



Curricular Affairs Committee of the Faculty Senate Minutes

Thursday, November 7, 2019, 4:15 – 6:15 pm

Present: Professors Almstead, Dale, Chittenden, Emery, Everse, Garrison, Goodwin, Hibbeler, Ivakhiv, Monsen, Nichols, Rosebush, Sisk, Strickler, Teneback, Tomas, Ultsch, Graduate Student Senate Representative Lindsay Worley and Student Government Association Representative Meagan Cummings

Absent: Professor Gewissler, Hazelrigg, Kervick, Seidl

Guests: Veronika Carter, J. Dickinson, Cindy Forehand

Chair Almstead called the meeting to order at 4:19 pm in 427A Waterman.

I. Approval of the Minutes. The October 3, 2019 minutes were approved as written.

II. Chair's Remarks – Laura Almstead provided the following updates:

- A. Feedback was communicated to Dr. Jim Hudziak regarding the Behavioral Change Health Studies Minor. The team will continue to work with J. Dickinson, and will provide another update to the CAC in September.
- B. Concerns regarding the expansion of LCOM courses was shared with the Educational Stewardship Committee.
- C. Deactivation policy documents will be addressed at the December or January CAC meeting.
- D. Ecological Agriculture major and minor name changes were approved by the Faculty Senate at the October meeting.
- E. A draft of a revised document “Timeline for Policy & Proposal Review Process” was distributed for consideration. The document is posted on the Resources page of the Faculty Senate website. The revised draft has added the 30-day circulation period, and a statement regarding the need for a one-week turn-around from time received to time circulated. CAC members should send comments and suggestions for additional revisions to Laura Almstead.

III. Reports

- A. **New Minor in Bioinformatics, CALS (vote).** Stephen Everse and Jennifer Sisk acted as the review subcommittee and their report is attached to these minutes. The subcommittee recommended approval of the proposal for a new Minor in Bioinformatics submitted by the Microbiology & Molecular Genetics Department in the College of Agriculture and Life

Sciences. Students pursuing an academic career and/or employment in the fields of biotechnology and biomedical research require a strong working knowledge of bioinformatic approaches. It is anticipated that the proposed minor will be of interest to majors from across campus, and that students completing the minor will be better positioned to conduct research while at UVM, and will gain skills beneficial in future graduate students and/or careers. The anticipated start date is the Fall of 2020.

Motion: Laura Almstead called the vote to approve the new Minor in Bioinformatics in the College of Agriculture and Life Sciences.

Vote: 19 Approve, 0 Oppose, 0 Abstain

- B. **New Minor in Biosecurity, CALS (vote).** Eric Monsen and Garth Garrison acted as the review subcommittee and their report is attached to these minutes. The subcommittee recommended approval of a new interdepartmental Minor in Biosecurity submitted by the College of Agriculture and Life Sciences. The minor will be directed by a committee of participating CALS faculty, and the anticipated start date will be Fall 2020. During the comment period, a comment was received from the chair of Political Science Department stating that national security and terrorism were the domain of the Political Science Department. The subcommittee reviewed the list of Political Science courses offered, and did not identify any that would be appropriate for biosecurity (science-based courses focused on bioterrorism and the biology of it, not general national security). Concerns were expressed that the program description and rationale suggest social science content. Laura Almstead will encourage the proposers to reach out to the Political Science Department in the College of Arts and Sciences to explore Political Science courses that might be added to the list of electives for the proposed Minor in Biosecurity. The proposal and any changes in courses or description will be considered at the December CAC meeting.

IV. **APR Reports** – none at this time

V. **Other Business:**

- A. **Substantial changes: BS Business Administration, GSB (vote).** Laura Almstead reported that the Grossman School of Business has requested to no longer require a minor for business students, but instead make a minor optional (though strongly encouraged). The proposal is attached to these minutes. The full GSB faculty approved the proposal, and it is supported by both the GSB Board of Advisors and the Grossman Student Advisory Council to the Dean.

Motion: Meaghan Emery moved to approve the substantially revised BS in Business Administration in the Grossman School of Business

Vote: 17 Approve, 0 Oppose, 2 Abstain

- B. **Name Change: PhD in Human Functioning & Rehabilitation Science, CNHS (vote)** – Laura Almstead reported that the College of Nursing and Health Sciences in conjunction with the Graduate College has requested a program name change for the Doctor of Philosophy in Human Functioning and Rehabilitation Sciences (HFRS) to the Doctor of Philosophy in Interprofessional Health Sciences (IHS). This name change proposal (attached to these minutes) applies to the name of the program and the name of the degree. The requested new name accurately reflects the intent of the program and its curriculum. There is no impact on the current programmatic offerings or the curriculum. The Registrar has approved a change in the

prefix of courses associated with the program from HFRS to IHS. The name change proposal received support from the CNHS curriculum committee, the Graduate Executive Council as well as the Deans of CNHS, the Graduate College, and the Larner College of Medicine, which provides some of the core curriculum.

Motion: Sharon Ultsch moved to approve the Name Change from PhD in Human Functioning & Rehabilitation Science to a PhD in Interprofessional Health Sciences in the College of Nursing and Health Sciences.

Vote: 18 Approve, 0 Oppose, 1 Abstain

- C. **Name Change: Romance Languages, CAS (vote)** – Laura Almstead reported that College of Arts and Sciences has requested a name change for the Department of Romance Languages to the Department of Romance Languages and Cultures. The new name gives a wider and more accurate picture of the courses of study offered, which include both language study at all levels and courses in the cultures, including literature and film, of the regions of the world that speak the languages taught. No changes to prefixes or other codes will be needed.

Motion: Stephen Everse moved to approve the Name Change from Department of Romance Languages to the Department of Romance Languages and Cultures in the College of Arts and Sciences.

Vote: 18 Approve, 0 Oppose, 1 Abstain

- D. **No Contest Termination: M.Ed. Reading & Language Arts, CESS (vote)** – Laura Almstead reported that the College of Education and Social Services (CESS) and the Graduate College have requested the termination of the M.Ed. in Reading and Language Arts. Admissions to the program was suspended in 2011 due to declining enrollments and faculty retirements. The proposal is uncontested and supported at all levels within the College.

Motion: Meaghan Emery moved to approve the uncontested termination of the Masters of Education in Reading and Language Arts in the College of Education and Social Services.

Vote: 18 Approve, 0 Oppose, 1 Abstain

- E. **Prefix request: Occupational Therapy (OT), CNHS (vote)** – Laura Almstead reported that a proposal is in the pipeline for a PhD in Occupational Therapy. A prefix is needed to enable courses to be entered into Courseleaf. The Registrar has confirmed that the prefix OT is available.

Motion: Stephen Everse moved to approve the prefix OT for the proposed Occupational Therapy program.

Vote: 19 Approve, 0 Oppose, 0 Abstain

VI. New Business:

- Laura Almstead will be looking volunteers to serve as the review subcommittee for the PhD in Occupational Therapy proposal.

VII. The meeting adjourned at 5:29 p.m.

Curricular Affairs Committee of the Faculty Senate

MEMO

To: Curricular Affairs Committee of the Faculty Senate
From: Stephen Everse and Jennifer Sisk
Date: October 28, 2019
Re: Approval of a proposal for a new Bioinformatics Minor submitted by CALS & LCOM

We have reviewed a proposal for a new Bioinformatics Minor submitted by CALS & LCOM and recommend approval. The minor is submitted by 12 faculty members from the Microbiology & Molecular Genetics Department with an intended start date of Fall 2020.

Program Description and Rationale

Bioinformatics is a rapidly emerging discipline defined as “the collection, classification, storage, and analysis of biochemical and biological information using computers, especially as applied to molecular genetics and genomics” (Merriam-Webster, 2019). The Bioinformatics minor is designed for students interested in the study of genetic diseases, public health and epidemiology, infectious diseases, microbial ecology, and other life science topics through the application of recent advances in computer technology and statistics. This minor will allow students to take advantage of new employment opportunities in the fields of biotechnology and biomedical research, as well as support their applications to graduate and medical programs.

Justification and Evidence for Demand

Current national and international research trends in botany, ecology, evolution, microbiology, and molecular genetics (to name just a few fields) necessitate a strong working knowledge of the concepts of bioinformatics. Currently a number of UVM laboratories from a variety of Departments utilize bioinformatical approaches in their research. This minor would help support the development of a cadre of students able to more fully engage in on-going research across the campus while preparing them for future employment or further schooling.

Relationship to Existing Programs

There are no currently offered minors at UVM that include bioinformatics as a core component of their required coursework, or that combine components of biological science, computer science, and statistics as their core and prerequisite requirements.

Curriculum

Completion of the minor will require 18 total credit hours of core requirements (12 credit hours) plus electives (6 credit hours) with 10 credit hours of foundational prerequisite courses. Students in the minor may only count up to two core or elective courses toward this minor and any other major or minor.

Required Courses (12 credits)

Number	Name	Credits
MMG 106	Introduction to Biomedical Research Methods	3
MMG 231	Programming for Bioinformatics	3

MMG 232	Methods in Bioinformatics	3
MMG 233	Genetics and Genomics	3

Elective Courses (6 credits)

Number	Name	Credits
MMG 197/198	Undergraduate Research	1 – 6
MMG 211	Prokaryotic Molecular Genetics	3
CS 124	Data Structures and Algorithms	3
CS 254	Machine Learning	3
STAT 087	Introduction to Data Science	3
STAT 200	Medical Biostatistics & Epidemiology	3
STAT 201	Statistical Computing & Data Analysis	3

Prerequisite Requirements (10 credits)

Number	Name	Credits
BIOL 001, BIOL 002, BCOR 011, or BCOR 012	Exploring Biology	4
CS 20 or CS 21	Computer Programming	3
STAT 111, STAT 141 or STAT 143	Basic Statistical Methods	3

Admission Requirements and Process

There are no admission requirements for the minor.

Anticipated Enrollment and Impact on Current Programs

They anticipate 20 – 30 minors ultimately in the program. There are no significant anticipated effects of the minor on current course enrollments.

Advising

The current cadre of MMG undergraduate advisors (Drs. Gilmartin, Guy, Johnson, Hodge, and Murray) will advise the minors as well as Dr. Julie Dragon (Director of the Bioinformatics core).

Assessment Plan

The Learning Goals for the minor are:

1. Describe and apply basic bioinformatics information, concepts, and experimental techniques
2. Apply ethical principles with regard to scientific research, patient information, student and faculty interactions and resources.

Accomplishment of these learning goals will be assessed by:

1. The student's GPA in the core and elective courses in the minor, especially the MMG 231 and MMG 232 courses, which will be reviewed by the course instructors, MMG Advisors, and the MMG Undergraduate Affairs Committee.
2. A Degree Audit assessment by the MMG Advisors, which will be reviewed by the MMG Undergraduate Affairs Committee.

Staffing Plan, Resource Requirements, and Budget

There are no anticipated new faculty or staff appointments associated with this minor, nor are there any anticipated costs associated with the creation of this minor.

Evidence of Support

Letters of support were received from:

- Chair of Computer Science (Dr. Christian Skalka)
- CALS Curriculum Committee
- Dean College of Agriculture and Life Science (Dr. Jean Harvey)

Summary

Students pursuing an academic career and/or employment in the fields of biotechnology and biomedical research require a strong working knowledge of bioinformatic approaches. It is anticipated that majors from across campus, including animal sciences, biochemistry, biology, integrated biological sciences, computer science, microbiology, molecular genetics, neuroscience, nutrition and food science, plant and soil science, plant biology, and statistics will be very interested in adding a bioinformatics minor to their academic studies. We, therefore, support the creation of a Bioinformatics Minor for the Fall of 2020.

Curricular Affairs Committee of the Faculty Senate

MEMO

To: Curricular Affairs Committee of the Faculty Senate
From: Garth Garrison, Erik Monsen
Date: 11/7/2019
Re: Approval of a proposal for a new Minor in Biosecurity submitted by CALS

We have reviewed a proposal for a new interdepartmental Minor in Biosecurity submitted by the College of Agriculture and Life Sciences and recommend approval. The minor will be directed by a committee of participating CALS faculty. If approved by the CAC, Faculty Senate, and Board of Trustees, the start date for the program will be fall 2020.

Program Description and Rationale

This minor allows students to formalize a grouping of courses from social science and agriculture to STEM disciplines with a focus area on biosecurity. Topics covered in the minor include bioterror threats, prevention, and resilience in our lived, built, and natural environments. The learning objectives for the minor include: 1) to think critically about biohazards and what to do about them, 2) to understand how communities reduce vulnerability to bio and agroterrorism and to cope with the consequences of such events, 3) To engage in problem solving, 4) to be exposed to a rich variety of perspectives and ideas from across disciplines involved in biosecurity, and 5) to be able to effectively communicate with stakeholders about biosecurity and bioterrorism.

The proposed minor is a cross-department program to be housed in CALS with Computer Science (CEMS/CS) as a collaborator. The minor requires 17-18 credits of coursework with four required courses and 6 additional credit hours from electives; required courses are offered by CALS and CEMS/CS. Courses in the minor utilize standard educational delivery and are listed on Courseleaf.

The proposers note that threat of bioterrorism is increasing and that the global food supply is a potential target for agroterrorism for any actor who seeks to cause death and destruction, fear and intimidation, coercion, or political, social, or economic disruption. Bio- and Agro-terrorism are subsets of terrorism that have a niche appropriate to be housed in a College of Agriculture and Life Sciences.

Justification and Evidence for Demand

Due to the increasing threat of bioterrorism, there is a growing need for graduates to have some coursework in the areas of biosecurity, including areas of bioterrorism, agroterrorism and related aspects such as communication and policy. Coursework on biosecurity is typically concentrated at the graduate level in the field of public health and the biological/medical sciences. There is even less available on agroterrorism. And while there are isolated courses offered in both these areas at the undergraduate level at degree granting institutions, the proposers could find no undergraduate majors/minors in the U.S. focused on either.

The proposers believe that this minor in Biosecurity, based on possible careers, would attract majors across UVM. From social science and agriculture, to all the STEM disciplines, coursework related to Biosecurity would strengthen a resume. It would also help to create knowledgeable, critically thinking and informed citizens. This prepares students to apply for entry-level jobs in law enforcement, agriculture and communications, among others, with the ability to demonstrate competencies in the subject area without necessarily being an expert.

Relationship to Existing Programs

There is currently no minor at UVM related to biosecurity. The department of Computer Science in CEMS is a collaborator, as two or more of their courses would be appropriate and available to students enrolled in the minor. As stated by the proposers, potential overlap in content may exist with the Computer Science minor if a cybersecurity interest is chosen. Letters of support from Prof. Skalka of CEMS/CS and Dean Schadler of CEMS address this concern. The minor also draws upon and augments a number of existing major programs inside of CALS, as demonstrated by the content and support letters. In addition, the proposers have been encouraged to procure letters from “bio” related programs outside of CALS, which might likewise have overlap.

Curriculum

The minor involves 11 credits from the four required courses as listed below. ASCI 007, CDAE 032, PSS 133 are newly proposed courses. An additional six credits must be taken from the list of approved 100-level and 200-level elective courses shown below. The required course MMG 002 fulfills the prerequisite requirement for PSS133 although other courses also satisfy this requirement. Prerequisites are required for most of the allowed elective courses. A pathway does exist for completion without additional prerequisites - CDAE 032 fulfills the prerequisite requirement for CDAE 141 while MMG 002 fulfills the prerequisite requirement for MMG 101.

The proposers will include a statement in the Catalogue informing students of possible prerequisites--*Students interested in pursuing upper level electives for this minor, please be aware that some have prerequisites not included in the minor course of study.*

In addition, the proposed curriculum does allow one path with less than 9 credit hours of >100 level coursework (taking CS 006 as an elective), which does not meet the Faculty Senate standards for a minor, and will be advised to address this before formal implementation of the minor.

Required Courses

Number	Name	Credits
MMG002	Unseen Worlds: Microbes and You	3.0
ASCI 007	ABCs of Biosecurity	3.0
CDAE 032	Protect Your Privacy	2.0
PSS 133	Agroterrorism and BioPiracy	3.0

Elective courses (6 credits)

- NFS254: Global Food Safety
- MMG101: Microbiology and Infectious Disease

- ASCI 177: Animal Plagues and Global Health
- FS103/NFS114: Human Health in the Food System.
- CDAE260: Smart Resilient Communities
- MMG235: Bioterrorism
- CS006: Exploring Cybersecurity or CS166 Cybersecurity Principles
- CDAE 141: Crisis Communications

Note: In the proposal these courses are referred to as “restricted electives”. We interpret this term to simply refer to the list of electives which are approved for the minor.

Admission Requirements and Process

This minor will be available to students across the University. Students must achieve a 2.0 average in the minor to have it count towards graduation requirements.

Anticipated Enrollment and Impact on Current Programs

There is currently no minor at UVM related to biosecurity. There are no majors with which this minor is not acceptable due to overlap with that major. The proposers noted that potential overlap in content may exist with the Computer Science minor if a cybersecurity interest is chosen. It should also be noted that there might be potential overlap with other “bio” related courses outside of CALS, and thus the proposers have been encouraged to obtain additional letters of support.

All courses will be available to students minoring in Biosecurity or as electives in several majors (ASCI, CDAE, NFS, PSS, MMG). Some will count as a natural science or social science distribution requirement. One required course also fulfills the sustainability requirement. A review of enrollments in courses that have been offered reveals that there is a demand for coursework in this area, and that there is room for an additional 10 percent in available courses.

Advising

Each department involved in the required courses has agreed and will have a designated minor advisor for the Biosecurity minor.

Assessment Plan

No assessment plan was presented

Staffing Plan, Resource Requirements, and Budget

No new faculty are necessary. With electronic sources and current databases, no additional library supports are needed. It is anticipated that there would be no additional costs beyond the current budget for the first year.

Evidence of Support

This program will be housed in CALS as a cross department minor. The proposal was reviewed by the CALS Curriculum Committee and approved by the CALS faculty in September 2019. A letter of support have been provided by Dean Harvey from the College of Agriculture and Life Sciences, Prof. Skalka of the computer science program in CEMS, and from Dean Schadler of CEMS. The proposers have been encouraged to obtain additional letters of support, in particular from “bio” related programs outside of CALS.

Summary

The proposed Minor in Biosecurity allows students to develop focused knowledge in an emerging area of need. There appear to be few undergraduate programs with this focus (particularly agroterrorism) at other institutions or at UVM. The proposers do provide a solid rationale for the program but provide limited evidence for current demand at UVM. The proposed curriculum does allow one path with less than 9 credit hours of >100 level coursework (taking CS 006 as an elective) but otherwise meets Faculty Senate standards for a minor.

The proposal was opposed by the Chair of the Department of Political Science due to potential for overlap in content. However, the new courses proposed for this minor do not appear to have overlap with currently offered courses in Political Science.

Further, the proposers have been encouraged to obtain additional letters of support from outside of CALS before approval by the full faculty senate, especially in the area of biological, environmental and health sciences.

In summary, we recommend approval of this program.

Proposal to Substantially Revise an Existing Academic Program

I. Bachelor of Science in Business Administration

Grossman School of Business (GSB), Undergraduate Program

Dean: Sanjay Sharma, PhD

Associate Dean: Barbara Arel, PhD, CPA

Director of Undergraduate Programs: Amy Tomas, PhD

Earlier this year, the GSB Undergraduate Studies Committee approved a proposal **to no longer require a minor for business students, but instead make a minor optional (though strongly encouraged)**. The proposal was subsequently approved by the full GSB faculty. This proposal has the support of both the GSB Board of Advisors and the Grossman Student Advisory Council to the Dean.

II. Rationale for the Revision

The minor requirement was implemented in the Fall 2011 catalog to replace the previous model of requiring a 4-course General Education Field and a 4-course General Education Discipline. This was done to make it easier for students to access general education requirements that were often restricted to majors and minors. At the time there were only 2 UVM General Education requirements, there are currently 5 UVM General Education requirements. Currently Grossman School of Business students complete at least 30 credit hours of course work outside of business through general education and minor requirements. In response to the recent NECHE re-accreditation and the forthcoming increase in general education requirements at UVM, the GSB faculty approved a motion to increase this requirement to 40 credit hours of work outside of business beginning with the Class of 2024.

GSB students currently take just over half of their courses in GSB. Out of 40 total courses, the GSB curriculum includes:

- a. 22 GSB courses
- b. 4 non-Business core courses
- c. 4 GSB General Education courses
- d. 5 UVM General Education courses
- e. 5-6 Minor courses
- f. 1 Learning Community

Under the proposed revision, students would be able to use those 5-6 courses at “e” to pursue an opportunity of their choice such as: a traditional minor, a certificate program, a dual degree, flexibility in study abroad options. Along with these opportunities students may choose to pursue multiple areas of interest complementing their chosen GSB theme and/or concentration. For instance, a GSB student with a concentration in Marketing and a Theme in Global Business may benefit from both coursework in Psychology and exposure to a language/culture course, combined with a study abroad experience. A GSB student with a theme in Sustainable Business may choose to pursue an Undergraduate Certificate in Integrative Healthcare while a GSB student with a theme in Global Business may choose to pursue an Undergraduate Certificate in Religious Literacy. A GSB student with a double concentration in Finance and Accounting may choose to pursue the Economics minor. A GSB student with a concentration in Business Analytics may choose to pursue a double minor in Computer Science and Statistics. These options will be clearly communicated through the advising process by professional and faculty advisors, supported through the Professional Development Series courses. A sample advising matrix is attached. NOTE: these 5-6 courses may not be used to pursue triple Concentrations or triple Themes within GSB.

III. Changes in the relationship of this proposed revision to current missions and long-range plans of:

UVM: N/A

Participating colleges, departments, and programs: N/A

IV. Relationship of revisions to other academic programs:

No degree programs outside GSB will be affected by the proposed revision.

V. Potential effects on other academic units:

The following units were consulted as this curriculum revision was developed and have provided letters of support for our proposed revision: The College of Arts and Sciences, the College of Engineering and Mathematical Sciences, the College of Education and Social Services, the College of Nursing and Health Sciences and the Rubenstein School of Environment and Natural Resources.

VI. Evidence of need for revision:

- (1) The primary goal is enhanced flexibility for GSB students to build relevant connections across fields in support of their Theme and Concentration areas. In the current curriculum, students have little opportunity to explore. In fact, Honors College, transfer students, ROTC students, Varsity Athletes and students pursuing study abroad experiences often have difficulty fitting in a minor and completing the business requirements in four years. Without identifying “double-dip” course opportunities, these populations have little to no capacity for free electives. If these students do not bring some credit (such as AP credit) with them to UVM, they cannot complete the GSB program in 4 years.
- (2) This would additionally reduce barriers to study abroad as it is often difficult for students to get study abroad courses, many of which are good courses, to fit in either business or minor requirements. Allowing students greater freedom of choice will enhance their opportunities while abroad to explore courses and topics uniquely available at host institutions.
- (3) This would make it easier for Transfer students to focus on business requirements, and finish on time. Many have difficulty graduating on time due to the need to complete the specific requirements prescribed by a minor program, despite having a significant number of completed credits in fields outside of business.
- (4) This approach is consistent with AACSB-accredited peers. A review of 28 peer institutions indicates 24 of the 28 business programs do not require students to complete a minor.
- (5) GSB students who are not pursuing one of the programs described above will continue to be strongly encouraged to pursue a minor. In fact, GSB is partnering with other units on campus to create joint programs within areas that align with GSB Themes and Concentrations such as Sports Management, Sustainability, Data Analytics and Fin Tech.
- (6) There are many examples of programs on UVM’s campus that do not require a minor, for example: Nursing, Engineering, and Bachelor of Science degrees in the College of Arts and Sciences.

VII. Effects of change on:

Students: This change will provide students with greater flexibility to pursue a variety of opportunities within a four-year program.

Faculty: N/A

VIII. Resources to support revision:

There will be no impact on GSB resources as a result of the proposed curriculum change.

IX. Cost estimates:

No additional costs will result from the proposed curriculum change.

X. Schedule:

The change will be implemented beginning with the Class of 2024 in Orientation advising, June 2020.

XI. Evaluation:

There will be no change to the existing curriculum review and assessment process engaged in by GSB as part of ongoing review process by the AACSB accrediting body and participation in the APR process at the University of Vermont.

XII. Endorsements

Please see letters of support for our proposal from College of Arts and Sciences, College of Engineering and Mathematical Sciences, College of Education and Social Services, College of Nursing and Health Sciences and Rubenstein School of Environment and Natural Resources in the Appendix.

Abstract

The Grossman School of Business (GSB) is proposing a curriculum revision to the Bachelor of Science in Business Administration. GSB proposes **to no longer require a minor for business students, but instead make a minor optional (though strongly encouraged)**. The proposal was approved by the full GSB faculty and has the support of both the GSB Board of Advisors and the Grossman Student Advisory Council to the Dean. Letters of support are provided in the full proposal from: UVM's College of Arts and Sciences, College of Engineering and Mathematical Sciences, College of Education and Social Services, College of Nursing and Health Sciences and Rubenstein School of Environment and Natural Resources.

The minor requirement was implemented in the Fall 2011 catalog to replace the previous model of requiring a 4-course General Education Field and a 4-course General Education Discipline. At the time there were only 2 UVM General Education requirements, there are now 5 UVM General Education requirements. Currently Grossman School of Business students complete at least 30 credit hours of course work outside of business through general education and minor requirements. In response to the recent NECHE re-accreditation and the forthcoming increase in general education requirements at UVM, the GSB faculty approved a motion to increase this requirement to 40 credit hours of work outside of business beginning with the Class of 2024.

GSB students take just over half of their courses in GSB. Out of 40 total courses, the GSB curriculum includes:

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- e. 5-6 Minor courses
- f. 1 Learning Community

Under the proposed revision, students would be able to use those 5-6 courses at "e" to pursue an opportunity of their choice such as: a traditional minor, a certificate program, a dual degree, flexibility in study abroad options. These options will be clearly communicated through the advising process by professional and faculty advisors, supported through the Professional Development Series courses. NOTE: these 5-6 courses may not be used to pursue triple Concentrations or triple Themes within GSB. This change will provide students with greater flexibility to pursue a variety of opportunities within a four-year program. There will be no impact on GSB resources and no additional costs will result from the proposed curriculum change. The change will be implemented with the Class of 2024.

A. Department/Program:

GSB Director, Undergraduate Programs:

Amy M. Jones
Dr. Amy Tomas

10-4-19

Date

GSB Curriculum Committee:

Michael D. Tomas III
Dr. Michael Tomas III

10-4-19

Date

GSB Dean:

Sanjay Sharma
Dr. Sanjay Sharma

10/4/19

Date

Curricular Affairs Committee:

Dr. Laura Almstead, Chair
Dr. Laura Almstead, Char

Date

Appendix: Letters of Support from other units



The University of Vermont

August 15, 2019

Curricular Affairs Committee
Faculty Senate
University of Vermont

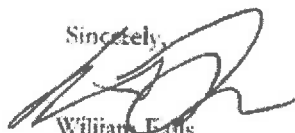
Dear Curricular Affairs Committee,

This letter is in support of the proposal from the Grossman School of Business to remove the requirement that their students take a minor (although students would still be strongly encouraged to do a minor). We recognize the constraints that the required minor can put on certain students in GSB, in terms of reducing flexibility and preventing broad exploration across fields and curricula. We also recognize the importance of continuing to engage GSB students in courses and areas across the university—a value that is reflected both in the fact that GSB will now require their students to take more credits (40 rather than 30) outside their college, and in the fact that GSB will monitor student credit hours in the future to be sure that they are not using the additional flexibility to add additional concentration or theme courses in GSB.

By allowing students to pursue credits outside of GSB through a variety of paths, rather than insisting on a minor, we anticipate that students will be able to take a broader array of classes across units, pursuing interests and experiences and skills that would otherwise be difficult to access. For the College of Arts and Sciences, that may result in a shift of credits within our college, as students move concentrated coursework in particular minors to other parts of our curriculum. But we are confident that we can handle that shift, and will be happy to support students in that exploration.

Please let me know if you have any questions about this letter of support.

Sincerely,



William Falls

Dean, College of Arts and Sciences

COLLEGE OF ARTS AND SCIENCES
OFFICE OF THE DEAN
438 College Street, Burlington, VT 05405
(802) 656-3344 Student Services
(802) 656-3166 Faculty and Administrative Services

Equal Opportunity/Affirmative Action Employer



The University of Vermont

MEMORANDUM

To: Sanjay Sharma, Dean, Grossman School of Business

From: Linda Schadler, Dean, College of Engineering & Mathematical Sciences *L. Schadler*


Re: Grossman School of Business Proposal for Substantial Curriculum Revision

Date: February 20, 2019

CEMS has no objection to the Grossman School of Business' proposal for not requiring a minor for undergraduate business students.



The University of Vermont

TO: Faculty Senate Curricular Affairs Committee
FROM: Scott Thomas, Dean and Professor 
RE: Support for GSB Studies Committee proposal
DATE: March 5, 2019

I am writing in support of the proposal from the Grossman School of Business (GSB) to substantially revise the GSB major by eliminating the current requirement for students to complete a minor as part of their major.

Students will be strongly encouraged to complete a minor; however, in dropping the requirement, the proposed change is intended to create greater flexibility for GSB students to explore a range of opportunities that connect with their theme and concentration areas. The proposal makes the case that the current requirement makes it difficult for some students -- including Honors College, transfer students, ROTC students, Varsity Athletes, and students pursuing study abroad experiences -- to complete their business requirements in four years. The proposal was fully supported by the GSB Advisory Board, the GSB faculty, the GSB Student Advisory Council, and the GSB Undergraduate Studies Committee.

It is my strong hope that many GSB students will continue to broaden their UVM experience by pursuing minors in other areas (including minors in CESS); therefore, I support the overall intent of this proposal.

COLLEGE OF EDUCATION AND SOCIAL SERVICES

Office of the Dean, 309 Waterman Building, 85 South Prospect Street, Burlington, VT 05405-0160

(802) 656-3424 • fax: (802) 656-0855

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The University of Vermont

**COLLEGE OF NURSING
AND HEALTH SCIENCES**

MEMO

TO: Sanjay Sharma, Dean, Business School

FROM: Patty Prelock, Dean, College of Nursing and Health Sciences

Patty Prelock

RE: Making a change in the minor requirement for students in the Grossman School of Business

DATE: 2-16-19

I am writing in support of the GSB Undergraduate Studies Committee recommendation to no longer require a minor for business students, but instead make a minor optional. I appreciate that you will continue to strongly encourage the minor pathway but also recognize that this decision will give your students more choices for selecting course work that aligns well with their ultimate goals. It also supports your students' ability to take a variety of undergraduate certificates offered across campus, ensures they have greater opportunities for study abroad, and facilitates their ability to graduate within four years which is an academic excellence goal for the university. I think your primary goal of providing some flexibility for GSB students in curriculum choice that is relevant to their concentration areas is highly responsive to their needs. Both my Associate Dean and I have reviewed the proposal and have no concerns with your proposed direction and hope that it will facilitate our students in CNHS greater engagement with Business students as they explore relevant coursework across campus.

OFFICE OF THE DEAN

105 Rowell Bldg., 106 Carrigan Dr., Burlington, VT 05405

(802) 656-2216

cnhs@uvm.edu • www.uvm.edu/cnhs



The University of Vermont

Rubenstein School of Environment and Natural Resources

May 2, 2019

Dean Sanjay Sharma
Dean and Professor of Management
Grossman School of Business
CAMPUS

Dear Dean Sharma,

On behalf of the Rubenstein School of Environment and Natural Resources (RSENr), I am writing to express my support for the Grossman School of Business's (GSB) proposal to remove the degree requirement for GSB undergraduates to complete a minor. We agree that the proposal will enhance flexibility for GSB undergraduate students in two important ways: 1) greater ability to increase depth in their Theme and Concentration areas and, 2) greater flexibility for students in HCOL, ROTC students, varsity athletes, and students studying abroad. This will likely lead a greater number of students completing their undergraduate degrees in four years.

A review of the courses taken by GSB undergraduates in RSENr indicates that GSB students engage primarily in courses supporting two minors: Parks, Recreation and Tourism, as well as the cross-campus Sports Management minor. The elimination of a required minor may or may not affect the number of courses taken in RSENr. It is possible that the increased flexibility will actually allow students greater opportunities to take courses across campus, including in RSENr to support the sustainable business pathway.

In summary, we support this change in the GSB undergraduate curriculum and believe there will be advantages for students to both explore new topics and gain depth in Concentration and Theme areas. We suggest that GSB continues to monitor the effect of the change on student course-taking patterns all across campus for at least several years to fully capture any adverse impacts on other units.

Please feel free to contact me if you need additional information.

Sincerely,

Nancy E. Mathews
Dean, Rubenstein School of Environment and Natural Resources



The
UNIVERSITY
of **VERMONT**

COLLEGE OF NURSING AND HEALTH SCIENCES
CURRICULUM PLANNING COMMITTEE
MEMORANDUM

To: Cynthia Forehand, PhD
Dean of Graduate College

From: Elizabeth Adams, AuD
Chair of CNHS Curriculum Planning Committee

Date: May 12, 2019

Subject: HFRS Name Change Proposal

Please find the attached request and rationale for a doctoral program and degree name change from Human Functioning and Rehabilitation Science (HFRS) to Interprofessional Health Sciences (IHS). This name change was initiated by the HFRS program Academic Committee. Per CNHS Bylaws and procedures, given the interdisciplinary nature of the program (cross-college), the proposal was distributed to all CNHS faculty for review and opportunities to provide feedback occurred. The attached proposal has been reviewed by the CNHS Curriculum Planning Committee and was formally approved on 5/9/2019.

Please note that the name change proposal request applies to the name of the program and the name of the degree. There is no impact on the current programmatic offerings or the curriculum.

Please contact me if you have any questions at 656-0205 or elizabeth.adams@med.uvm.edu.

ABSTRACT

PROPOSAL FOR PROGRAM NAME CHANGE:

Current name: Doctor of Philosophy in Human Functioning and Rehabilitation Sciences

Proposed/new name: Doctor of Philosophy in Interprofessional Health Sciences

Program Director: Tiffany L. Hutchins, Ph.D.

Academic Unit: College of Nursing and Health Sciences

Rationale for name change:

The Human Functioning and Rehabilitation Sciences (HFRS) program is a unique interprofessional program that involves faculty from all of the departments/programs in CNHS. The program represents a creative approach to building research expertise related to human motor performance among health professionals who assess and treat motor dysfunction ranging from speech to balance. Most students entering the program will already have a professional degree at the master's or doctoral level and now want to develop research skills to contribute their practice-based perspectives to solving fundamental problems. The overall goal of this graduate program is to promote interprofessional, hypothesis-driven research across fields relevant to the health sciences. The current name neither accurately reflects nor communicates the nature, goals, and philosophy guiding the doctoral program. It has proven a hindrance to current graduate students in communicating the nature and focus of their professional and research goals. Moreover, the current name has been identified by faculty and students as a barrier to recruitment. The requested new name, Interprofessional Health Sciences (IHS), accurately reflects the intent of the program and its curriculum. No changes to the curriculum are planned with this name change other than to change the course prefix to courses from HFRS to IHS.



October 2, 2019

Patricia Prelock, PhD
Interim Provost
University of Vermont
304 Waterman Building
Burlington, VT 05405-0160

Re: Name change request for PhD in Human Functioning and Rehabilitation Science to PhD in Interprofessional Health Sciences

Dear Provost Prelock,

The Graduate College, in conjunction with the College of Nursing and Health Sciences (CNHS) is requesting a change in the name of the PhD program in Human Functioning and Rehabilitation Science (HFRS) to the PhD in Interprofessional Health Sciences (IHS). Support for this name change of the college-wide HFRS program includes the program and its students, the CNHS College Curriculum Committee, the Graduate Executive Committee and the Deans of CNHS, the Graduate College and the Larner College of Medicine, which provides some of the core curriculum.

The HFRS program is a unique interprofessional program that involves faculty from all of the departments/programs in CNHS. The program represents a creative approach to building research expertise related to human motor performance among health professionals who assess and treat motor dysfunction ranging from speech to balance. Most students entering the program will already have a professional degree at the master's or doctoral level and now want to develop research skills to contribute their practice-based perspectives to solving fundamental problems. The program answers a societal call to integrate across disciplines and professions to provide meaningful solutions in a real world context. The overall goal of this graduate program is to promote interprofessional, hypothesis-driven research across fields relevant to the health sciences.

The HFRS name has created confusion for applicants, some of whom think it is a PhD in Physical Therapy and others of whom don't understand how the name reflects the focus of the program. The nature, goals and philosophy of the program are obscured by the name, which is a deterrent to recruitment. The requested new name, Interprofessional Health Sciences, accurately reflects the intent of the program and its curriculum. No changes to the curriculum are planned with this name change other than to change the prefix to courses from HFRS to IHS. This new prefix is already approved by the Registrar.

I ask that you please forward this proposal on to the Faculty Senate for review.

Sincerely,

A handwritten signature in black ink, appearing to read "C. Forehand".

Cynthia J. Forehand, PhD
Dean of the Graduate College

DATE: 4/11/2019

To: CNHS Curriculum Planning Committee

From: Tiffany L. Hutchins, Ph.D., Program Director, HFRS

RE: Doctoral program name change

PROPOSAL FOR PROGRAM NAME CHANGE:

Current name: Doctor of Philosophy in Human Functioning and Rehabilitation Sciences

Proposed/new name: Doctor of Philosophy in Interprofessional Health Sciences

NOTE: The arguments and proposal that follow are the product of a series of discussions that have taken place at various department, program, college, and university levels over the last several months. Various focus and consulting groups comprising different constituencies of stake-holders have been solicited and engaged. This includes Deans, CNHS Chairs, CNHS Program Directors, Graduate Faculty, the Office of Continuing and Distance Education (CDE) as well as the graduate students who are currently enrolled in the HFRS program.

Rationale for name change:

The current name (Human Functioning and Rehabilitation Sciences; HFRS) neither accurately reflects nor communicates the nature, goals, and philosophy guiding our doctoral program. It has proven a hindrance to our current graduate students in communicating the nature and focus of their professional and research goals. As one student shared in a recent graduate seminar “I’m frustrated having to always explain to everyone that I’m not a physical therapist.” Moreover, the current name has been identified by faculty and students (within and beyond) the College of Nursing and Health Sciences (CNHS) as a barrier to recruitment. This is evident in the data from the 2018 applications showing that (when recruits who were actively solicited by faculty are removed) nearly 100% (i.e., all but one) of the remaining applications to our program came from students of Rehabilitation and Movement Sciences (RMS; e.g., movement science, exercise science, athletic training, physical therapy). The data for 2019 applications are even more skewed with 100% of applications coming from RMS when applications from two students who (again) were actively solicited are removed (one from neuroscience and one from bioengineering; see attached document). What this suggests is that it is prospective students from RMS, *but not other disciplines*, who identify with the name ‘Human Functioning and Rehabilitation Science’. This makes sense when we consider that the terms ‘human functioning’ and ‘rehabilitation science’ have great currency in RMS but this is simply not true to the same degree for the other health professions (e.g., consider nursing, biomedical health sciences, nutrition, psychology, special education, health policy to name a few).

These are critical challenges for a program that requires engagement from faculty and students representing diverse fields (including but beyond RMS) to be successful and sustainable and the current name diminishes the program’s ability to deliver on its stated mission: to provide students with rich opportunities for interprofessional experiences in the classroom and beyond. If the status quo prevails, our program is at further risk for severe imbalance in the fields represented in our interprofessional program. The detriment to the program and the college are grave and predictably include:

1) a lack of participation among faculty in various departments who, *if they felt the name of the program represented them and their students more accurately*, would otherwise serve as mentors and work with our candidates in a variety of rolls (e.g., rotation supervisors, grant writing qualifying exam committee members and advisors, dissertation advisors, GRA advisors). This in turn will impact faculty members' scholarly productivity and their ability to advance their own research agenda.

2) an inability to identify a sufficient number of mentors in RMS; in short, we can predict that RMS will be awash with doctoral candidates but that in other departments, the number will be slight or none. This outcome betrays the original intent and design of our program and is inherently inequitable to the departments comprising CNHS.

Rationale for proposed/new name:

As stated in the handbook, our program is intended as an “interprofessional doctoral program [that] will facilitate the generation of new knowledge by providing an academic training platform for research collaboration across the professional health disciplines represented by the College of Nursing and Health Sciences (CNHS)” (p. 5). Moreover, our stated goals (p. 5) are:

1. To prepare students as researchers and scientists, including how to contribute to evidence-based practice.
2. To prepare students to take an interdisciplinary approach to education, research, and practice.
3. To prepare students in innovative instruction and assessment, as well as to enhance inter-professional education and align it with changes in delivery of health and human services.

In short, the overall goal of this graduate program is to promote *interprofessional* research across fields relevant to the health sciences within a dynamic systems framework. Students are expected to understand, create, and undertake *interprofessional*, hypothesis-driven approaches to research, and promote the translation of findings to practice. These goals are achieved not only by educating students in current philosophies of health and human service research and education, but by developing their competencies for *interprofessional* scholarship.

Why ‘Interprofessional Health Sciences’ as opposed to ‘Interdisciplinary Health Sciences’?

Although these two terms are related and sometimes used interchangeably, most professionals commenting on the matter argue that there are important differences and that they should not be treated as synonyms (e.g., Parse, 2015). Moreover, the term ‘interprofessional’ has recently gained considerable currency and appears to be the favored term because of its accuracy for communicating a particular pedagogical approach and philosophy (Buring et al., 2009; Cahn, 2017): one that is foundational to the goals of our program as articulated in our handbook:

“The College of Nursing and Health Sciences developed the degree program for the Doctor of Philosophy in Human Functioning and Rehabilitation Science in response to national initiatives for restructuring health care education and encouraging research in the health care professions. The program is also based on the movement in health care toward the dynamic-systems approach of the World Health Organization’s International

Classification of Functioning, Disability and Health (the ICF model). This model *prioritizes inter-professional research that goes beyond interdisciplinary efforts* [italics added] as our students learn side by side across unique but related health disciplines and our faculty address the contextual nature of health conditions as they affect body functioning, activity performance, and societal participation” (p. 4).

Why ‘Interprofessional Health Sciences’ as opposed to ‘Health Sciences’?

For some health professionals, interprofessional education and practice feature large in their training, clinical experience, and philosophy of care. This might lead some to conclude that the use of the term “Interprofessional” in “Interprofessional Health Sciences” is understood, unnecessary, and therefore redundant. Yet, the term ‘interprofessional’ does important conceptual heavy lifting and most accurately communicates the goals of our program while distinguishing it from a different kind of educational focus and preparatory experience. Specifically, “Health Sciences” requires only a traditional understanding of health sciences (i.e., the study, research, and knowledge of health) thus failing to capture the essence of our program: the application of that knowledge through interprofessional collaboration so as to improve health and better understand human function across multiple domains and levels of analysis.

Finally, a recent market analysis conducted by the Center for Distance Education (February, 2019) concluded that although the broad Ph.D. title of “Health Sciences” would accrue more internet searches compared to terms that included an additional word (e.g., interdisciplinary, interprofessional), this carried the disadvantage of including a large proportion of misses (attracting potential students who do not fit the program and missing potential students who do). In short, the term “Health Sciences” is broad and for exactly that reason, it lacks precision. The team at CDE further counseled us that – in the event of a fall-off in applications from RMS disciplines – we would work with them to adjust our key word search criteria to reach that (indeed all) target constituency(ies). In addition, an effort is currently underway to describe the specializations available in our program and the PhD academic committee is developing language for all of our outreach media to specify these *Optional Concentration areas* in Nursing, Communication Sciences & Disorders, Rehabilitation and Movement Sciences (which can alternatively be named HFRS if so desired), and Biomedical Health Sciences (see https://www.uvm.edu/rsenr/graduate_programs for an example of how our concentrations will be shaped and how this information will be presented).

Further considerations relevant to our argument for a name change to “Interprofessional Health Sciences” Ph.D. are offered in a letter written (collaboratively) by the current students in our program (see attached).

Proposal to change the following:

Name of Graduate Program

Name of Tagged Graduate Degrees

Subject Prefix (IHS; this is already approved by the registrar)

VOTE of HFRS Academic Committee: March 22, 2019

Tiffany L. Hutchins Ph.D. Communication Sciences & Disorders

Laura Lewis, Ph.D. Nursing

Dimitry Kremmentsov, Ph.D. Biomedical Health Sciences

Sambit Mohapatra, Ph.D. Physical Therapy

All in favor 4

All opposed 0

Abstentions 0

Recusals 0

References

Buring, S., et al. (2009). Interprofessional education: Definitions, student competencies, and guidelines for implementation. *American Journal of Pharmaceutical Education*, 73(4), 1-8.

Cahn, P. (2017). Seven dirty words: Hot-button language that undermines interprofessional education and practice. *Academic Medicine*, 92(8), 1086-1090.

Parse, R. (2015). Interdisciplinary and interprofessional: What are the differences? *Nursing Science Quarterly*, 8(1), 5-6.

Appendix A: 2019 Program Data

List of 2019 PhD Applicants by major:

Student 1: EXMS

Student 2: Bioengineering

Student 3: EXMS

Student 4: Neuroscience (UVM undergrad)

Student 4: PT

Student 5: EXMS

Student 6: EXMS

Student 7: Athletic training

Current Number of Participating Faculty Mentors by Department:

CSD: 2

RMS: 3

Nursing: 0

BHS: 0

Appendix B: PhD Student Letter of Support

February 12, 2019

Dear CNHS PhD Advisory Committee,

The students of the CNHS PhD program write this letter to express our thoughts and opinion regarding the proposed program title change. Collectively, we feel that the current title of our program, Human Functioning & Rehabilitation Sciences, may under represent the purpose and function of our program. The overarching goal of our program, as we understand, is to develop researchers with a broad view of the delivery of healthcare within an interprofessional healthcare structure. We feel that our program title should be inclusive of all disciplines, from benchtop to hands-on patient care, and project collaboration for the purpose of improving patient outcomes.

Given the choice between “Interprofessional Health Sciences” and “Health Sciences,” we are unanimous in the selection of “Interprofessional Health Sciences” as our program title. These two titles are entirely different. “Interprofessional Health Sciences” is not redundant. “Health Sciences” is the study, research, and understanding of science dealing with human health, especially as it relates to the improvement of health and understanding human function. “Interprofessional” is *how* we study, research, and practice health sciences- in a collaborative and interdisciplinary manner. By including “interprofessional” in the program title, we are signifying the direction in which health sciences is, and should be, going. As a group of healthcare professionals, we all must learn what each profession offers in order to improve the care we provide to individuals and their families. Being truly interprofessional is about learning and practicing together. In order to deliver this message, we must convey it clearly through our program title so that others understand our course of study, research, and practice.

At this time, the CNHS Ph.D. program is comprised of two clinicians from Communication Sciences and Disorders (CSD) and two clinicians from Physical Therapy (PT). Our hope is that changing our program title will allow other students, beyond the disciplines of CSD and PT, to feel encouraged to apply. Each of us is unique in our research interests, as well as in our contributions to the interprofessional nature of health sciences. To illustrate:

Claudia is working with speech-language pathologists, physical therapists, and engineers to study motor control and learning with the goal of applying it to children with motor speech disorders. She wants to use this information to enhance interventions in order to decrease anxiety and improve quality of life for these children.

Ashley is working with speech language pathologists and psychologists to study memory and social cognition in children with autism spectrum disorder. Her goal is to develop interventions

aimed at enhancing quality of life in these individuals through collaboration between speech language pathologists and mental health clinicians.

Becky is working in the area of oncology rehabilitation to better understand function and quality of life for patients following cancer treatment. She is collaborating with medicine and nutrition, as well as her home discipline – physical therapy, to optimize post-cancer treatment protocol through physical activity and dietary guidance. She anticipates improved patient function and quality of life as compared to standard of care.

Mariana is working with physical therapy, psychology, and other healthcare professionals to develop a screening tool to identify barriers and facilitators to physical activity. Her goal is create a screening tool that can be used across multiple settings and help initiate the conversation of physical activity.

Our goal is to be members of a team and we want to attract care providers and collaborators within, but also beyond, the College of Nursing and Health Sciences. For example, psychologists, neuroscientists, and bioengineers play critical roles in how we approach, deliver, and provide care (think about the use of a causal model in understanding diseases, disorders, and disabilities!). It is worth noting, however, that these professionals are not traditionally thought of as key players in “health sciences.” Being interprofessional welcomes these collaborations and changes the culture of how we study, research, and practice together for the betterment of humanity. If we want to help improve the lives and health of others, we need to make it known *how* we plan to do this-- *interprofessionally*.

Sincerely,

Claudia Abbiati, M.S., CCC-SLP

Ashley Brien, M.S., CCC-SLP

Rebecca H. Ouellette-Morton PT, DPT, MS, CLT

Mariana Wingood DPT, PT, GCS, CEEAA

Human Functioning & Rehabilitation Sciences Ph.D. Students

Endorsements for Proposal to Change the Name of the College of Nursing and Health Sciences College-wide Human Functioning and Rehabilitation Science Doctoral Program to Interprofessional Health Sciences.

A. Chair of the College of Nursing and Health Sciences Curriculum Committee:

See cover memo 5/12/19
Elizabeth Adams, AuD Date

B. Interim Dean of the College of Nursing and Health Sciences:

[Signature] 8-26-19
Scott L. Thomas, PhD Date

C. Dean of the Larner College of Medicine (which provides a portion of the core curriculum):

[Signature] 8-26-19
Richard L. Page, MD Date

D. Graduate College Executive Committee:

[Signature] 9-30/19
Cynthia Forehand, PhD Date

E. Dean of the Graduate College:

[Signature] 9/30/19
Cynthia Forehand, PhD Date

F. Chair, Faculty Senate Curricular Affairs Committee:

Laura Almstead, Ph.D. Date

G. Interim Provost of the University of Vermont:

Patricia Prelock, Ph.D. Date

H. President of the University of Vermont:

Suresh Garimella, PhD Date

I. Board of Trustees of the University of Vermont:

Chair David A. Daigle, MBA Date