

### **Request for making the following changes to the current MS program in Biostatistics**

1. To add STAT 516-Basic Probability Applications as an alternative to the currently required course STAT 519 for terminal MS students
2. To add STAT 517-Statistical Inference as an alternative to the currently required course STAT 528 for terminal MS students
3. To reduce the number of total required credits for the degree from the current 42 hours to 36 hours.

### **The rationales for make such changes**

1. The Biostatistics MS program faces a challenge in admitting quantitatively well-trained BS students, though there is increasing interest among college students who are close to graduation and among professionals who are thinking about a career change. Undergraduate programs in biostatistics are not common in US as well as globally (we are not aware of any BS in Biostatistics in US), so our applicants are non-homogenous and quite diversified in their undergraduate training. Although mathematics courses- calculus and linear algebra are the prerequisites for the MS study, many applicants including those who had strong background in life sciences or even had Ph.D in a basic science field had a good sense of Biostatistics application, are lacking in essential quantitative training to fully comprehend the course materials. We would like to enroll them but have to ask them to make up the math prerequisites before enrolling in our core biostatistics curriculum. However, some of our current MS students still have tremendous difficulty passing the two core courses (STAT 519 and STAT 528) offered by the Math department at IUPUI, which are also our Ph.D core courses. Therefore we have to include two similar mathematical statistics courses (STAT 516/517) with less theoretical exposure to as alternative to STAT 519/528 for students with MS as their terminal degree. The proposal for the change has been communicated with the Math Department that offers STAT 516/517 and has received their support for the change. (See the attached email exchange)
2. Having 42 credit hours for the MS degree requires resources to add more new Biostatistics courses or to have summer courses. Our Biostatistics faculty members are heavily committed to funded research activities and receive very limited resources for teaching. We now propose to reduce the total required credit hours for the degree from 42 to 36 for the implementation effectiveness. For the 36 hours, we do not change the requirement of a total of 30 credit hours for the MS Biostatistics core curriculum and we now just require 6 instead of 12 more credit hours from electives. The MS program in Biostatistics with less than 40 hours appears to be quite common among our peer institutions (See the attached file, U. Michigan is different and has a large pool of MS students who will be moving on for the Ph.D after receiving the MS). This change will make students much more flexible to finish the degree in four semesters.

University	Total Hours	Thesis	Written Exam
1. Columbia University	36	Capstone Project	No
2. UT Health Science Center at Houston	36	Can be replaced by practicum	No
3. Duke University	36	Master's Project	No
4. University of Michigan	48	No	Yes
5. University of Minnesota	36	No	Yes
6. University of Iowa	38	No	Yes
7. University of Florida	36	No	No
8. Boston University	32	No	Yes
9. University of Louisville	36	No	No
10. University of Kansas	36	No	Yes