

Graduate Interdisciplinary Specialization in Biomedical Clinical and Translation Science

Rationale

Major concerns have been expressed at the perceived loss of talent in translational and clinical sciences over the past 25 years. Basic science leaders note increasing difficulty in finding talented, high-quality scientific collaborators who understand human disease and can both translate and clinically apply insights from basic science. However, exploding clinical services responsibilities and shrinking financial margins at academic health institutions have limited protected research time and curtailed the mentoring of young investigators. [1] Additionally, the National Center for Research Resources (NCRR) has developed fourteen Core Competencies (see below) in Clinical and Translational Research that they have determined as critical in the training of future researchers. In an effort to help close the gap of trained clinical and translational scientists and provide a coordinated academic curriculum in the Core Competencies, a new Graduate Interdisciplinary Specialization in Biomedical Clinical and Translational Science (GISBCTS) is proposed.

The GISBCTS is a program that the Colleges of Medicine, Optometry, Dentistry, Nursing, Pharmacy, Public Health, and Veterinary Medicine, the School of Allied Medical Professions, the Department of Psychology, and the Biophysics Graduate Program at OSU have developed to provide training for graduate and professional students. The goal of GISBCTS is to prepare students to be actively engaged in the field of clinical and translational science through academic training and research. The GISBCTS offers students advanced educational and training opportunities in the Core Competencies focused on clinical and translational science. The program allows graduate and professional students an opportunity to gain specific expertise in both clinical and translational research through both required and elective coursework. The specialization's core course focuses on the basic components of clinical and translational science, while the electives allow students to pursue topics across the other health sciences colleges for an interdisciplinary experience. Students are exposed to a broad range of settings and must successfully complete at least 18 credit hours of course work from the Master List of Courses in order for the Specialization to be noted on their transcript.

Objectives of the Graduate Interdisciplinary Specialization in Biomedical Clinical and Translational Science

Students will:

- Develop skills in designing clinical and translational research studies.
- Apply statistical procedures to clinical and translational research problems
- Develop skills for the communication of the scientific concepts and research questions in one's own discipline to experts in other disciplines and to the public at large
- Understand how to involve the community in clinical and translational research
- Build interdisciplinary/intradisciplinary/multidisciplinary teams to study clinical and translational research issues.

Specialization Guidelines

- Students must be enrolled in a graduate or professional program at OSU
- Units needed to complete the GISBCTS require at least 5 courses and 18 credit hours minimum with a maximum of 23 credit hours

- At least 14 credit hours of coursework must come from outside the student's home college/program
- Credit hours can include work already required as part of the student's degree program

Curriculum Requirements

- All students enrolled in the GISBCTS must take PH 795: Topics in Clinical and Translational Science. This is a 2 credit hour course offered each quarter by the College of Public Health. It is recommended, but not required, that this course be taken first.
- Some of the participating colleges have internal procedures that are required to enroll in their courses. Please see each course for specific information about enrolling
- Students must take at least one course from each of the Core Competency Clusters. The Competency Clusters are based on the NCRR Core Competencies for Clinical and Translational Research. There are a total of 13 competencies that have been grouped together to form four clusters.

Core Competencies

- I. Identify major clinical/public health problems and relevant translational research questions.
- II. Identify/interpret/critique literature/assess state of knowledge regarding problem.
- III. Design and write protocol for clinical/translational research study for peer review (Study Design)
- IV. Study Methods/Design/Implementation (Research Implementation)
- VIII. Conduct Ethically Responsible Research
- V. Laboratory, Clinical, and Population Research Methods (Sources of Error)
- VI. Statistical Methods and Analysis
- VII. Informatics
- IX. Scientific Communication Skills and Dissemination (Scientific Communication)
- X. Population Diversity and Cultural Competency (Cultural Diversity)
- XIV. Community Engagement
- XI. Translational Teamwork
- XII. Leadership and Professionalism
- XIII. Cross-disciplinary Training and Mentoring

Competency Clusters

Research Methods (I, II, III, IV, VIII)	Analysis, Statistics, and Informatics (V, VI, VII)	Community and Communication (IX, X, XIV)	Leadership and Training (XI, XII, XIII)
AM892: Evidenced Based practice	Nursing 914: Principles of Measurement in Health Related Sciences	AM 895.01: PhD Research Seminar	AM 830: Leadership and Policy in Allied Health
AM 895: PhD Research Seminar	Psych 826: Statistics in Psychology	DENT 884: Current Issues in Oral Biology	
HBHP 824: Program Evaluation	Psych 827: Analysis of Variance	IBGP 707: Fundamentals of Grant Writing I	

Research Methods (I, II, III, IV, VIII)	Analysis, Statistics, and Informatics (V, VI, VII)	Community and Communication (IX, X, XIV)	Leadership and Training (XI, XII, XIII)
HBHP 827: Program Planning and Implementation	Psych 828: Correlational Analysis	IBGP 708: Fundamentals of Grant Writing II	
HSMP 870.01: Health Care Outcomes Evaluation	PUBHBIO 607: Practical Biostatistics for Biomedical Laboratory Researchers	IBGP 709: Statistical Aspects of Grant Writing	
HSMP 871: Health Services Research	STAT 528: Data Analysis I	Nursing 710: Health Literacy	
IBGP 805.01: Research Techniques & Resources	STAT 529: Data Analysis II	HBHP 821: Community Health Assessment	
Nursing 912: Introduction to Methods of Nursing Science	STAT 530: Data Analysis III	PUBH 850: Fundamental Determinants of Population Health and Implications for Public Health Research and Practice	
Nursing 917.01: Seminars in Determinants of Health		PUBH 850: Social Ecological Strategies in Prevention	
Nursing Practice 953: Clinical Effectiveness and Translation in Clinical Science		Vis Sci 740: Survival Skills for Graduate Students	
PUBH 850: Research Methods in Public Health		Vis Sci 797: Grantsmanship	
PUBHBIO 701: Design & Analysis of Studies in the Health Sciences I			
PUBHBIO 702: Design & Analysis of Studies in the Health Sciences II			
PUBHEPI 715: Principles and Procedures for Human Clinical Trials			
Vis Sci 796: Ethics in Biomedical Research			
Vis Sci 799: Assessing the Literature			

How to Enroll:

The Graduate Interdisciplinary Specialization in Clinical and Translational Science is available to all graduate and professional students at The Ohio State University. Students must apply to enroll in the Specialization in Biomedical Clinical and Translational Science (see application

form below), must follow the criteria developed by the Graduate School, and successfully complete the required and elective course work specified.

Students should work with their departmental advisor to determine how best to incorporate the Specialization into their program of study. The advisor's signature is required prior to submission of the application to the Center for Clinical and Translational Science, which supports the administrative aspects of the Specialization.

At least 18 credit hours of graduate course work from the Master List of Courses are required including the core course and at least one course from each of the four Core Competency clusters.

Once student and advisor signatures are affixed, the original form should be forwarded to Stephanie Vecchiarelli in the Center for Clinical and Translational Science at the address below. Each application that meets the admissions criteria will be forwarded to the Graduate Studies Committee (GSC) for final admissions decisions. Once the GSC has made a decision, the student will be notified.

The student must adhere to the curriculum for the Specialization in Biomedical Clinical and Translational Science. If changes in the approved curriculum are made, the student must complete a new Graduate Interdisciplinary Specialization Program Form and once again gain approval.

Stephanie Vecchiarelli, Program Manager
Center for Clinical and Translational Science
Research Education, Training, and Career Development
The Ohio State University
Prior Health Sciences Library, Suite 205
376 West 10th Avenue
Columbus, Ohio 43210
Phone: 614-293-2356
Fax: 614-293-4039

The Application

Students must apply to enroll in the GISBCTS through the Research Education, Training, and Career Development Program in the Center for Clinical and Translational Science. To apply, a student must be in good academic standing and do the following:

1. Complete the application form and have it signed by the faculty advisor.
2. Obtain a letter of support from the faculty advisor.
3. Submit a personal statement that indicates why he/she is interested in the Specialization, and how the Specialization will contribute to their future academic and/or career goals.

Application deadline: Applications will be accepted on a rolling basis.

It is expected that all students who meet the criteria and follow the application guidelines will be accepted into the GISBCTS. There will not be a cap to the number of students admitted to the program.

GISBCTS Management

Graduate Studies Committee

Membership: The GISBCTS GSC will be composed of Graduate Studies Chairs, faculty representatives, and student representatives from the Colleges/Departments participating in the GISBCTS. As new disciplines are included in the GISBCTS, a representative from the College/Department will be added. If a committee member chooses to resign from the committee, another member from the same College/Department will be selected. This committee currently has the following membership:

- Philip Binkley, MD, MPH, CCTS/College of Medicine/College of Public Health, Chair
- Karla Zadnik, DO, PhD, College of Optometry, Co-chair
- Jane Case Smith, EdD, School of Allied Medical Professionals
- Virginia Sanders, PhD, College of Medicine
- Anil Pradhan, PhD, Department of Astronomy
- Amy Ferketich, PhD, College of Public Health
- Linda Bernhard, PhD, College of Nursing
- Cynthia Carnes, PharmD, PhD, College of Pharmacy
- John Sheridan, PhD, College of Dentistry

Dr. Binkley will chair the committee and serve as the liaison between the CCTS and GSC. Dr. Karla Zadnik will serve as the co-chair of the committee.

Role: The GISBCTS Graduate Studies Committee (GSC) has been responsible for designing the program and detailing the courses that will be offered in the GISBCTS. Ongoing, this committee will serve to monitor the progress of the academic program and make refinements, as necessary.

- Curriculum: It is expected that additional courses and/or Colleges/Departments will be added to the GISBCTS. The GSC will make recommendations and approve adding or removing courses from the GISBCTS curriculum.
- Admissions: In addition to curriculum decisions, the GSC will oversee admissions procedures. They will make recommendations and decisions on any changes to the admissions process. Additionally, they will make final decisions on admission recommendations for all students who apply to the program. The GSC also will make decisions regarding ongoing enrollment for students who do not adhere to the GISBCTS curriculum.

In addition to curriculum and admissions duties, each committee member will serve as liaisons to their respective Colleges/Departments and the GISBCTS. They will promote the program as well as respond to staff and student inquiries.

Administrative Support

A Program Manager in the CCTS will provide administrative support to the program, as needed, including coordinating the application process and answering student inquiries. Specific academic questions will be referred to the GSC co-chairs, as needed.

Core Course:

Course: PUBH-HLTH 795 Topics in Clinical and Translational Science (2 units)

Quarter: AU, WI, SP R 12:30-2:18

Instructor: Philip Binkley, MD, PhD

****Please note that this is a required course for the Graduate Interdisciplinary Specialization in Clinical and Translational Science.****

Students need to enroll in the GISBCTS program before trying to register for this class as it requires instructor permission. Once you have enrolled in the GISBCTS program your name will be given to the instructor and you will be permitted to register.

This 10-week course will provide a broad overview of the NCCR Core Competencies as well as be a major focus for interaction among all of the students from diverse academic backgrounds. The seminar will allow students pursuing different emphasis areas in clinical and translational science to design transdisciplinary research programs or solutions to a specific biomedical research questions.

Master List of Courses:

Information related to specific course offerings was obtained directly from departments and course instructors and may change during the academic year. Please check with the Center for Clinical and Translational Science at 293-2356 (or [e-mail](#)) to be sure specific courses will be offered as indicated.

Allied Med 830 - Leadership and Policy in Allied Health

This course will help students develop an in depth understanding of the laws and policies that influence higher education and the allied health professions. Students will gain a comprehensive understanding of 1) the role of faculty in policy development and leadership within the University setting, 2) the governmental and legal forces that have defined allied health professional practice, and 3) the role of faculty to advocate at state and federal levels, consult with governmental agencies, change and improve health care systems, and assume leadership roles within their professions. They will analyze and discuss leadership issues in academic institutions and professional organizations, with emphasis on the role of the individual in leadership. As a context for leadership, students will research federal and state laws and regulations that affect allied health professions. They will analyze how laws become regulations and policies that influence local health care systems. Given the particular laws and policies that define the regulations for a particular area of practice, students will analyze how allied health professions have responded. They will identify barriers to effective health and human services and develop strategies to optimize the effectiveness of professional practice.

(WI; 3; Prerequisite: Instructor permission)

Allied Med 892 Evidence Based Practice

Course objectives are: 1) Identify the most valid and relevant research reports for analysis of a clinical question, 2) Analyze research on the specificity and sensitivity of measures to select the most appropriate measures given a clinical problem. 3) Critically appraise clinical trials; 4) Synthesize clinical trials to reach a bottom line; 5) understand how synthesized reviews and

meta-analyses are used to create clinical guidelines; 6) Discuss how research evidence is used to support intervention program in the real world.

(SP; 3; Prereq: Instructor permission)

Allied Med 895.01 - Ph.D. Research Seminar: Writing, Reviewing, and Publishing Journal Manuscripts

Faculty and students present, discuss, critique, and debate interdisciplinary topics in Health and Rehabilitation Sciences research and teaching: Students develop skills in analyzing, discussing, and synthesizing health and rehabilitation research. Students present their own scholarship to other graduate students and faculty. The objectives are that students will: 1) apply tenets of good journal manuscript writing style, 2) understand manuscript submission, review, and publication process, 3) critically review of journal manuscript, apply the Uniform requirements for manuscripts submitted to biomedical journals. This course is graded S/U.

(SU, AU, WI, SP; 1-2 units; Prereq: Instructor permission)

Allied Med 895.01 - Collaboration in Health and Rehabilitation Sciences

Faculty and students present, discuss, critique, and debate interdisciplinary topics in Health and Rehabilitation Sciences research and teaching: Students develop skills in analyzing, discussing, and synthesizing health and rehabilitation research. Students present their own scholarship to other graduate students and faculty. The objectives are that students will: 1) identify and describe the varied disciplines that comprise the field of rehabilitation science, 2) develop skills in critical reading and presenting scholarship, and 3) integrate concepts related to distinct areas of rehabilitation. This course is graded S/U.

(SU, AU, WI, SP; 1-2 units; Prereq: Instructor permission)

Den 884: Current Issues in Oral Biology

Covers multiple topics of current oral health concerns.

(SU, AU, WI, SP; 3 units)

HBHP 821: Community Health Assessment

Health educators often are responsible for assessing communities in terms of their resources, needs, and health outcomes. The goal of this course is to help develop the practical knowledge and skills to conduct such assessments and to understand the range of goals of, and approaches to community health assessment.

(WI; 2; Prereq: Grad standing in Pub Hlth or permission of instructor.)

HBHP 824: Program Evaluation

This course will focus on planning useful program evaluations, with emphasis on meeting the needs of program administrators and planners. Coverage includes process and outcome evaluation questions and methods; qualitative and quantitative data collection approaches; and ethical considerations.

(SP; 4; Prereq: Grad standing in Pub Hlth or permission of instructor.)

HBHP 827: Program Planning and Implementation

In this course students will develop the skills required to plan programs that address public health problems for defined populations in a variety of settings. This course will provide

students with the opportunity to develop a theory-based, health promotion program that is supported by the literature. In addition, students will learn how to review the literature and deliver a professional presentation.

(WI; 4; Prereq: 820 or permission of instructor.)

HSMP 870.01: Health Care Outcomes Evaluation

This course introduces students to measurement and evaluation issues associated with patient-centered pharmaceutical outcomes and quality of care studies, an increasingly important component of present-day pharmaceutical research. The focus will be application of measurements, rather than development. Selected topics that will be covered in this class include development of the discussion of frameworks for evaluation of health outcomes framework and quality of care, outcomes measures, risk adjustment of health outcomes, technical and practical issues with measurement and estimation, and empirical examples of health care outcomes research. Outcome and quality measures that will be covered include generic and condition-specific health status measures, satisfaction, patient trust, and patient adherence.

(2-4 units: Prereq: Instructor permission)

HSMP 871: Health Services Research

This course provides a broad introductory overview to the field of health services research in the United States and the role of health services research in improving health care delivery and, ultimately, the health of Americans.

(WI; 2; Prereq: PUBHBIO 702 and PUBHEPI 710 or Instructor permission)

IBGP 707: Fundamentals of Grant Writing 1

The overall goal of this course and its sequel (Fundamentals of Grant Writing-II) is to provide graduate students with the background information for, and practical experience in writing research grant proposals.

(AU; 2; Prereq: Instructor permission)

IBGP 708: Fundamentals of Grant Writing II

The educational goal of this course is to provide graduate students with the background information for, and practical experience in reviewing research grant proposals. As Fundamentals of Grant Writing-2 is a sequel of Fundamentals of Grant Writing-1, at the beginning of this course students will already have a general idea about the administrative structure and process of grant reviewing, and will have submitted their grant application to the coordinators of the course. During this interactive mock review process the graduate students will review grant applications and learn to be critical, objective, and fair. They will write reviews for three grant applications and score them. They will learn to express their scientific ideas and knowledge and participate in a scientific debate. They will have to make difficult and sometime painful decisions, and they will learn to overcome the psychological impact of the "summary statement". Finally, they will be exposed to the electronic grant application submission and review as the NIH moves in this direction. At the end of the course, graduate students will have had a real life experience, and will be better prepared for the competitive field of research funding.

(SP; 2; Prereq: Instructor permission)

IBGP 709: Statistical Aspects of Grant Writing

The goal of this course is to provide the student training and experience in interacting with statisticians to obtain their input into statistical aspects of a research grant proposal.

(WI; 1; Prereq: IBGP 707)

IBGP 805.01: Research Techniques & Resources

This course was designed to prepare the students for their laboratory rotations and dissertation research by covering three general areas: (1) Laboratory safety; (2) Commonly used laboratory techniques; (3) Research resources available to the students.

(SU; 6; Must register for both labs and lectures)

Nursing 710: Health Literacy

Examine and analyze issues of low health literacy, including populations at risk, research, measurement tools, writing in plain language; health communication techniques; and organizational approaches.

(AU, SP; 3; Prereq: Graduate student in Health Professions)

Nursing 912: Introduction to Methods of Nursing Science

Survey of research methods used to describe, explain, predict, and manipulate phenomena relevant to the discipline of nursing. Emphasis is placed on the systematic development of nursing knowledge.

(WI; 5; Prereq: Instructor permission)

Nursing 914: Principles of Measurement in Health Related Sciences

Study of measurement principles for concepts relevant to nursing science. Emphasis is on psychobiobehavioral measurement and measurement of variables for the study of health disciplines.

(SP; 5; Prereq: Nursing 912 or instructor permission)

Nursing 917.01: Seminar in Determinants of Health

Integration of theoretical and methodological approaches to the study of Psycho-bio-behavioral phenomena underlying determinants of health.

(AU; 3 credit seminar; optional 2 credit lab; Prereq: Nursing 916 or instructor permission)

Nursing Practice 953: Clinical Effectiveness and Translation in Clinical Science

Theory and survey of methods of critical appraisal of clinically relevant nursing research related to clinical effectiveness and translational science. Emphasis is placed on the systematic appraisal and utilization of clinical knowledge.

(SP - Distance learning; 4; Prereq: Instructor permission)

PSYCH 826: Statistics in Psychology

Basic concepts of descriptive and inferential statistics; includes estimation, hypothesis testing, and introductory treatment of analysis of variance, correlation and regression, and non-parametric techniques.

(4; Prereq: 320, or Stat 145, or equiv and grad standing in psych, or permission of instructor)

PSYCH 827: Analysis of Variance

Statistical inference in analysis of variance designs; basic concepts and procedures in one-way designs; factorial, repeated measures, randomized blocks, mixed models designs; procedures for planned and post hoc comparisons.

(4; Prereq: 826 or equiv)

PSYCH 828: Correlational Analysis

Correlation and regression techniques for quantitative and qualitative data analysis; simple linear regression and correlation, multiple linear regression, nominal scales, interactions; other related multivariate methods; use of computer programs.

(4; Prereq: 827 or equiv)

PUBH 850: Social-ecological strategies in prevention

This course will introduce students to the social-ecological approach to prevention in a public health context. Course material will contrast the social-ecological approaches to prevention with individual-based approaches. The historical and current application of this framework will be demonstrated in several areas of public health. This course is intended for CPH students who have an interest in prevention, social-ecological theory or population-based behavior change strategies.

(SP; 4; Prereq: Grad standing in Pub Hlth or permission of instructor.)

PUBH 850: Fundamental Determinants of Population Health and Implications for Public Health Research and Practice

An important goal of this course is to help students understand how to use their knowledge of the fundamental determinants of health to address important public health problems. To this end, course lectures will critique how the field of public health currently addresses population health and health disparities. In addition, we will discuss a theoretical framework and methodology to incorporate the social and economic context into public health interventions.

(AU; 4; Prereq: Grad standing in Pub Hlth or permission of instructor.)

PUBH 850: Research Methods in Public Health

This course provides an overview of research methods that are commonly used in public health research. The course will address topics such as selecting a theoretical framework, choosing a research design, conducting observational and experimental research, measurement and sampling issues, program evaluation, basic analytic concerns of observational and experimental research, scientific writing, and study proposal preparation. An important goal of this course is to help students develop the necessary skills to read, critique, design, and conduct high quality scientific research in health behavior and, more broadly, public health.

(SP; 4; Prereq: Grad standing in Pub Hlth or permission of instructor.)

PUBHBIO 607: Practical Biostatistics for Biomedical Laboratory Researchers

This is a five week summer course which will provide an introduction to issues in experimental design and statistical methods appropriate for the basic sciences. Considerable attention will be given to issues which are most relevant to experiments, such as replication, randomization, selection of controls, data transformation, and calibration. Topics will be motivated by real data sets from biological experiments. Since this is a four credit hour course taught over five weeks,

students will need to devote approximately 7 hours per week for lecture and should expect to spend between 14-21 hours per week outside of class on assignments.

(SU; 4: Prereq: Instructor permission)

PUBHBIO 701: Design and Analysis of Studies in the Health Sciences 1

This course is intended to provide students with comprehensive introduction to the principles of modern biostatistical methods and their applications in biomedical research. The course will cover material from basic data summary methods to formal statistical analysis on estimation and hypothesis testing, with an emphasis on the understanding of methodologies from statistical inference perspective. Application to real data from various studies in public health and clinic research will be used to illustrate the material.

(AU, WI; 4: Prereq: Instructor permission)

PUBHBIO 702: Design and Analysis of Studies in the Health Sciences 1I

Fundamental concepts of biostatistical inference will be presented, including categorical data methods, nonparametric statistical testing, analysis of variance designs, and regression methods. All statistical procedures will be integrated with the application of computer statistical packages.

(WI, SP; 4: Prereq: B- or above in PUBHBIO 701 or instructor permission)

PUBHEpi 715: Principles and Procedures for Human Clinical Trials

This course presents basic principles and procedures in the design, conduct, and analysis of human clinical investigations (trials). Our intent is to teach basic concepts necessary for the application of human clinical trials in medical research.

(SP; 4: Prereq: PUBHEPI 715 and PUBHBIO 702 or instructor permission)

STAT 528: Data Analysis I

In this non-calculus based course data collection, analysis, and preliminary statistical inferences are studied. More specifically, the course covers summaries of data, design of experiments, probability, confidence intervals, tests of hypothesis and other statistical inference as time permits. By the end of the course you should be able to design a simple experiment and analyze the data obtained using the statistical methods learnt in class.

(SU, AU, WI; 3; lab hours arranged)

STAT 529: Data Analysis II

Stat 529 and 530 will cover many of the common statistical methods that you will encounter when reading journal articles in your field, or that you will need to analyze data that you have collected. When covering any statistical method, our goal is for you to (1) understand the assumptions of the method and be able to check them, (2) be able to carry out the necessary computations on MINITAB, (3) be able to describe your results using correct statistical "jargon", and (4) be able to interpret the results in a way that is meaningful to others in your field. We will try to accomplish these goals through homework and interactive classroom sessions.

(WI, SP; 3; lab hours arranged; Prereq: STAT 528 or equivalent)

STAT 530: Data Analysis III

The material in 530 relies heavily on the additive model (see the early part of the text for a description of this model), simple linear regression and one-way ANOVA. The course will cover

multiple linear regression and ANOVA designs beyond the one-way layout in detail. The goals for the course are for you to (1) understand the key ideas that underlie the models we'll work with, (2) appreciate the importance (and unimportance) of the assumptions that the models are based on, (3) be able to make sound decisions for an analysis, (4) implement formal techniques flawlessly, and (5) summarize an analysis appropriately. With these goals in mind, by the end of the quarter, you should be able to design and conduct an experiment of modest size, and you should be able to analyze the data from such an experiment. We will try to accomplish these goals through homework and interactive classroom sessions.

(3; Prereq: 529 or Instructor permission)

Vision Science 740: Survival Skills for Graduate Students

The course will provide “survival skills” for graduate students. These include critiquing paper, writing abstracts, presenting data and analyses, preparing visual aids, and grant submissions. (SU, AU, WI, SP; 2; Prereq: Instructor permission)

Vision Science 796: Ethics in Biomedical Research

The student should finish the course with a general understanding of the issues surrounding the ethical conduct of science.

- The student should understand what constitutes scientific authorship.
- The student should be able to draft a protocol for research on human subjects.
- The student should have gained an ability to think about scientific conduct issues in an ethical decision-making way.

(AU; 2)

Vision Science 797: Grantsmanship

This course is designed to explain the structure of the National Institutes of Health, especially the National Eye Institute, to illustrate the principles of good grantsmanship, and to describe the review process grants undergo. Emphasis will be focused on two particular grant mechanisms: the Mentored Clinical Scientist Development Award (K23) and the Research Project Grant (R01). Students will participate in discussions about the grant writing process, will write sample grants, and will critically review each others' grants in a mock “Study Section” review. Course evaluation will be based on an outline of the proposal at mid-term, class participation, and the completed grant at the end of the term.

(WI; 2; Prereq: Instructor permission)

Vision Science 799: Assessing the Literature

Students will learn to critically evaluate the literature by participating in discussions of a variety of papers, including but not limited to scientific articles from peer-reviewed journals. A satisfactory/unsatisfactory grade is based solely on participation during class discussions.

(WI; 2; Prereq: Instructor permission)

Zerhouni, E. US Biomedical Research: Basic, Translational, and Clinical Sciences. JAMA. 2005;294(11):1352-8.



Department of Statistics

Cockins Hall
1958 Neil Avenue
Columbus, OH 43210-1247

Phone (614) 688-3634
Fax (614) 292-2096
E-mail pfc@stat.osu.edu
Web <http://www.stat.osu.edu/>

Friday 2 July 2010

Dear Stephanie Vecchiarelli, EdD, MPH,

The Department of Statistics supports the proposal for a Graduate Interdisciplinary Specialization in Biomedical Clinical and Translation Science. Given the utility of statistical methods of data analysis in clinical and associated applications, we are excited that our sequence of courses in Data Analysis (Stat 528, 529, and 530) can be part of the Analysis, Statistics, and Informatics cluster in this program.

If you have any further questions, please contact me.

Sincerely,

Peter F. Craigmile, Ph.D.

Chair, Curriculum Committee, Department of Statistics

pfc@stat.osu.edu

From: Elliot Slotnick
Sent: Wednesday, August 25, 2010 4:20 PM
To: montalto.2@osu.edu; Theresa Early; Melanie Bales; 'ANDREW BLASENAK'; Adam Newby
Cc: Elliot Slotnick; Dena Myers
Subject: FW: GIS revised application

Dear All,

Still engaged in Summer triage...Among the items left in limbo was the attached Graduate Interdisciplinary Specialization for which the late May commentary copied below was distributed. Andrew and Theresa weighed in on this over the summer—both indicating that they were okay with the revision and, at that point, I lose sight of it. So let's put it on the agenda of our opening meeting in September—date coming soon, to give this revision its proper review and, perhaps, we can move it on after that meeting. Hopefully, this is the final curriculum item that I under-oversaw during the Summer.

Best,
elliott

From: Elliot Slotnick
Sent: Friday, July 02, 2010 3:06 PM
To: montalto.2@osu.edu; Theresa Early; Melanie Bales; ANDREW BLASENAK
Cc: Elliot Slotnick; Dena Myers
Subject: FW: GIS revised application

A Happy holiday weekend to all of you,

This just in—a “real” curriculum revision item with our revision requests detailed below.

There's a lot of curriculum stuff hanging out there that I need to get closure on—basically my bad—things that I asked for comments on at the end of the term and haven't completely followed through on. And some new stuff (like this) now in your hands. How about I try to tie up loose ends and, with this item and any others you've recently received (Rural Sociology request? Others? Dena?), we'll try and schedule a real time, face to face meeting? I'm thinking post July 15th—which should give everybody time to review what they have and me, hopefully, the time and the impetus to catch up with other curriculum items from the end of the Spring quarter.

Best,
e

From: Vecchiarelli, Stephanie [mailto:Stephanie.Vecchiarelli@osumc.edu]
Sent: Friday, July 02, 2010 11:23 AM
To: Elliot Slotnick; Binkley, Philip
Cc: Dena Myers
Subject: GIS revised application

Hi Elliot,

I have attached our revised application and letter of concurrence from Statistics.

We have expanded on our discussion of the GIS Graduate Studies Committee and further defined its role in the GIS process. We have added three courses from Statistics that they suggested would be appropriate for the GIS. Finally, the deadline for accepting applications has been changed to a rolling deadline with no cap on the number of enrollees, and the error with Nursing 917.01 has been corrected.

We appreciate your guidance throughout the process. Please let us know if you have any questions.

Have a good weekend,
Stephanie

Stephanie Vecchiarelli, EdD, MPH
Research Education, Training, and Career Development Program Manager
OSU Center for Clinical and Translational Science
376 W. 10th Ave.
205 Prior Health Sciences Library
Columbus, OH 43210
Phone: 614.293.2356
Fax: 614.293.4039

CCTS Website: [http://ccts.osu.edu/drupal/
stephanie.vecchiarelli@osumc.edu](http://ccts.osu.edu/drupal/stephanie.vecchiarelli@osumc.edu)

From: Elliot Slotnick [mailto:slotnick.1@gradsch.ohio-state.edu]
Sent: Friday, May 21, 2010 8:32 PM
To: Binkley, Philip
Cc: Vecchiarelli, Stephanie; Dena Myers; Elliot Slotnick
Subject:

Dear Phil,

As you know, the Curriculum Committee of the Graduate Council has given its initial review to your proposal for a Graduate Interdisciplinary Specialization in Biomedical Clinical and Translational Science. The proposal was deemed to be in quite good shape with limited revisions and/or additions needed for its endorsement by the Committee and forwarding to the full Council for a vote. Specifically, the Committee seeks the following:

- This GIS proposal comes blessed with an unusual amount of administrative support from the resources of the Center for Clinical and Translational Science and, in particular, from the Center's Program Director for Research Education, Training, and Career Development, Stephanie Vecchiarelli. In some respects, however, Stephanie's central role in the Center has resulted in an important omission in the GIS program proposal. That is, nowhere in the proposal is there mention or discussion of the existence of and oversight role to be played by the GIS's Graduate Studies Committee. It is almost as if the expectation is that all administrative and academic facets of the program's operation will devolve to Stephanie. Admittedly, while she will undoubtedly be at the center of the GIS's operation, just as she was throughout the proposal's development, a critical role needs to be played by program faculty and, in particular, the GIS's Graduate Studies Committee (GSC).
- Specifically, likely in the area of page 4 of the proposal, a section needs to be developed that speaks to the program's GSC. How will it be composed and structured? What will its selection

process look like and how will both representation from the GIS's constituent programs and replacement of GSC members be assured? Will all constituent programs in the GIS be seated on the GSC? Will there be a planned rotation?

- Beyond simply specifying the creation and maintenance of a GSC, spend some time talking about its functions. For example, page 4 in the proposal articulates GIS admissions processes but says nothing about GIS admissions decisions. Will that be performed by the GSC? What standards for admissions will there be beyond the qualifications mentioned on page 4? Will everyone who meets those standards be admitted? Will there be a cap placed on the number of students who are admitted to the program? What other roles beyond admissions might the GSC play? At bottom, how will the academic facets of the program be overseen?
- Bottom of Page 4- Why is there a firm deadline set for applications to the GIS? Is there any reason why admissions can't be rolling?
- On page 8 it appears that Nursing 917.01 is characterized as both an "Independent Study" course and as a "Seminar." Is that correct? How can that be?
- The Committee took note of the successful effort that has been made to obtain letters of concurrence from all of the constituent graduate programs in the GIS. What is now requested, as we discussed in an e-mail exchange this afternoon, is a letter of concurrence or a statement from the Department of Statistics. In the Committee's view, since Analysis, Statistics and Informatics is a "Core Competency Cluster" in the GIS, even though there are no courses from the Statistics program listed, it is important to gauge the views of the Statistics program on the proposal. We would be happy to have a statement from either GSC Chair Elizabeth Stasny or Department Chair Doug Wolf.
- Finally, while not a request for explicit revision, the Committee suggests that, in the future, an effort be made to include relevant course options from other areas that are not presently included in the GIS curriculum. Such potential areas from which additional courses might be found include the College of Social Work, the Glenn School (Public Policy and Management), The Fisher College of Business and Statistics.

The Committee looks forward to returning to the review of your proposal when these issues are addressed in a clean copy revision. Please don't hesitate to contact me with any questions and concerns.

Best,
elliot

Graduate Council
October 4, 2010
226 University Hall
Meeting Minutes

Graduate Council Members Present:

Ana Azevedo, Sarah Bryner, Ginny Bumgardner, Theresa Early, Bernadette Minton, Margaret Newell, John Oberdick, Robert Perry, Jim Phelan (chair), Roberto Rojas, Harald Vaessin, Karla Zadnik

Graduate School Staff Present: Patrick Osmer, Ann Salimbene, Elliot Slotnick, Kathleen Wallace, Susan Reeser (recorder)

A. Approval of Minutes

- Professor Phelan called the meeting to order and asked for a review of the minutes from the June 7, 2010, Graduate Council meeting. The minutes were approved as submitted.

B. Announcements – Dean Pat Osmer

- Introduced and welcomed the new members to Graduate Council. Dean Osmer briefly explained Council's organization and role as an advisory group to the Graduate School reviewing policies and overseeing initiatives.
- Assistant Dean Kathleen Wallace gave an overview of the Graduate School's new website designed to highlight information for prospective students and provide more visibility for the good things going on in the Graduate School such as student and graduate program successes. The improved website will be a better electronic tool for posting information for students and faculty.
- Dean Osmer stressed that the Graduate School is committed to improving communications and its presence campus-wide using all of the electronic media available. Council members indicated that the use of Facebook would be another means to reach an even wider audience.
- Reported that the Council of Graduate Schools report "The Path Forward: The Future of Graduate Education in the United States" fits in nicely with initiatives that the Graduate School is already involved with such as strengthening graduate education through good recruiting. The report emphasizes the preparation of graduate students to work outside of academia and that the growth areas for graduate education are in master's programs.
- The Graduate School has joined the National Professional Science Master's Association (NPSMA) to aid in building alliances with industry employers to better prepare Ohio State graduates to work outside of academia. Associate Dean Slotnick will attend the November NPSMA best practices conference on creating and funding start-up professional science Master's (PSM) programs.
- Program Council, the committee charged with implementing the recommendations in the reports of the task forces on the life sciences and the environmental sciences, is continuing its efforts to optimize the functioning of the committee's structure and to increase its visibility on campus. An initial, high-priority task is to assist the LS and ES steering committees to apply for more training grants. Dr. Catherine Lucey will assume Dr. Chip Souba's place on Program Council and Dr. Bob Brueggemeier, Dean, College of Pharmacy, will serve as the lead dean for the life sciences.

- Ohio State has been invited to nominate up to 10 international graduate students for the Howard Hughes Medical Institute's (HHMI) new fellowship program in the biomedical and related sciences. The Graduate School is organizing the nomination and selection process. The deadline for nominations is October 25. Professor Bumgardner suggested that another notice about the grant should be sent to programs to ensure the greatest awareness about the fellowship.
- The NRC Data Based Assessment of Research Doctorate Programs was released at Ohio State on September 28, 2010. The Graduate School held an informational presentation of the NRC data to graduate programs on that same day to communicate the report's findings in a comprehensible and understandable format. Dean Osmer said that the complex report does not rank programs but instead provides ranges of rankings according to two different methods (S or survey-based rankings and R or regression-based rankings) and 3 separate dimensions, i.e., research activity, student support and outcomes, and diversity of the academic environment. The report does not include a statement of best programs but allows audiences to give their own interpretation of the data based on their own criteria of what is important to their program.

Julie Carpenter-Hubin, Director, Institutional Research and Planning, and staff from her office are the central clearing-house for Ohio State's data interpretation. They are working to make a comprehensive analysis of the data. Professor Phelan asked what the strategic use of the report will be. Dean Osmer felt that the report should come into play during the next doctoral program review process. He said that one of his greatest disappointments with the report is that the student placement data is limited to academic placements and does not make use of the extensive placement information submitted by Ohio State.

- Dean Osmer encouraged Council members to send him any issues or agenda item for discussion at the meetings.

C. Election of Chair

Professor Jim Phelan indicated his willingness to continue to serve as chair of Graduate Council for the 2010-2011 term. Council members unanimously agreed. Dean Osmer complimented Professor Phelan for his service as chair and thanked him for continuing in this role.

D. Business

1) Semester Conversion

Associate Dean Slotnick explained a handout listing ten central Graduate School rules that were revised in the *Graduate School Handbook* that will become effective under semester conversion. These rules have been amended to also cover the May Session, Summer Session, and Summer Term. Dean Slotnick said that questions still exist about graduate associate (GA) teaching loads and stipend payments in the May Term because there is a disconnect in the payroll system and the way appointments must be made. Associate Professor Steve Fink, Co-Chair, Semester Conversion Coordinating Committee, is currently working with the Office of Business and Finance to rectify the problem on how graduate students get paid. Professor Perry stressed that the semester conversion process should do no harm to students and that GA stipends should remain at the same level and timeline as they are under the quarter system.

Elliot reported that Ohio State will host a "Semester Summit" on October 25. The summit will give participants an opportunity to explore calendar conversion issues, solutions, and best practices.

2) Continuous Enrollment Policy

The policy was shared with Council for informational purposes and because it is now coming into effect. The policy applies to all post-candidacy doctoral students who were admitted to Graduate School beginning Autumn Quarter 2008 and states that all students who successfully complete the doctoral candidacy examination will be required to be enrolled for at least 3 credit hours in every quarter of their candidacy (summer excluded) until graduation. Concern was expressed about students who are doing field work, leaves of absence, and funding hardship issues. Dean Osmer said that the policy was established to reduce students' time to degree and urged Council members to let him or Assistant Dean Ann Salimbene know about any specific questions or problems they become aware of with the policy.

E. Graduate Council Curriculum Committee Reports and Actions

— Theresa Early, Liaison

1. New member to serve on Curriculum Committee

Associate Dean Slotnick and Professor Early explained the role and duties of the Curriculum Committee and that members serve as a liaison to the Graduate Council. Professor Early explained that a new member from Graduate Council is needed to serve on Curriculum because one faculty is rotating off. The Curriculum Committee is charged with reviewing new programs, courses and course changes. They then vet the changes for clarity, accuracy, and compliance with university guidelines and policies. Professor Early said that if anyone had an interest in serving on Curriculum, especially someone with expertise in the sciences or health sciences, they should let Dean Slotnick know as soon as possible.

2. Curriculum Committee Proposals

- Proposal to change the name of the Public Health Graduate Specialization from Clinical Investigation to Clinical Translational Science
- Proposal to reduce the pre-candidacy credit hour requirements for the Health and Rehabilitation Science (HRS) Ph.D. program School of Allied Medical Professions
- Proposal to create a Graduate Interdisciplinary Specialization in Biomedical Clinical and Translational Science
- Proposal to create a One of a Kind Ph.D. Program in Biophysics and Biomedical Informatics
- Proposal to add the elective class, Ghana Interdisciplinary OSU Sponsored Study Abroad Program, to the Graduate Interdisciplinary Specialization in Global Health
- Proposal to create a dual degree Master of Business Administration (MBA) and Master of Environment and Natural Resources (MENR)

➤ Professor Early explained the Curriculum Committee review and vetting process and reported that each of the proposals above had been approved by the committee. She reviewed each of the proposals and answered questions from Council members. Each of the proposals were individually approved by Graduate Council and will be forwarded to the Council on Academic Affairs for further processing.

The meeting was adjourned at 5 p.m.