

Updates and clarifications to Statistical Genetics Certificate Self-Study

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1. Faculty

The Statistical genetics faculty suffered the departure of Stephanie Monks from Biostatistics in 2004, and of Matthew Stephens from Statistics in 2006. While the recruitment of **John Storey** to Biostatistics was a considerable gain, it was only with the arrival of **Bruce Weir** as Professor and Chair in January 2006 that Biostatistics gained senior tenured-faculty leadership in this area.

Although the departure of Matthew Stephens was a significant loss to the entire Statistics department, I am happy to report that Statistics has successfully recruited an outstanding new junior tenure-track faculty member in the area of Statistical Genetics. **Dr. Vladimir Minin** (2007 PhD from UCLA) will join UW in August. From Fall 2007, Statistics will again have two full-time regular faculty in this area, as it did from 2000 to 2006.

The Biostatistics department is also recruiting faculty in Statistical Genetics. One offer is in progress, also to an outstanding junior candidate.

2. Curriculum and course syllabuses

2a: Curriculum committee

The membership of the Statistical Genetics Curriculum Committee has been updated. From 2006-8, the members are Professors Elizabeth Thompson, Bruce Weir, and Ellen Wijsman. Note these are the core course sequence instructors for 2006-7.

2b: Curriculum overview

The Review Committee have requested a curriculum overview and statement of learning objectives. A detailed curriculum overview, including learning objectives of the core course sequence, is at

http://depts.washington.edu/statgen/Statgen/core_curric.shtml
and a copy of this document is appended.

The charge to the Review Committee raises the question of a “capstone course”. The course BOST/STAT 552, taught by Dr. Ellen Wijsman, serves as a capstone course for students in the Certificate Program. It builds on the material of the two earlier courses in the sequence, providing students with exposure to practical issues in genetic analysis studies and hands-on project experience. It is a required course of the Certificate Program.

2c: Course syllabuses

The review committee have requested up-to-date syllabuses of the courses. Brief syllabuses are provided in the appended curriculum overview document. The current web pages for the courses of the curriculum are at

GENOME 540: <http://www.phrap.org/compbio/mbt599/>

GENOME 562: <http://evolution.gs.washington.edu/g562/2007/syllabus.html>

STAT/BOST 550: <http://www.stat.washington.edu/thompson/Stat550/announce.shtml>

BOST/STAT 551: <https://courses.washington.edu/b551> (not updated?)

BIOST/STAT 552: <https://courses.washington.edu/b552>

BIOST 580B: <https://courses.washington.edu/b580b>

(This last listed class is the Statistical Genetics Seminar.)

Hard copies of parts of these web pages relating to current syllabuses are appended.

3. The Certificate vs Statistical Genetics Ph.D. pathways

The Statistical Genetics Ph.D. pathways in Statistics and Biostatistics are options within those two Ph.D. programs: there is no formal connection to the Certificate program. Students in the Statistical Genetics Ph.D. pathways in Statistics and Biostatistics **do not take** the Statistical Genetics Certificate. The issue of “value added” raised in the charge letter therefore does not arise.

Students in the Statistical Genetics Ph.D. pathways in Statistics and Biostatistics take the complete Statistical Genetics Certificate curriculum as a part of the coursework requirements of their Ph.D. program. Additionally, they fulfill other requirements of their Statistics or Biostatistics program. These other Ph.D. course requirements have been modified, in order not to lengthen time to Ph.D. degree for students in the Statistical Genetics Ph.D. pathways in Statistics and in Biostatistics.

Although there is no formal administrative connection between the two Ph.D. pathways and the Certificate program, joint participation of all students pursuing study in Statistical Genetics in the shared curriculum is an immense educational benefit. It not only increases numbers, but much more importantly enhances the diversity of student backgrounds and perspectives. The core course sequence provides the first truly interdisciplinary class for many of these students, and establishes cross-disciplinary connections among students that continue throughout their graduate programs, and hopefully beyond.

At the time of taking the Statistical Genetics courses, most Statistics or Biostatistics students will not know whether they will take the Certificate, choose the Ph.D. Pathway, or neither but nonetheless benefit from study in this area. This flexibility is highly desirable, but clearly makes identification of “students in the Certificate Program” infeasible. Further complicating the identification of Certificate students, the Certificate Program is not the primary graduate degree program of any student. Its goal is to provide opportunities, and many have gained useful training although not completing the full program.

It has happened that a majority (but not all) of the Biostatistics students have chosen to take the Certificate and remain in the regular Biostatistics pathway, while a majority of the Statistics students in this area have chosen the pathway, and have not taken the Certificate. Two possible reasons are: (1) The modifications the Biostatistics program made to accommodate Statistical Genetics Ph.D. students are minimal, whereas the Statistics Ph.D. program course requirements are more flexible, and (2) in the early years of the program (1999-2004) the Statistics Department had greater leadership in this area, in terms of faculty advising Ph.D. students.