

## New Minor

Date: 5/02/2014

Institution: Indiana University

School: IU School of Medicine

Location: On campus      Is 50% or more online? No

Official name of minor: **Business of Biomedical Sciences**

Projected semester and year of implementation: Spring 2015

Academic Career: GRD1 (limited to specific programs)

If minor is not open to all programs, please explain the limitation:

G718 is an IBMG Program-specific course. However, other programs that can use an "independent study" (or equivalent) in its place, should also be able to offer this minor to their PhD students.

Brief description:

We are proposing to utilize existing courses in the School of Medicine and Kelley School of Business for a new 7 credit minor entitled, "Business of Biomedical Sciences". We will take advantage of the existing structure of the IUSM's IBMG PhD program structure, which includes a 2 credit 8-week internship under G718 (Research in Biomed. Sci.), X518 and X519 (Global Trends and Events; Business of Life Sciences—1.5 cr each) and G672, Translational Research and Entrepreneurship—2 cr.).

Rationale for new minor:

The historical "biomedical research workforce", as we have come to know it, is changing in the 21st century. For success in today's research and business environment, researchers need to work in the real world setting of hospitals, clinics, industry, business, law, intellectual property, and care systems. As we can predict, many researchers frankly lack the skills necessary to navigate this environment, or help other groups succeed in this endeavor. It is incumbent upon us to provide those professional development opportunities at the earliest levels of biomedical graduate education. Preparation for these new skill sets cannot wait until postdoctoral fellowship time in order for our trainees to be competitive in the 21st century biomedical workforce. The tools we have already developed, in concert with courses in other IUPUI schools, will be critical in allowing these biomedical trainees to acquire the necessary skills to have a highly rewarding career in the biomedical workforce—regardless of the area they ultimately choose. Such an approach will allow our trainees to be highly competitive for the careers in the 21st century biomedical workforce that require doctoral education. In the context

of this new minor subject application, we will take advantage of the existing structure of the IBMG Program for PhD study, in our proposal to develop a PhD minor in the “Business of Biomedical Sciences”, to be conferred by Indiana University.

“You don’t know what you don’t know”, is an often used cliché. Traditionally, the focus of PhD biomedical education is preparing the doctoral students for careers as independent researchers in an academic institution—that is it. Few students are aware of “alternative” career options. Certainly, there is a wide variety of career options available to individuals who have earned a PhD in the biomedical sciences. It is insufficient to simply talk about the possible career options available to students; we believe it is important for them to actually experience them. To do this, we will take advantage of the existing structure we have within the Indiana University Biomedical Gateway (IBMG) program and requirements for the PhD degree by Indiana University. For students in their first year of PhD study, it is expected that they do three-8 week laboratory rotations. These begin during the second half of the Fall semester; the other two occur during the Spring Semester. At the end of the third rotation, students generally choose a dissertation laboratory. However, all students have the potential option to do a fourth rotation (and some actually do). It is during the fourth rotation period that we will propose to offer the option of doing an internship in a targeted area in the “Business of Biomedical Sciences”. IBMG graduate students will have the ability to take their fourth rotation at the Indiana University Research Technology Corporation (IURTC). PhD-holding colleagues at IURTC will be given adjunct faculty status and can host a graduate student, exposing them to various projects in intellectual property and technology transfer. The student could also work on a single project for the entire eight week rotation. This serves as an official 2-credit course (G718; Research in Biomedical Science), for which Dr. Brutkiewicz (Associate Dean for Graduate Studies, IUSM) is the Course Director.

The “Business of Biomedical Sciences” minor will also require that students take existing courses in both the Indiana University Kelley School of Business (X518, Global Trends and Events and X519, Business of Life Sciences—1.5 credits each) and IUSM (G672, Translational Research and Entrepreneurship—2 credits). Students will receive 2 credits for their “rotation” under G718, for a total of 7 graduate credits to fulfill the minor requirements.

We have had other IBMG students take one or more of these courses in the past, but not in the context of receiving a transcriptable credit in the context of a minor. We consider the development of a new minor in the “Business of Biomedical Sciences” a tool to help our PhD graduates to be more competitive when applying for positions in biotechnology, the pharmaceutical industry, intellectual property, etc. The fact that the vast majority (~74%) of biomedical PhD graduates do not work in academia, is evidence for the need of this new minor area.

We do not expect all of our students to decide to select the “Business of Biomedical Sciences” as their PhD minor area. However, with an increasing number of students expressing an interest in learning about non-traditional careers outside of academia, this new minor will be an important option for them. We strongly believe this is an important first step in the evolution of

our training of IUSM PhD students to include preparation for the careers of the 21st century biomedical research workforce.

List of required courses:

G718--Research in Biomedical Science (2 cr.)

X518--Global Trends and Events (1.5 cr.)

X519--Business of Life Sciences (1.5 cr.)

G672--Translational Research and Entrepreneurship (2 cr.)

Comments:

The required courses indicated above are offered (and will be taken) at a time in the student's PhD program whereby they would not disrupt their PhD dissertation work. We strongly believe that PhD students with such a minor indicated on their transcript would make them more competitive for biomedical science positions outside of academia and make our institution that much more attractive to potential graduate students; thus, this proposed minor could be used as an additional recruitment tool as well.