of East Africa, and ASEAN region**

Develop and strengthen CWRU's university-wide international relationships to increase opportunities for research and collaboration for the mutual benefit of both CWRU and our international partners. CWRU has an established presence in China which will continue to remain an area of emphasis. In addition, CWRU will continue to expand its international emphasis, specifically in Brazil, the countries of East Africa and the ASEAN region because of existing relationships and the opportunities present to develop deeper relationships.



**Thank you!**

**CASE WESTERN RESERVE UNIVERSITY  
PLAN FOR INTERNATIONALIZATION  
PHASE II, Draft 7  
April 8, 2015**

**I. EXECUTIVE SUMMARY**

After successfully achieving many of the recommendations set forth in the initial Plan for Internationalization, the Center for International Affairs developed Phase II, a continuation and expansion of the original plan (Phase I). Phase II builds on the accomplishments of the initial Plan for Internationalization and the concepts expressed in the new Case Western Reserve University (CWRU) strategic plan: *Think Beyond the Possible*. Four strategic objectives are identified in Phase II.

1. *Continue to develop the **structure and resources** to empower the Center for International Affairs, the faculty, the staff, and the students to **fully realize the international potential** at CWRU, **particularly in the graduate and professional schools**, and have the authority to carry it out.*
2. ***Leverage existing resources** on- and off-campus (i.e., faculty, staff, students, alumni, etc.) to **broaden CWRU's international reach and potential**.*
3. ***Communicate international achievements, initiatives, resources, needs, and connections** with the campus and the broader community, locally, nationally, and internationally.*
4. *Provide **intentional international and welcoming experiences** for all students, alumni, faculty, and staff.*

These four objectives led to the development of **seven recommendations** in order for the university community to further the international efforts of CWRU.

1. *Become an exceptional university for international graduate students to live and study.*
2. *Support faculty and staff in order to develop new and strengthen existing international relationships while providing support for expanding international understanding and engagement.*
3. *Graduate undergraduate students who demonstrate a movement toward and achievement in global citizenship.*
4. *Maintain and expand a communication infrastructure to promote campus internationalization.*
5. *Utilize technology to centralize information about international activities and research on campus to enable better collaboration.*
6. *Collaborate with existing university structures to identify and secure funding sources for various international initiatives.*
7. *Engage international alumni so that they become more connected to the university.*

The full Phase II document provides a detailed explanation of the initial plan, the process for developing Phase II, and the context and structure of Phase II, as well as specific goals and metrics for each recommendation.

**II. INTRODUCTION AND BACKGROUND**

### **Introduction and Rationale for Internationalization**

In January 2012, the Case Western Reserve University (CWRU) community adopted its first ever international strategic plan, the Plan for Internationalization (Phase I). The International Planning Committee (IPC) stated that “internationalization [was] necessary to the achievement of a primary goal and responsibility of institutions of higher education in the United States—to advance knowledge in order to improve the lives of the world’s population in a meaningful and sustainable way.” Phase I went on to state that “Internationalization is also a competitive issue relative to other first-tier research universities in the United States and internationally.” (See Appendix One for the complete text of Phase I of the Plan for Internationalization.)

Reinforcing CWRU’s vision and mission as set forth in CWRU’s 2008 – 2013 strategic plan *Forward Thinking* (<http://www.case.edu/stratplan/>), CWRU’s new 2013 – 2018 strategic plan *Think Beyond the Possible* (<http://www.case.edu/strategicplan/>) demonstrates a continuing commitment to promoting international endeavors and expanding CWRU on the world stage. The new strategic plan also specifically addresses the ongoing international efforts and commits to “deepen and expand the university’s international engagement.” (See Appendix Two for the full text of CWRU’s vision, mission, and international engagement section in the 2013 - 2018 strategic plan.)

### **Guiding Principles for Internationalization**

The guiding principles and objectives for internationalization at CWRU were set forth in Phase I in order to “frame the specific recommendations . . . and ongoing internationalization efforts by the university and its individual schools and departments.” The principles, as stated in Phase I, are to:

1. *Create an environment of learning and living that offers the university community the experiences, values and knowledge base that enable “global citizenship.”*
2. *Create and strengthen selected educational and research partnerships with institutions outside the United States that share with CWRU the objective of internationalization. These partnerships should be university-wide and strategic as well as school and department based, and they should represent the strengths and aspirations of the faculty.*
3. *Provide our students opportunities to experience high-quality local and international courses and learning experiences that promote the personal and institutional goals of global citizenship.*
4. *Generate the means that will enable our students from the United States and abroad to benefit from international experiences that transcend personal financial limitations.*

It is with these guiding principles that the Center for International Affairs (the Center), the schools and the College, and the university as a whole set out to achieve the twelve (12) recommendations set forth in Phase I. (See Appendix Three for a list of the recommendations and outcomes.)

### **Outcomes of the Initial Plan for Internationalization**

While Phase I was only adopted in January of 2012, in many ways the efforts to coordinate international activity began in May of 2009, with the hiring of the university's first senior international officer. Some of the early initiatives included creating a database of faculty with degrees from international institutions and of information about existing international agreements, centralizing education abroad efforts, expanding services to international students, and developing the Center for International Affairs, which opened in September, 2011. A direct organizational outcome of Phase I (Recommendation 8), the Center promotes the internationalization efforts of the university as evident in its mission statement, which is as follows:

*The Center for International Affairs provides leadership, expertise, and support to the Case Western Reserve University community, cultivating a dynamic international presence and inspiring a culture of global understanding and responsibility.*

By collaborating with and supporting faculty, staff, and students, many of the measurable recommendations set forth in the Phase I have been met or are on target to be met within the coming years. (See Appendix Three for a list of the recommendations and outcomes.) While there is much to celebrate in the achievement of Phase I, the university community recognizes that much work remains in order to continue to advance the goals of the original plan.

### **Development of Phase II**

The genesis of this second phase of the Plan for Internationalization (Phase II) is four-fold. First, some of the more ambitious portions of the initial plan lacked measurable goals. The approach of Phase II is to provide such goals, even in hard-to-quantify areas. Second, Phase II is more concentrated on graduate and professional students, research, and alumni. While graduate and professional students, research, and alumni were discussed in the initial plan, the concentration in Phase I was undergraduate students, as the IPC recognized that undergraduate students needed immediate and measurable action. The concentration shifts in this document. Third, by adopting Phase II, the university community, and in particular the Center for International Affairs, will gain the additional structure and resources to implement its recommendations. Finally, Phase II contains several specific recommendations—such as the recommendation regarding communication—that will provide the infrastructure and support to move the university towards its objective of fully realizing its international potential.

As CWRU renewed its commitment to internationalization in the 2013-2018 CWRU strategic plan *Think Beyond the Possible*, it became clear that the university was poised to move into a new phase of international initiatives. In the spring of 2014, the Center published its first annual report which described not only the activities of 2013, but also presented a snapshot of the achievements to date. Building directly upon the CWRU strategic plan and the accomplishments of Phase I of the Plan for Internationalization, the Center embarked on developing a Phase II Plan in the summer of 2014.

The process for developing Phase I directly involved over 100 constituents across campus, many working groups, and an extensive approval process. In thinking about planning for a second

phase, the Center determined that asking a comparable number of faculty, staff, and students to directly work on the initial segment of Phase II would be burdensome and unproductive—especially in light of the just completed effort by the campus community to complete the university’s 2013-2018 strategic plan. Therefore, the Phase II process is much more streamlined, involving the staff of the Center initially and then broadening to the Center’s advisory councils, university leadership groups, and then to the campus and beyond. Over the course of the process, the entire campus community, including each school and the College, together with many academic departments, a variety of campus organizations and individual students, faculty, staff and alumni will have multiple opportunities to review and provide comments and suggestions.

The first step in the process of developing Phase II was to critically evaluate the recommendations set forth in the initial plan, analyzing both areas of success and areas that require further work. Based on feedback throughout the previous year as to the goals of the internationalization efforts and work done by the International Affairs Advisory Council, the Education Abroad Advisory Council, and the International Affairs Visiting Committee, the staff of the Center created an initial draft of Phase II.

The next steps involved presenting the draft to the advisory councils (the councils listed in the previous paragraph and the International Student Services Advisory Council), meeting with key leadership groups on campus, including the deans and leadership organizations in various schools and the College.<sup>1</sup> Each of these groups made comments and suggestions, resulting in this Draft 5. Phase II (Draft 5) was presented to the full campus community, through open forums, meetings with departments, email and social media contributions, and input from alumni and others beyond the university. This input, which has taken place during the 2015 Spring Term, has allowed the campus community to further develop and refine Phase II, resulting in this Draft 6. Draft 6 is now being circulated to the campus community. After further meetings and input after the release of Draft 6, the final step is that Phase II will be brought before the Faculty Senate for its endorsement; The Provost then must officially accept the document. The planned timeline is to have this process completed by the end of the 2015 Spring Term.

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<sup>1</sup>In addition to the International Affairs Advisory Council, the Education Abroad Advisory Council, the International Student Services Advisory Council, and the International Affairs Visiting Committee, as of January 30, 2015, Phase II Draft Four has been presented to the Dean’s Council, the College of Arts and Sciences Executive Committee and Department Chairs meeting, the Case School of Engineering Policy Committee, the Case School of Law Leadership Team, the Francis Payne Bolton School of Nursing Dean’s Cabinet and Executive Committee, the School of Dental Medicine Leadership Team, the Weatherhead School of Management Department Chairs meeting, the Mandel School Steering Committee, the School of Medicine’s Dean’s Leadership Team are scheduled. and the Faculty Senate. In addition there have been many meetings during Spring, 2015. A full list of meetings will be part of the final draft of Phase II to be presented to the Faculty Senate.

### III. PHASE II PLAN FOR INTERNATIONALIZATION

#### Objectives and Context for Phase II

Phase II of the Plan for Internationalization incorporates Phase I, including the existing guiding principles. It recognizes the achievements of the past four years as well as the changing needs of CWRU and its constituents. Phase II contains four main objectives, which provide a strategic focus for each of the new recommendations. These objectives are:

1. *Continue to develop the **structure and resources** to empower the Center for International Affairs, the faculty, the staff, and the students to **fully realize the international potential** at CWRU, **particularly in the graduate and professional schools**, and have the authority to carry it out.*
2. ***Leverage existing resources** on- and off-campus (i.e., faculty, staff, students, alumni, etc.) to **broaden CWRU's international reach and potential**.*
3. ***Communicate international achievements, initiatives, resources, needs, and connections** with the campus and the broader community, locally, nationally, and internationally.*
4. *Provide **intentional international and welcoming experiences** for all students, alumni, faculty, and staff.*

Phase II details seven (7) recommendations for furthering the internationalization efforts at CWRU. The recommendations all support one or more of the Phase II objectives listed above. In addition, the recommendations are structured to fit into a framework for internationalization that emphasizes achievements in three specific areas.

1. *Curriculum/Co-Curriculum*—including undergraduate and graduate paths, both curricular and co-curricular that support the educational mission of the university.
2. *Initiatives Abroad*—encompassing research partnerships, collaborations, physical presence, and program development for all students (with emphasis on graduate students) faculty, and staff.
3. *On-Campus/Community Impact*—including the international student experience (undergraduate and graduate), the international faculty and staff experience, campus engagement, international campus projects, and community engagement.

The recommendations are designed to guide the CWRU community in realizing its international potential. While the Center for International Affairs will continue to provide leadership, Phase II is intended to be implemented collaboratively across campus. For example, Recommendation 4 emphasizes communication regarding international achievements. All efforts in this area will be in conjunction with the university Marketing and Communications office. Part Four of this plan outlines the metrics of success and the offices responsible for the various initiatives.

### **Important Concepts**

To assure that key areas of the document are understood, it is important to define some important concepts that are used throughout Phase II.

*Internationalization*, in the context of higher education, specifically CWRU, includes the internationalization of curriculum, the internationalization of research, collaborating with international partners, attracting a broad base of international students, involving international alumni, and creating international quality assurance frameworks, all with the a goal of improving the lives of the world's population in a meaningful and sustainable way, assuring that CWRU is competitive relative to other first-tier research universities, and developing a strong international presence and reputation.

*Global citizenship* was defined in the initial Plan as “the ability to understand different cultural perspectives.” This definition holds true; however, Phase II expands this definition so it now reads *the ability to appreciate, understand, and adapt to different cultural perspectives, values, and behaviors*. The full definition is therefore as follows: Global citizenship is the ability to appreciate, understand, and adapt to different cultural perspectives, values, and behaviors. The concepts of appreciation and adaptation add a sense of empathy and resilience that exemplifies the idea of global citizenship.

*University-wide international relationship* refers to a collaborative partnership among faculty, universities, industry, governments and/or other institutions where there is the opportunity to benefit both our international partner and CWRU and for the relationship to assist different units and persons across the university. A *university-wide international relationship* does not necessarily refer to the study of the historical, political, or economic context within these specific regions, though such study is a key to fully developing these collaborations. A *university-wide international relationship* in no way replaces and only adds to the international relationships that have been developed by faculty, departments, the College and the schools. In order for a relationship to be determined to be a *university-wide international relationship*, at least three (3) faculty constituents, subject to reasonable exceptions, should be engaged.

### **Recommendations**

#### **1. BECOME AN EXCEPTIONAL UNIVERSITY FOR INTERNATIONAL GRADUATE STUDENTS TO LIVE AND STUDY. (Obj. 4)**

- **Curriculum/Co-Curriculum**
  - Expand opportunities for graduate students to become proficient in languages other than English through various paths of language training, including intensive language study abroad opportunities, on-line language offerings, and language partner options.
  - Support faculty in developing semester/summer study abroad options specifically for graduate students.
- **Initiatives Abroad**
  - Develop and communicate CWRU international relationships so that graduate students can leverage these connections to support research and job prospects.

- Work to develop relationships with international government agencies to facilitate the admission of a breadth of international graduate students.

- **On-Campus/Community Impact**

- Provide broader support to international graduate students.
  - Provide support services to spouses and families of international graduate students.
  - Create an international graduate student ombudsman to provide assistance to graduate students.
  - Develop targeted outreach programs to help international graduate students develop a community.
  - Work with the Division of Student Affairs to create on-campus housing options for graduate students and their families.
  - Create living/learning environments for graduate students.
- Engage the Career Center in providing support specifically for international graduate students.
- Work with various offices on campus, including but not limited to UCITE, the Office of Inclusion, Diversity, and Equal Opportunity, the Office of Faculty Development, Human Resources, the Staff Advisory Council, and various offices within the Division of Student Affairs, to provide training opportunities for faculty and staff on cross-culture competency, unique international community needs, educational norms and obstacles in other countries, etc.

## 2. SUPPORT FACULTY AND STAFF IN ORDER TO DEVELOP NEW AND STRENGTHEN EXISTING INTERNATIONAL RELATIONSHIPS WHILE PROVIDING SUPPORT FOR EXPANDING INTERNATIONAL UNDERSTANDING AND ENGAGEMENT. (*Obj.4*)

- **Curriculum/Co-Curriculum**

- Identify funding opportunities for faculty to internationalize their courses and curriculum.
- Support staff by providing opportunities for language courses or other intercultural development training.

- **Initiatives Abroad**

- Support CWRU faculty in becoming scholars abroad through increasing incentives to apply for Fulbright grants and other funding opportunities, including working with the schools and the College to provide appropriate release time and salary support for faculty.
- Develop travel grants to assist faculty in traveling internationally for meetings and conferences.
- Develop and strengthen CWRU's university-wide international relationships<sup>2</sup> to increase opportunities for research and collaboration for the mutual benefit

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<sup>2</sup> See the explanation of *university wide international relationship* in the important concepts section of Phase II.

of both CWRU and our international partners.<sup>3</sup> CWRU has an established presence in China which will continue to remain an area of emphasis. In addition, CWRU will continue to expand its international emphasis, specifically in Brazil, the countries of East Africa,<sup>4</sup> and the ASEAN region<sup>5</sup> because of existing relationships and the opportunities present to develop deeper relationships. Some examples of broadening relationships could include:

- Broad research initiatives.
  - Close government relationships.
  - Study abroad opportunities through exchanges and faculty-led programs.
  - CWRU international offices.
  - Scholarships for students from those countries to study at CWRU and for CWRU students to study there.
  - CWRU-credit semester or summer cohort-based study abroad programs
  - Faculty exchange/training.
  - Curriculum exchange/training.
- Develop opportunities for staff to engage in experiences abroad through site visits, study abroad program support, or other avenues of intercultural exchange.
- **On-Campus/Community Impact**
    - Develop a technological structure, in conjunction with the faculty life cycle project and/or faculty activity reports, to capture international activity on campus in order to provide a network of opportunity for faculty. Identify and promote national and international grants that support faculty research interests.
    - Create training programs or workshops for faculty and staff to support engagement with international students and other international constituents.

### 3. GRADUATE UNDERGRADUATE STUDENTS WHO DEMONSTRATE A MOVEMENT TOWARD AND ACHIEVEMENT IN GLOBAL CITIZENSHIP (*Obj. 4*)

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<sup>3</sup> CWRU engages in international activity and partnerships in countries on every continent. Focusing on the named countries/regions as a strategic initiative in no way diminishes or seeks to reduce initiatives elsewhere. In order to internationalize the university, faculty must continue to collaborate and develop partnerships in every part of the world, whether or not in areas defined as *university-wide international relationships* (see important concepts). The Center for International Affairs will continue to support these efforts. Because of limited resources, both financial and personnel, this plan proposes to deepen the relationship with China and grow select East Africa, Brazil, and ASEAN as areas of strategic emphasis. For an explanation and rationale for the selection of these three areas, please see Appendix Three.

<sup>4</sup> For our purposes, the countries of East Africa generally include Burundi, Kenya, Rwanda, Tanzania, Ethiopia, and Uganda. The university may engage with one or more of these countries and may add other East African countries, if appropriate.

<sup>5</sup> The countries of ASEAN include [Indonesia](#), [Malaysia](#), the [Philippines](#), [Singapore](#), [Thailand](#), [Brunei](#), [Cambodia](#), [Laos](#), [Myanmar \(Burma\)](#), and [Vietnam](#). Again, the university may engage with one or more of these countries.

- **Curriculum/Co-Curriculum**—Each school and the College will identify ways to internationalize the curriculum and co-curriculum by infusing global awareness, knowledge, and cross-cultural competency throughout teaching, research, and service endeavors. Examples could include, but are not limited to the following:
  - Incorporate a language requirement or emphasis.
  - Develop a resource center for faculty with information about internationalizing courses and/or entire curricula.
  - Bring in speakers to the University Center for Innovation and Teaching Education (UCITE) to discuss ways to internationalize curriculum in many disciplines.
  - Develop a pathway for every student to have access to study abroad in every major.
  - Incorporate international student perspectives into classes and programs.
  
- **Initiatives Abroad**
  - Assure that a minimum of 50% of the undergraduate students engage in an educational abroad experience (including study, research, academic internships, etc.), with a minimum of 20% of all undergraduate students engaging in a semester or academic year experience by the end of the academic year 2019-2020.
  - In conjunction with faculty, identified pre-approved study abroad courses and study abroad plans to create a more seamless study abroad process for both students and the faculty advisors.
  - Identify and develop a catalog of international internship, research, and co-op options for undergraduate students.
  
- **On-Campus/Community Impact**
  - Utilize a national measure given at the beginning of each student’s CWRU career and upon graduation to determine global competency improvement.
  - Increase the number of undergraduate international students to a percentage that is consistently in the top 1/3 of AAU private universities by the 2019-2020 academic year, and commit to reporting on international enrollments at AAU private universities each fall.
  - Achieve greater diversity among our international students through the strategic use of need based financial aid and merit scholarships without jeopardizing our overall net tuition goals, while recognizing that enrollment patterns of international students will always reflect broader international trends.
  - Work with undergraduate domestic students to raise their level of cultural competency and understanding.
  - Develop intentional, measurable initiatives so that domestic and international students interact more fully on campus. Examples include, but are not limited to the following:
    - Become more intentional in housing placement.
    - Develop ways for ESL SAGES classes to interact.
    - Continue to develop and refine the International Student Success Series.<sup>6</sup>

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<sup>6</sup> The International Student Success Series is a series of weekly events, programs, and meetings for international students developed in collaboration with various student services offices at CWRU. This series is an extension of

- Increase the number of international exchanges.
- Provide intercultural workshops for domestic students.
- Further engage existing programs, such as the Spoken English Language Partner (SELP) program, the International Family Friendship program, and mentoring programs across campus.

**4. MAINTAIN AND EXPAND A COMMUNICATION INFRASTRUCTURE TO PROMOTE CAMPUS INTERNATIONALIZATION. (Obj. 3)**

- **Curriculum/Co-curriculum**
  - Develop the means to communicate different international course offerings across campus in order to cluster courses on related international topics into various minors.
- **Initiatives Abroad**
  - Develop a means of effectively communicating international activities and opportunities with alumni living in the U.S. and overseas.
  - Create and implement a strategy for communicating international achievements with international constituents, including international partners and potential donors.
  - Develop relationships with international governments to communicate ways in which collaboration can occur and to assist in recruiting students, particularly graduate and professional students.
  - Communicate achievements and develop a strategy to increase CWRU's standings in world rankings.
- **On-Campus/Community Impact**
  - Further develop the means for effectively communicating international activities and opportunities with students, faculty and staff at CWRU.
  - Create a strategy for communicating international achievements with local constituents and potential donors.
  - Coordinate/support/facilitate international communication efforts of the individual schools.
  - Continue to develop a strong faculty-led internal advisory board structure to support, coordinate, and communicate university-wide international efforts.

**5. UTILIZE TECHNOLOGY TO CENTRALIZE INFORMATION ABOUT INTERNATIONAL ACTIVITIES AND RESEARCH ON CAMPUS TO ENABLE BETTER COLLABORATION. (Objs. 2 and 3)**

- **Curriculum/Co-Curriculum**
  - Create a database of pre-approved study abroad courses to simplify the study abroad course approval process.
  - Through technology, work with domestic and international colleges and universities to offer courses in real time across the different institutions,

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orientation programing and is designed to help international students transition and better understand the social and academic culture at CWRU.

perhaps creating a consortium of classes taught across institutions focusing on specialized topics.

- **Initiatives Abroad**
  - Develop the technology to coordinate international travel so that faculty and staff traveling abroad can add elements of recruitment, alumni support, development, and partnerships exploration to appropriate international trips.
- **On-Campus/Community Impact**
  - Transform the international agreement process to become more streamlined and user-friendly.
  - Create international activity and achievement reports to the schools and to external constituents to further promote and encourage activity and collaboration.
  - Develop a university-wide registration and approval system for all university funded international travel to provide risk management support (i.e., transportation out of an unsafe region, assistance in a medical emergency, etc.) so that all faculty, staff, and students are protected as they travel abroad.

**6. COLLABORATE WITH EXISTING UNIVERSITY STRUCTURES TO IDENTIFY AND SECURE FUNDING SOURCES FOR VARIOUS INTERNATIONAL INITIATIVES.** (*Objs. 1, 2, and 3*)

- **Curriculum/Co-Curriculum**—Identify funding opportunities for donors and secure funds from donors to enable support of curricular issues, for example:
  - Scholarships for study abroad.
  - Scholarships to attract a breadth of international students to study at CWRU.
  - Scholarships for graduate student international research.
  - Curriculum internationalization grants.
- **Initiatives Abroad**
  - Identify funding opportunities for faculty research and education in order to internationalize the university.
  - Explore funding opportunities from governments and specific government agencies in other countries and develop the appropriate relationships to capitalize on these opportunities.
  - Explore funding opportunities from foundations interested in international research and education and develop the appropriate relationships to capitalize on these opportunities.
- **On-Campus/Community Impact**
  - Create appropriate international materials for potential donors.
  - Identify specific funding opportunities for donors and secure funds from donors, for example for the following outcomes:
    - Scholarships for incoming international students.
    - Naming the Center for International Affairs.

- Creating a chair within the Center for International Affairs.
- Creating internship and job opportunities with Northeast Ohio corporations and non-profits.
- Work with the Office of University Relations and Development to raise \$20 million for internationalization efforts under the auspices of the extended capital campaign.

**7. ENGAGE INTERNATIONAL ALUMNI SO THAT THEY BECOME MORE CONNECTED TO THE UNIVERSITY.** (*Objs. 1, 2, and 3*)

- **Curriculum**
  - Engage alumni in creating opportunities for CWRU students to conduct internships, research, and co-ops abroad.
  - Create alumni support networks for study abroad students.
- **Initiatives Abroad**
  - Provide opportunities for international alumni to support and promote CWRU recruitment by meeting with admitted students and working with prospective students and families.
  - Create avenues for alumni to raise the profile of CWRU in other countries and develop the CWRU international community.
- **On-Campus/Community Impact**
  - Prioritize international projects/correspondence/activities in conjunction with the Office of University Alumni Relations, the Case Alumni Association and other offices at CWRU that work with alumni.

## Appendix One

See attached Plan for Internationalization.

## Appendix Two

CWRU's mission statement:

*Case Western Reserve University improves people's lives through preeminent research, education and creative endeavor.*

*We realize this goal through:*

- *Scholarship that capitalizes on the power of collaboration.*
- *Learning that is active, creative and continuous.*
- *Promotion of an inclusive culture of global citizenship.*

Similarly, the university's vision is expressed as follows:

*We aspire to be recognized internationally as an institution that imagines and influences the future.*

*Toward that end, we will:*

- *Support advancement of select academic fields as well as new areas of interdisciplinary excellence.*
- *Provide students with the knowledge, skills and experiences necessary to become leaders in a world of rapid change and increasing interdependence.*
- *Nurture a community of scholars who are cooperative, collegial and committed to mentoring and inclusion.*
- *Build on our relationships with world-class health care, cultural, educational, and scientific institutions in University Circle and across greater Cleveland.*

Focus on Internationalization in the strategic plan (p. 5):

*Over the past five years Case Western Reserve has made dramatic strides toward enhancing the global character of its campus. We have increased undergraduate participation in international experiences by nearly a third and quadrupled the number of international undergraduates in our entering classes. We have appointed our first campus-wide internationalization official, opened a Center for International Affairs, and created the first formal international student orientation.*

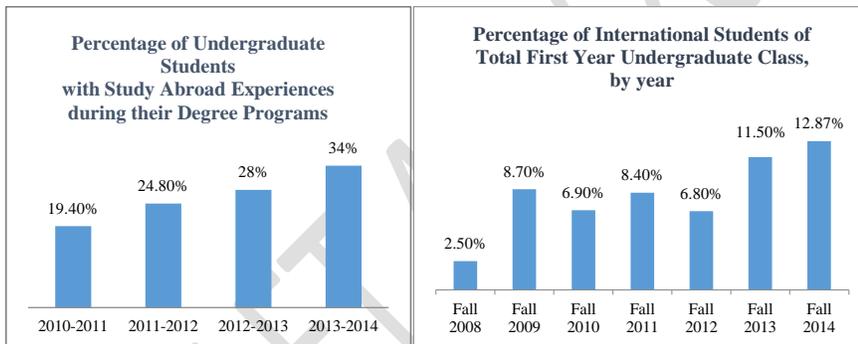
*In addition, we examined our existing international strengths, among them the medical school's global health center and the Jack, Joseph, and Morton Mandel School of Applied Social Sciences' innovative study abroad courses for all university students. Then, we built upon them: The Weatherhead School of Management launched three new international degree programs.*

The law school dramatically expanded partnerships with law schools abroad. And the university is exploring multiple academic initiatives with universities and other organizations in Brazil.

We will deepen and expand the university’s international engagement over the next five years. As part of our efforts to graduate true global citizens, we will ensure that every undergraduate who wants an international academic experience has the opportunity to participate in one. We will seek additional research partnerships around the world. And we will execute the priorities articulated in the university’s internationalization strategic plan, completed in January, 2012.

### Appendix Three

CWRU and the Center for International Affairs have accomplished much since the Plan for Internationalization was approved. Two major accomplishments have been the increase in the number of undergraduate students going abroad and the increase in undergraduate international students. Those trends are reflected in the charts below.



In addition to the increase in study abroad and the increase in international students, CWRU and the Center have a significant number of accomplishments related to the Plan for Internationalization. The table below breaks down each recommendation and lists applicable accomplishments.

#	Recommendation	Accomplishments
1	<b>Employ a comprehensive, cohesive university global strategy for internationalization.</b>	<ul style="list-style-type: none"> <li>• The Plan for Internationalization was created.</li> <li>• The Plan and the Center determined to concentrate on undergraduate education and building the foundation of the university’s initial global strategy (see recommendations 3,4,8,9,10, and 12).</li> <li>• The Center has taken a leadership role locally, statewide, and nationally in global initiatives (including participation in Global Cleveland, the Ohio Board of Regents Globalization</li> </ul>

#	Recommendation	Accomplishments
		<p>Initiative, the Association of International Educators, NAFSA – Association of International Educators, etc.).</p> <ul style="list-style-type: none"> <li>• The Center has been working with the International Affairs Advisory Council and the International Affairs Visiting Committee to determine specific strategies moving forward.</li> </ul>
2	<p><b>Articulate a set of specific institutional strategic initiatives to solidify the university’s commitment to, and provide momentum for, internationalization of the university.</b></p>	<ul style="list-style-type: none"> <li>• The Center has worked with the schools and the College to create serious and sustained opportunities, including funding, with institutions and government agencies in Brazil and East Africa and is working to secure such opportunities in other parts of the world.</li> <li>• The Center has engaged the university community through education about international objectives (presenting at departmental/school-wide meetings, the Global Talk Series, country-focused interest sessions, newsletters, etc.).</li> <li>• Three advisory councils (International Affairs, Education Abroad, and International Student Services) are working to develop strategic areas of focus.</li> </ul>
3	<p><b>Include and support international experience for undergraduates as a core component of the university’s internationalization efforts and a necessary part of instilling global competence in its students.</b></p>	<ul style="list-style-type: none"> <li>• The Center created a fully functioning Office of Education Abroad.</li> <li>• The Center has worked with others on campus to increase undergraduates who study abroad from 19.4% in 2009/10 to 33.8% in 2013/14.</li> <li>• Education abroad opportunities for undergraduate students have been centralized and standardized.</li> <li>• The Center created significant infrastructure for study, research, and work overseas, including state-of-the-art technology to lay the foundation for study abroad.</li> <li>• The Center hired two study abroad advisors and a study abroad information specialist to work with students, bringing CWRU much closer to the service provided by peer institutions.</li> </ul>
4	<p><b>Enroll international undergraduate students who will have a successful student experience, engage fully in student life, and graduate at a rate equal to non-</b></p>	<ul style="list-style-type: none"> <li>• The percentage of international students quadrupled in the first-year undergraduate class, from less than 3% in 2008/09 to approximately 12% in 2013/14 and 2014/15.</li> <li>• An International Students and Scholar Liaison was hired to support students and scholars.</li> <li>• The quality of and services for undergraduate international students has improved through programs like the International Student Success Series.</li> </ul>

#	Recommendation	Accomplishments
	<b>international students.</b>	<ul style="list-style-type: none"> <li>International Education Week has grown to become a significant event on campus, involving more than 10 offices at CWRU and in University Circle.</li> </ul>
5	<b>Request faculty to consider undergraduate curriculum initiatives.</b>	<ul style="list-style-type: none"> <li>Faculty seed grants have supported faculty in developing new curricular initiatives, with the 2014 round of grants focusing largely on curriculum development.</li> </ul>
6	<b>Address internationalization issues affecting graduate and professional education, post-doctoral researchers, and faculty research, scholarship, and creative work and teaching.</b>	<ul style="list-style-type: none"> <li>The Global Talk Series was created to support faculty and staff.</li> <li>The Center has supported new initiatives in East Africa and Brazil, including signing major agreements and creating new opportunities for research and graduate work.</li> <li>The Center supported Case School of Engineering in winning the PIRE: Partnership for International Education and Research grant, a \$3.8M National Science Foundation grant in partnership with schools in Brazil, Belgium, Italy, and the UK.</li> <li>The Center has worked to recognize Fulbright Scholars through the International Achievement Dinner and the Fulbright plaques. The Center also has provided and increased the level of support for faculty applying for Fulbrights.</li> </ul>
7	<b>The Office of International Affairs should seek external funds to cover expenses, other than Center for International Affairs operating expenses and seed money for specific university initiatives, and it should take measures to ensure its accountability.</b>	<ul style="list-style-type: none"> <li>CWRU has committed to assist the Center in raising \$20M in the extended capital campaign.</li> <li>The Office of Education Abroad has joined the Generation Study Abroad initiative with a commitment to raise endowment funds in order to provide \$100,000/year worth of scholarships for students studying abroad.</li> <li>The Center raised over \$200,000 to support its outreach in China.</li> <li>The Center has on-going conversations with alumni, friends and foundations regarding funding for its initiatives.</li> </ul>
8	<b>Build a structure for the Center for</b>	<ul style="list-style-type: none"> <li>The Center for International Affairs opened in September, 2011, with nine employees. Currently the Center has grown to</li> </ul>

#	Recommendation	Accomplishments
	<b>International Affairs to support internationalization.</b>	<p>twelve staff with three fully functioning units: Global Strategy, Education Abroad, and International Student Services.</p> <ul style="list-style-type: none"> <li>• Three internal faculty advisory councils have been created to support the Center units.</li> <li>• The Office of Education Abroad has adopted state-of-the-art education abroad technology, which has vastly improved the experience for students who apply to have an experience abroad and faculty who lead them.</li> <li>• This Office of International Student Services has engaged a company to develop first-of-its-kind technology to create a paperless office, which will be a major advancement in processing government documents for students.</li> </ul>
9	<b>Establish university-wide risk management policies and practices.</b>	<ul style="list-style-type: none"> <li>• The Center has developed a comprehensive, university-wide emergency management plan, approved in April, 2014.</li> </ul>
10	<b>Develop the technology to support internationalization.</b>	<ul style="list-style-type: none"> <li>• The Office of Education Abroad employs state-of-the-art technology to allow students to apply for study abroad and register their travel, to monitor student activity for risk management purposes, and to track study abroad data and exchange balances.</li> <li>• The Office of International Student Services is actively moving towards a seamless and paperless integration of data.</li> </ul>
11	<b>Take measures to enhance engagement of international alumni with internationalization efforts at CWRU.</b>	<ul style="list-style-type: none"> <li>• The Center works with the Office of University Alumni Relations and the Case Alumni Association to engage international alumni in London, Paris, India, Thailand, Malaysia, and elsewhere.</li> <li>• Working through the Center, alumni in London have supported students in the CWRU in London at RADA (Royal Academy of Dramatic Art) program.</li> </ul>
12	<b>Communicate about international activity and internationalization at CWRU.</b>	<ul style="list-style-type: none"> <li>• The Center published its first annual report in April, 2014 (see <a href="http://case.edu/international/pdfs/Annual%20Report%20%202013.pdf">http://case.edu/international/pdfs/Annual%20Report%20%202013.pdf</a>).</li> <li>• Four electronic newsletters (think: international—a monthly newsletter for external audiences; Center Updates—a bi-weekly newsletter to faculty and staff; Education Abroad Update—a bi-weekly update for students interested in education abroad; and ISSNews—a weekly newsletter for</li> </ul>

#	Recommendation	Accomplishments
		<p>international students that shares important immigration and engagement information) are regularly sent out to communicate international activity and achievement and share important information with CWRU and the community. Combined, these e-newsletters reach over 5000 readers.</p> <ul style="list-style-type: none"> <li>• The Center has developed a Global Talk Series for faculty/staff and celebrates faculty and staff achievements through the International Achievement Dinner.</li> </ul>

DRAFT 4/8/2015

## Appendix Four

CWRU has significant relationships with institutions in a variety of countries. We expect our ongoing relationships, such as our commitment to working with institutions in China, to continue to expand and grow. In addition, CWRU is exploring a growth in our international presence in additional key areas.

The Center for International Affairs, working with advisory councils, faculty across campus, and students, went through a year-long process to determine focus areas to develop a CWRU strategic international presence. Initially, the International Affairs Advisory Council, made up of faculty from all of the schools and the College as well as staff, agreed that CWRU would focus on countries or areas to develop this presence using the following criteria:

1. Areas in which there was already a strong CWRU presence of faculty, students, or alumni;
2. Areas of significant opportunity; and/or
3. Areas of significant outside relationships—including government, universities, foundations, and influential persons.

Working with a group of students from the Weatherhead School of Management, the Center mapped current CWRU global activity, nationalities of international students, and international alumni presence to determine areas where strong activity already existed. The Center then took the top eight countries/areas to the International Affairs Visiting Committee and the International Affairs Advisory Council. These countries/areas were narrowed down to Uganda, India, the Association of Southeast Asian Nations (ASEAN),<sup>7</sup> Brazil, and Turkey.

During the 2013/14 academic year, the Center invited any faculty or staff working in these areas to a series of lunches to discuss current and future activity. Thirty to fifty faculty members participated in each area discussion. While all five areas continue to be of interest, the International Affairs Advisory Council and the Center narrowed the list down to three countries/regions for specific, initial concentration: East Africa (including Uganda and countries in the East African community), Brazil, and the ASEAN region. The specific reasons for choosing each area are listed below.

China—CWRU has multiple pre-existing significant relationships with institutions in China. All of the seven schools and the college have active initiatives with Chinese colleagues, and these are expected to continue to expand in the coming years. China is considered an area where CWRU has established and is in the process of strengthening its relationships.

East Africa—CWRU has been engaged in Uganda for over 25 years, with faculty from six of the seven schools and the College, developing various levels of research and education. For a history of CWRU's involvement in Uganda, especially through the School of Medicine and College of Arts and Sciences, see <http://newartsci.case.edu/magazine/fall-2011/at-the-epicenter-of-an-epidemic/> and

<sup>7</sup> ASEAN countries are: Indonesia, Malaysia, the Philippines, Singapore, Thailand, Brunei, Cambodia, Laos, Myanmar (Burma), and Vietnam.

Commented [DF1]: Don't we also have to list China and give a reason for choosing China?

[http://www.case.edu/international/engagement/interventions\\_and\\_innovations.html/](http://www.case.edu/international/engagement/interventions_and_innovations.html/). Activities with other schools have been increasing after the signing of an MOU with the International Law Institute – African Centre for Legal Excellence. Both the School of Law and Weatherhead School of Management have been working with ILI-ACLE to create programs in the region. As a result of the engagements, CWRU has several hundred alumni in the region. These efforts are already significant, and additional focus in this area will only help to solidify CWRU presence and influence.

Brazil—With the advent of the Brazil Science Mobility Program, an initiative launched by the President of Brazil to send 100,000 Brazilian students to foreign countries for a portion of their higher education, CWRU has been actively engaged with Brazilian governmental agencies, Brazilian universities, and Brazilian private corporations. CWRU has signed an MOU with CAPES, the Brazilian Federal Agency for the Support and Evaluation of Graduate Education. As a result of this initial MOU, both the Case School of Engineering and the School of Medicine are working on significant relationships in Brazil.

ASEAN Region—The ASEAN region was not originally included in the list of areas to strengthen CWRU’s international presence; however, after meeting with faculty and staff from around campus, it quickly became evident that the university already was engaged in the ASEAN region and there was widespread interest and support for expanding these relationships. Based on interest across campus, CWRU’s significant alumni presence in the ASEAN region, and existing relationships, the ASEAN region was included as an emphasis for developing a university-wide relationship.