

# Genetics, Genomics & Bioinformatics

## Theme Information

Genetics, Genomics, & Bioinformatics (GGB) is one of eight interdisciplinary PhD themes within Graduate Biomedical Sciences (GBS). Students select a theme upon application but have access to faculty and courses from across GBS, allowing for flexibility in both research and academics.

The GGB theme provides flexible, didactic, and integrated training opportunities across the broad disciplines of genetics, genomics, and bioinformatics. Our goal is to prepare students for independent research careers in experimental and computational disciplines, or the combination of those in academic research institutions and industry. To support this broad subject, the academic departments at UAB offer a large pool of mentors with expertise in varied research areas. The research interests of our mentors and students span the fields of genetics, genomics, bioinformatics, cancer biology, biochemistry, cell biology, developmental biology, immunology, and neuroscience. In addition, we teamed up with the [UAB Informatics Institute](#) and [HudsonAlpha Institute for Biotechnology](#) to accommodate training in their specific areas.

## Admissions

Prospective students should visit the [GBS Admissions page](#) for information on admissions requirements, application deadlines, and how to apply.

## Financial Support

All students accepted into GBS programs receive a competitive annual stipend and fully paid tuition and fees. Single coverage health insurance is also provided at no cost to the student. Please reference the [GBS Financial Support page](#) for further information.

## Curriculum

| Requirements                                                          | Hours     |
|-----------------------------------------------------------------------|-----------|
| <b>Lab Rotations</b>                                                  | <b>3</b>  |
| GBS 795 Lab Rotation 1                                                |           |
| GBS 796 Lab Rotation 2                                                |           |
| GBS 797 Lab Rotation 3                                                |           |
| <b>Core Courses</b>                                                   | <b>7</b>  |
| GBS 701 Core Concepts in Research: Critical Thinking & Error Analysis |           |
| GBS 707 Basic Biochemistry and Metabolism                             |           |
| GBS 708 Basic Genetics and Molecular Biology                          |           |
| GBS 709 Basic Biological Organization                                 |           |
| <b>Module Courses</b> <sup>1</sup>                                    | <b>8</b>  |
| <b>Theme Required Courses</b>                                         | <b>9</b>  |
| GBSC 742 GBS Student Theme Meeting Course <sup>2</sup>                |           |
| <b>GBS Required Courses</b>                                           | <b>49</b> |
| GRD 717 Principles of Scientific Integrity                            |           |

Grant-Writing/Scientific Communication<sup>3</sup>

Biostatistics<sup>4</sup>

Journal Clubs<sup>5</sup>

Three Advanced Courses<sup>6</sup>

Research<sup>7</sup>

**Total Hours 76**

- Four modular courses selected from the following: GBS 710, GBS 712, GBS 714, GBS 720, GBS 722, GBS 723, GBS 724, GBS 740A, GBS 740B, GBS 741, GBS 744, GBS 750, GBS 751, GBS 752, GBS 753, GBS 760, GBS 762, GBS 763, GBS 764, GBS 769, GBS 770, GBS 774, GBS 781, GBS 782, GBS 784, GBSC 718, GBSC 727, GBSC 729, GBSC 744, GBSC 747
- Required each fall and spring semester, 2nd year until graduation.
- Course selected from the following: GBS 716, GBS 725, GBSC 726, GRD 709
- Course selected from the following: GRD 770, BST 611, BST 612, BY 755, PY 716
- Required each fall and spring semester, 2nd year until graduation. Courses selected from the following: GBS 736, GBS 746J, GBS 747J, GBS 756, GBS 766, GBS 776, GBS 786J, GBS 793, GBSC 700, GBSC 713, GBSC 720, INFO 673, INFO 793
- Courses selected from the following: GBS 700, GBS 702, GBS 715, GBS 718, GBS 726, GBS 727, GBS 729, GBS 739, GBS 742, GBS 749, GBS 754, GBS 757, GBS 758, GBS 765, GBS 775, GBS 778, GBS 779, GBS 783, GBSC 705, GBSC 706, GBSC 707, GBSC 709, GBSC 710, GBSC 712, GBSC 714, GBSC 715, GBSC 717, GBSC 721, GBSC 724, GBSC 725, GBSC 728, GBSC 730, GBSC 732, GBSC 734, GBSC 735, GBSC 736, GBSC 740, GBSC 741, GBSC 743, GBSC 745, GBSC 746, GBSC 748, INFO 701, INFO 702, INFO 703, INFO 704, INFO 751, INFO 762, INFO 796, INFO 797, BME 723, BME 770, BME 772, BME 780 or approved course.
- Student must complete 24 hours total of dissertation research, GBS 799.

## Theme Directors

The theme directors listing for Genetics, Genomics, and Bioinformatics is located [here](#).

## Theme Faculty

[The faculty listing for the Genetics, Genomics, and Bioinformatics theme is located here.](#)

For further information, please reference the [GBS website](#).