

## **GBS Thematic Program Descriptions**

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**Thematic Program:** Biochemistry & Structural Biology

**Program Director:** Tim Townes, Ph.D.

**Program Co-Directors:** Dmitry Vassilyev, Ph.D. & Kirill Popov, Ph.D.

### **Thematic Program Description** (*provided by Program*)

The main goal of Graduate Program in Biochemistry and Structural Biology is to provide rigorous theoretical and experimental training for a successful career in these broad disciplines. This theme brings together faculty members whose research interests include gene transcription and regulation, chromatin remodeling, regulation of the cell cycle, micro RNA processing, post-translational modifications, cell metabolism and metabolic control, enzyme catalysis and regulation, macromolecular structure and function, computational and structural biology. The program offers extensive opportunities for interactions with basic and clinical scientists. Biochemistry and Structural Biology students participate in the Graduate Basic Science (GBS) Program, which provides a common first year core curriculum. Students usually choose a mentor at the end of the first year and begin to select elective courses in the Spring of the first year. Academic requirements are normally completed within two years, at which point the student devotes his or her full-time to an original investigation culminating in the Ph.D. Thesis. It is expected that within a total of 5 years in the program students will publish papers in highly rated journals and will be competitive for the best postdoctoral positions at academic institutions or in industry.

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**Thematic Program:** Cancer Biology

**Program Director:** Dan Welch, Ph.D.

### **Thematic Program Description** (*provided by Program*)

The Cancer Biology Graduate Program at UAB is committed to the highest quality course of study and research leading to the Ph.D. degree. The program builds upon a long tradition of interdisciplinary basic and translational research at an NCI-designated Comprehensive Cancer Center. Highly motivated, self-reliant students will receive training that will enable them to think logically, critically analyze data, integrate findings from multiple disciplines, make significant contributions to understanding cancer and become independent cancer researchers in academia and industry in the 21st century. Graduate students will be selected because they share a common goal of making new discoveries in biological sciences that will lead to reducing cancer morbidity and mortality. Students will have opportunities to interface with basic and clinical researchers and will be expected to contribute to a collegial, collaborative and innovative environment.

During the first semester, students take courses that will provide background and breadth in the biological sciences, experimental design and interpretation. Also during the first year, students will rotate through several laboratories in order to become familiar with research problems being addressed and the varied approaches of the investigators. Faculty have primary appointments in almost every department at UAB and within the UAB medical school; so, students will have opportunities to conduct research that most interests them. The rotations will ensure that there is a good match between the style of the mentor and the needs of the student. Thereafter, a more specialized curriculum will provide intellectual underpinnings for cutting-edge doctoral cancer research. During the second year, students will also more extensively participate in campus-wide seminars, journal clubs, group meetings, symposia and program-based activities, such as shadowing oncologists. The faculty are also committed to equipping students with skills needed to succeed post-graduation, such as grant and manuscript preparation and presentation skills.