April 21, 2016

Randy R. Brutkiewicz, PhD
Associate Dean for Graduate Studies

Janice Blum, PhD
Associate Vice Chancellor for Graduate Education at IUPUI
Associate Dean of the University Graduate School, Indiana University

Dear Drs. Brutkiewicz and Blum,

I am writing to formally request an alteration to the curriculum of the Education Track PhD Program in Anatomy and Cell Biology (see attached). This is necessitated by impending changes in the medical school curriculum, which provides several of our required courses. The curricular changes have been unanimously approved by the department's Graduate Studies Committee.

New students will be entering the program in the fall, so there is some urgency to our request. Thank you for your consideration. Please let me know if you require further information.

Sincerely,

James J. Brokaw, PhD, MPH
Vice Chair for Education
Director, Education Track PhD Program
Department of Anatomy and Cell Biology

CC:
K. Jones
J. Bidwell
Request to Modify the Curriculum of the Education Track PhD Program in Anatomy and Cell Biology

Program Description
The Department of Anatomy and Cell Biology offers a separate PhD track for students who desire a career focus in anatomy education rather than biomedical research. The goal of the education track is twofold: (1) to provide students with extensive training in all of the anatomical sub-disciplines coupled with sufficient teaching experience to be fully prepared to assume major educational responsibilities upon graduation and (2) to train students to conduct rigorous, hypothesis-driven medical education research and other scholarly work necessary for promotion and tenure. The 90 credit hour curriculum consists of biomedical courses taught within the School of Medicine and education courses taught within the School of Education, including courses in health sciences pedagogy, curriculum development, learning theory, quantitative and qualitative research methods, statistics, and electives. The program is offered on both the Indianapolis and Bloomington campuses, with 5-6 students at each site. The coursework is virtually identical on both campuses with only minor differences in how the equivalent courses are named and numbered.

Need for Curricular Change
The Education Track curriculum relies on courses taught within the medical curriculum, specifically the medical courses in gross anatomy, histology, neuroanatomy, physiology, and biochemistry/molecular biology. With the implementation of the new medical curriculum in the 2016-2017 academic year, these stand-alone, discipline-specific courses will be replaced with new “integrated” courses that encompass multiple content areas. The outline below lists the soon-to-be-eliminated medical courses and the new courses that will replace them.

- Old discipline-specific medical courses that will no longer be offered at Indianapolis
  - ANAT D850 Gross Anatomy (8 cr.)
  - ANAT D851 Histology (4 cr.)
  - ANAT D852 Neuroscience and Clinical Neurology (5 cr.)
  - PHSL F613 Medical Physiology (5 cr.)
  - GRAD G804 Cell and Molecular Biology (3 cr.)

- Old discipline-specific medical courses that will no longer be offered at Bloomington
  - ANAT A550-551 Gross Human Anatomy (8 cr.)
  - ANAT A560 Cell Biology and Histology (4 cr.)
  - MSCI M555 Medical Neuroscience (5 cr.)
  - PHSL P531-532 Human Physiology (8 cr.)
  - MCHE C580 Medical Biochemistry (3 cr.)

- New medical courses that will replace the current discipline-specific medical courses at both locations
  - MED X620 Human Structure (8 cr.) – Includes gross anatomy, embryology, and histology of the organ systems
  - MED X630 Molecules to Cells and Tissues (8 cr.) – Includes biochemistry, molecular biology, genetics, early embryology, and basic tissue histology
- *MED X660 Neuroscience and Behavior (6 cr.)* – Includes neuroanatomy and aspects of neuropharmacology, neuropathology, neurology, and psychiatry
- *MED X640 Fundamentals of Health and Disease (6 cr.)* – Includes aspects of physiology, pathology, and pharmacology

We request to substitute the 5 old medical courses at both locations with the 4 new medical courses beginning with the 2016-2017 academic year. The content of these new medical courses will provide a close approximation of the biomedical material and educational experiences of the old coursework, while providing some additional content that will be of value to the students. The Graduate Division Office is currently working to assign graduate school numbers to these medical courses to facilitate the enrollment of Education Track students.

All other aspects of the Education Track curriculum will remain unchanged, other than minor adjustments to the credit hours in each category. The following pages describe the currently-approved Education Track curriculum at the Indianapolis and Bloomington campuses, and specify the specific changes being requested.
New Degree Plan for Education Track PhD
in Anatomy and Cell Biology—Indianapolis

Biomedical Courses (36 hours)

- D850 Gross Anatomy (8)
- D851 Histology (4)
- D852 Neuroscience and Clinical Neurology (5)
- G804 Cellular and Molecular Biology (3)
- F613 Medical Physiology (5)
  OR
- F503 Graduate Physiology (5)

- D861 Anatomy Education Seminar (1); required yearly, which would sum to 5 credit hours assuming a 5-year degree completion time; this seminar series will focus on educational topics rather than bench research.
- D878 Anatomy Teaching Practicum (2); supervised teaching in Gross Anatomy, Histology, and Neuroscience (repeated for 6 hours total); this teaching will entail lecturing as well as assisting in laboratory instruction.

Education Courses—Doctoral Minor (18 hours)

- M620 Pedagogical Methods in the Health Sciences (3)
  OR
- W672 College Teaching in Health Sciences (3)

- J500 Instruction in the Context of Curriculum (3)
  OR
- C750 Curriculum in Higher Education (3)

- P540 Learning and Cognition in Education (3)

- Y611 Qualitative Inquiry in Education (3)

- Y521 Methodological Approaches to Educational Inquiry (3) (PREFERRED)
  OR
- Y520 Strategies for Educational Inquiry (3)
  *In special circumstances, either of the courses below may substitute for Y521 or Y520 with permission of the student's advisory committee:
    - Y510 Action Research (3)
    - C750 Scholarship of Teaching and Learning (3)

- And select ONE of these:
  - Y525 Survey Research (3)
  OR
  - Y603 Statistical Design of Educational Research (3)
    OR
  - C750 Topical Seminar (3)
OR
Another education course if approved by the student’s advisory committee

Statistics Courses (6-7 hours)
- Y502 Intermediate Statistics Applied to Education (3); requires concurrent registration with Y500 Computer Lab for Educational Statistics (1) (prerequisite: Y520 Strategies for Educational Inquiry or a course in basic statistics)
- OR
  P551 Biostatistics for Public Health I (3)
- Y604 Multivariate Analysis in Educational Research (3)
- OR
  P652 Biostatistics for Public Health II (3)

Electives and Research Credits (26-28 hours)
- Electives to be selected in consultation with advisor. Students will be encouraged to take one or more of the following courses:
  - D864 Advanced Gross Anatomy (2)
  - D856 Advanced Histology (2)
  - D875 Advanced Neuroanatomy (2)
  - D700 Educational Research Practicum (2)
- D860 Dissertation Research (cr. arr.)—sufficient to complete the 90 credit hour degree requirement
New Degree Plan for Education Track PhD in Anatomy and Cell Biology—Bloomington

Biomedical Courses (39 hours)
- A550 SSS1 Gross Human Anatomy (8)
- A560 Cell Biology and Histology (4)
- M555 Medical Neuroscience (5)
- C580 Medical Biochemistry (5)
- P531-532 Human Physiology (8)

- Anatomy A850 Seminar (1); required yearly, which would sum to 5 credit hours assuming a 5-year degree completion time; this seminar series focuses on educational topics rather than bench research.
- Anatomy A878 Anatomy Teaching Practicum (2); supervised teaching in Gross Anatomy, Histology, and Neuroscience (repeated for 6 hours total); this teaching entails lecturing as well as assisting in laboratory instruction.

Education Courses—Doctoral Minor (18 hours)
- M620 Pedagogical Methods in the Health Sciences (3)
  OR
  W672 College Teaching in Health Sciences (3)
- J500 Instruction in the Context of Curriculum (3)
  OR
  C750 Curriculum in Higher Education (3)
- P540 Learning and Cognition in Education (3)
- Y611 Qualitative Inquiry in Education (3)
- Y521 Methodological Approaches to Educational Inquiry (3) (PREFERRED)
  OR
- Y520 Strategies for Educational Inquiry (3)
  In special circumstances, either of the courses below may substitute for Y521 or Y520 with permission of the student’s advisory committee:
  - Y510 Action Research (3)
  - C750 Scholarship of Teaching and Learning (3)

- And select ONE of these:
  - Y525 Survey Research (3)
    OR
  - Y603 Statistical Design of Educational Research (3)
    OR
  - C750 Topical Seminar (3)
    OR
  - Another education course if approved by the student’s advisory committee