University Council

April 11, 2025

UNIVERSITY CURRICULUM COMMITTEE – 2024-2025
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Dear Colleagues:

The attached proposal from the Franklin College of Arts and Sciences for an Area of Emphasis in Therapeutics Discovery under the major in Biochemistry and Molecular Biology (M.S., Non-Thesis) will be an agenda item for the April 18, 2025, Full University Curriculum Committee meeting.

Sincerely,

Susan Sanchez, Chair

cc: Provost S. Jack Hu
Dr. Marisa Pagnattaro

PROPOSAL FOR AN AREA OF EMPHASIS

Date: February 4, 2025

School/College: Franklin College of Arts and Sciences

Department/Division: Biochemistry and Molecular Biology

Program (Major and Degree): Biochemistry and Molecular Biology (M.S., Non-Thesis)

Area of Emphasis Title: Therapeutics Discovery

CIP: 26021000

Which campus(es) will offer this program? Athens

Proposed Effective Date: Fall 2026

1. Area of Emphasis Description:

The Department of Biochemistry and Molecular Biology have developed the proposed Area of Emphasis in Therapeutics Discovery under the major in Biochemistry and Molecular Biology (M.S., Non-Thesis) as a paradigm for increased partnerships between the University of Georgia and the biotechnology industry. This program will launch in fall 2026 and is expected to establish UGA as a leader in preparing students for careers in biotechnology and therapeutics discovery. The state of Georgia is poised to emerge as a hub for the biotechnology industry as the bioeconomy expands. Georgia universities spent $3.3B on research and development in the year 2022, with more than $800M in life-sciences funding from the National Institutes of Health. This activity likewise spurs, attracts, and retains biotech companies, including major investments from Boehringer Ingelheim, Johnson & Johnson, Takeda, Aruna Bio, GeoVax Labs, and Metaclips Therapeutics, to name a few. Supportive governmental policies, exceptional universities, lower cost of living, favorable climate, a major international airport, and worker training programs define Georgia as a hub for growth and innovation. The faculty in Biochemistry and Molecular Biology believe that partnering with companies will promote further program development at UGA and increase student placement as this sector grows within Georgia.

A defining feature of the area of emphasis will be a summer internship with a company in the field, building critical career connections as well as relevant scientific and professional skills. The faculty anticipate forming partnerships with private industry to provide students with paid internships in the Athens area, within Georgia, and throughout the country. The faculty are currently expanding connections between the Franklin College of Arts and Sciences and potential partner companies to support these internships. The faculty expect that internship availability may limit program enrollment, though participating companies will gain an important opportunity to identify future talent for their workforce. An additional important feature of the program will be coursework in organizational leadership, project management, and communication in addition to specific theoretical and laboratory-based scientific training.

The faculty anticipate three primary impacts from this program. First, this program was inspired by a significant philanthropic commitment to UGA and creates an opportunity to engage students to support

future program development and implementation. Second, working closely with leading biotechnology companies will foster connections which will improve student placement following graduation and enable potential scientific collaborations. Lastly, success of this program will be evident from increased sponsored research support for UGA laboratories. The faculty anticipate that UGA will become renowned as a valuable source for highly skilled graduates and sponsored research collaboration. Increased corporate partnerships, developed following the implementation of the Area of Emphasis in Therapeutics Discovery program, are expected to provide new career opportunities for UGA students, establish UGA as a leader in training students for these jobs, promote growth of the biotechnology sector in Georgia, and increase sponsored research in the biotechnology sector at UGA.

2. Major Requirements:

Entrance Requirements

Apply to the UGA Graduate School and include the following:

1. 3 letters of recommendation, with the average student having one or more strong letters of recommendation from Principal Investigators or Industrial Scientists.
2. Statement of Purpose emphasizing career goals, scientific interests, and research experience.
3. Undergraduate transcript. The minimum GPA is 3.0.
4. International students: For students whose primary language is not English, proof of English proficiency is required. Students need to submit official university documents according to the UGA Graduate School requirements. Students will also have to show a certificate of finances upon acceptance to the program.

Students must earn a grade of "C" (2.0) or better for each course.

Required Courses (22 hours)

BCMB 6XXX, Organizational Leadership (3 hours) – **NEW**
BCMB 6XXX, Project Management (3 hours) – **NEW**
BCMB 7XXX, Spring Break Visit to Biotechs in Boston, (1 hour) – **NEW**
BCMB 7210, Internship, (3 hours) – **NEW**
BCMB(CBIO)(GENE) 8113, Advanced Genetics, Cell Biology, Biochemistry, and Molecular Biology (1a) (2 hours)
BCMB(CBIO)(GENE) 8114, Advanced Genetics, Cell Biology, Biochemistry, and Molecular Biology (1b) (2 hours)
CBIO 6XXX, Foundations in Drug Discovery (4 hours) – **NEW**
PHAR 6010, Pharmaceutical, Biotechnology, and Device Industries (4 hours)

Elective Courses (8 hours)

Choose a minimum of 8 hours from either of the following groups.

Track One: Small Molecule Drug Discovery
CBIO 6500, Medical Parasitology (3 hours)
CHEM 6120, Chemistry of Drug Design and Drug Action*
CHEM 6615, Soft Materials (3 hours)
CHEM 8390, Special Topics in Organic Chemistry (1-4 hours)
PMCY 6300, Medicinal Chemistry (3 hours)
PMCY 6410E, Robotic Technology in Drug Discovery and Toxicology (2 hours)
*A course change proposal to create a split-level course, CHEM 4120/6120, will be completed in CAPA prior to offering this course.

Track Two: Biologics

BCMB(BCHE) 6030L, Bioprocess Technology (4 hours)
CBIO(MIBO)(IDIS) 6100-6100D, Immunology (4 hours)
PMCY 6600, Biological Therapeutics (3 hours)
STAT 6315, Statistical Methods for Researchers (4 hours)

Biochemistry and Molecular Biology (M.S.) – fallback from Ph.D.	**Biochemistry and Molecular Biology (M.S., Non-Thesis)** with an Area of Emphasis in Therapeutics Discovery
Required Courses: GRSC 7001, GradFIRST: First-year Research and Scholarship Training Seminar (1 hour) BCMB 8060, Biochemistry and Molecular Biology Seminar (2 hours) BCMB 8070, Research Discussion (1 hour) BCMB 8080, Current Literature in Biochemistry and Molecular Biology (1 hour) BCMB(CBIO)(GENE) 8113, Advanced Genetics, Cell Biology, Biochemistry, and Molecular Biology (1a) (2 hours) BCMB(CBIO)(GENE) 8114, Advanced Genetics, Cell Biology, Biochemistry, and Molecular Biology (1b) (2 hours) BCMB(CBIO)(GENE) 8213, Advanced Genetics, Cell Biology, Biochemistry, and Molecular Biology III (2 hours) BCMB(CBIO)(GENE) 8214, Advanced Genetics, Cell Biology, Biochemistry, and Molecular Biology IV (2 hours) BCMB 8990, Problems in Biochemistry and Molecular Biology (2 hours) BCMB 9000, Doctoral Research (1-14 hours) BCMB 9300, Doctoral Dissertation (3 hours)	**Required Courses:** BCMB 6XXX, Organizational Leadership (3 hours) BCMB 6XXX, Project Management (3 hours) BCMB 7XXX, Spring Break Visit to Biotechs in Boston, (1 hour) BCMB 7210, Internship, (3 hours) BCMB(CBIO)(GENE) 8113, Advanced Genetics, Cell Biology, Biochemistry, and Molecular Biology (1a) (2 hours) BCMB(CBIO)(GENE) 8114, Advanced Genetics, Cell Biology, Biochemistry, and Molecular Biology (1b) (2 hours) CBIO 6XXX, Foundations in Drug Discovery (4 hours) PHAR 6010, Pharmaceutical, Biotechnology, and Device Industries (4 hours)
Electives: 6000-8000 level BCMB electives (6 hours)	**Electives:** Elective Courses (8 hours) Choose a minimum of 8 hours from either of the following groups. Track One: Small Molecule Drug Discovery CBIO 6500, Medical Parasitology (3 hours) CHEM 6120, Chemistry of Drug Design and Drug Action CHEM 6615, Soft Materials (3 hours) CHEM 8390, Special Topics in Organic Chemistry (1-4 hours) PMCY 6300, Medicinal Chemistry (3 hours) PMCY 6410E, Robotic Technology in Drug Discovery and Toxicology (2 hours) Track Two: Biologics BCMB(BCHE) 6030L, Bioprocess Technology (4 hours)

Total: minimum of 30 hours	CBIO(MIBO)(IDIS) 6100-6100D, Immunology (4 hours) PMCY 6600, Biological Therapeutics (3 hours) STAT 6315, Statistical Methods for Researchers (4 hours) Total: 30 hours

Documentation of Approval and Notification

Proposal: Area of Emphasis in Therapeutics Discovery under the major in Biochemistry and Molecular Biology (M.S., Non-Thesis)

College: Franklin College of Arts and Sciences

Departments: Biochemistry and Molecular Biology

Proposed Effective Term: Fall 2025

School/College:

- Department of Biochemistry and Molecular Biology Head, Dr. Adam Barb, 2/11/2025
- Franklin College of Arts and Sciences Associate Dean, Dr. Paula Lemons, 2/18/2025
- Graduate School Associate Dean, Dr. Anne Shaffer, 4/9/2025