Program goal
The mission of the VCU Department of Biostatistics is to improve human health through methodological research, the education of graduate students and health science researchers in biostatistical methods and applications, and collaborative health sciences research. Faculty members conduct methodological research motivated by collaborative alliances, which in turn contributes to and enhances the department’s educational mission. By focusing on the integration of methodological and collaborative research, students develop strong biostatistical and communication skills, enabling them to assume leadership positions in academia, government and industry.

Student learning outcomes
This training program is designed to be completed in 18 months (four semesters: fall, spring, summer, fall) and will help students achieve the following learning outcomes:

1. The successful candidate will understand the modern and advanced literature of biostatistical concepts, ideas and methodologies.
2. The successful candidate will demonstrate the ability to effectively collaborate with both biostatistical and health science researchers, specifically with respect to planning and designing research studies, and also in analyzing data from a broad spectrum of research questions.
3. The successful candidate will develop fluency in several computational languages, will exhibit proficiency in standard computation and analytic procedures, and will demonstrate the ability to computationally solve new and complex problems.
4. The successful candidate will display exceptional written and oral communication skills in terms of explaining biostatistical concepts, methods and results to both biostatistical and non-biostatistical health sciences researchers.

VCU Graduate Bulletin, VCU Graduate School and general academic policies and regulations for all graduate students in all graduate programs
The VCU Graduate Bulletin website documents the official admission and academic rules and regulations that govern graduate education for all graduate programs at the university. These policies are established by the graduate faculty of the university through their elected representatives to the University Graduate Council.

It is the responsibility of all graduate students, both on- and off-campus, to be familiar with the VCU Graduate Bulletin as well as the Graduate School website (http://www.graduate.vcu.edu/) and academic regulations in individual school and department publications and on program websites. However, in all cases, the official policies and procedures of the University Graduate Council, as published on the VCU Graduate Bulletin and Graduate School websites, take precedence over individual program policies and guidelines.

Visit the academic regulations section for additional information on academic regulations for graduate students. (http://bulletin.vcu.edu/academic-reg/)
courses. M.S. students must take four credit hours of BIOS 603 and two credit hours of BIOS 690. M.S. students interested in applying to the Ph.D. program in biostatistics (with no concentration or with a concentration in genomic biostatistics) are strongly encouraged to take both BIOS 513 and BIOS 514, participate in the Summer Student Training Program and present at the Biostatistics Student Research Symposium.

**Qualifying exam**

Students pursuing the M.S. degree must pass a qualifying examination administered after completion of their first-year courses. This applied examination covers material from the following first-year courses: BIOS 524, BIOS 601, BIOS 602 and BIOS 606. This examination is graded as pass or fail. A student must pass the qualifying examination at the M.S. level to continue in the M.S. program. A student who does not pass the qualifying examination at the M.S. level will have one opportunity to retake that part of the qualifying examination. Students interested in applying to the Ph.D. program in biostatistics (with no concentration or with a concentration in genomic biostatistics) are strongly encouraged to also take the theoretical component of the qualifying examination covering material from the following first-year courses: BIOS 513, BIOS 514, BIOS 653 and BIOS 654. These students must pass both the applied and theoretical qualifying examinations at the Ph.D. level in order to be considered in the Ph.D. program.

**Thesis**

There is no thesis requirement for the M.S. program.

**Course requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 516</td>
<td>Biostatistical Consulting (one-credit course taken four semesters)</td>
<td>4</td>
</tr>
<tr>
<td>BIOS 524</td>
<td>Biostatistical Computing</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 601</td>
<td>Analysis of Biomedical Data I</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 602</td>
<td>Analysis of Biomedical Data II</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 606</td>
<td>Clinical Trials</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 653</td>
<td>Biostatistical Methods I</td>
<td>4</td>
</tr>
<tr>
<td>BIOS 654</td>
<td>Biostatistical Methods II</td>
<td>4</td>
</tr>
<tr>
<td>BIOS 690</td>
<td>Biostatistical Research Seminar (one-credit course taken two semesters)</td>
<td>2</td>
</tr>
<tr>
<td>OVPR 601</td>
<td>Scientific Integrity</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td><strong>42</strong></td>
</tr>
</tbody>
</table>

The minimum total of graduate credit hours required for this degree is 42.

**Typical plan of study**

Many students often end up taking more than the minimum number of hours required for a degree program. The total number of hours may vary depending upon the program, nature of research being conducted by a study or in the enrollment or funding status of the student. Students should refer to their program websites and talk with their graduate program directors or advisers for information about typical plans of study and registration requirements.

**Contact**

Roy T. Sabo, Ph.D.
Associate professor and graduate program director
roy.sabo@vcuhealth.org
(804) 828-3047

Additional contact (admissions and prospective students)
Russell M. Boyle
Assistant professor, Department of Biostatistics, and associate program director
russell.boyle@vcuhealth.org
(804) 827-2049

Program website: biostatistics.vcu.edu (http://www.biostatistics.vcu.edu/)