

BIOCHEMISTRY & MOLECULAR BIOLOGY

HIGHLIGHTS

- BMB has experienced exceptional growth: In the past decade, the number of undergraduates has doubled every 4 years.
- Professor Li-Jun Ma has been awarded a \$500,000 grant from the Burroughs Wellcome Fund to develop new anti-fungal therapies.
- The donation of a plant cell library of more than 2,000 species enables university researchers and industry partners to search for novel natural compounds with possible applications

EDUCATION

- 620 undergraduates
- 48 percent of majors are on the Dean's List.
- Over 100 undergraduates participated in research projects last year.

DEGREES

- BA/BS
- Five-year BS/MS
- PhD (through interdisciplinary graduate programs: Molecular and Cellular Biology, Plant Biology, Neuroscience and Behavior, and Organismic and Evolutionary Biology)

UNDERGRADUATE ACHIEVEMENTS

BMB undergraduates excel. In the past 5 years, BMB majors have been recognized on campus and off:

- Goldwater Scholar
- American Society of Plant Biologists Summer Research Fellowship
- Harvard Medical School Summer Honors Research Program
- Howard Hughes Medical Institute Summer Research Internship
- Stem Ambassadors
- Provost's Undergraduate Research Fellows (UMass Amherst)
- Leaders in the Making Award (UMass Amherst)
- 21st Century Leaders (UMass Amherst)
- Field Alumni Scholarship (UMass Amherst)
- Junior Fellows (CNS)
- CNS Leadership Committee
- Senior Leadership Award (BMB)

from human health to biofuels.

- Faculty serve on a dozen editorial boards of major journals.
- Faculty awarded over \$4.9M in funding for research in the areas of biomedicine and in plant growth and development from the National Institutes of Health, the National Science Foundation, the U.S. Department of Agriculture, the U.S. Department of Energy, Burroughs Wellcome Fund, and Merck.

- Beginning in spring 2016, Dragon Genes course will teach BMB majors about genetics and genomics in a novel and engaging way.

STUDENT ORGANIZATION

- UMass Biochemistry Club is an undergraduate chapter of the American Society of Biochemistry and Molecular Biology (ASBMB)

BY THE NUMBERS FY15

Tenure-track faculty	14
Lecturers	2
Research faculty	3
Postdoctoral fellows	14
Undergraduate majors	620
Graduate students	28
Research awards	\$4.9M

RESEARCH AREAS

Protein folding/trafficking and associated diseases:

How proteins are made, delivered to proper cellular location, and folded into functional 3-dimensional structures; examines how defects in these processes lead to disease.

Mechanisms of cellular signal transduction:

How signaling and metabolic networks are integrated and regulated to allow for proper cellular function and organismal development.

Plant and Environmental Interactions for Food, Fuel and Drugs:

Examines the interactions between plants and microbes and plants and the environment: plants and nitrogen-fixing bacteria, plants and fungal pathogens, plants and heat stress, plant natural products that are potential pharmaceuticals or biofuels.