



Hamilton College

Biology Department

2006-2007



The Biology Department at Hamilton has as its mission the enabling of all students, whatever their background, interests, and aspirations, to advance their understanding of the biological sciences through their participation in challenging classes and the research programs of individual faculty. We help students gain the knowledge and skills required for pursuing a lifetime of learning whether as a professional within the biological sciences or as a concerned citizen in a rapidly changing society.

Following an introduction to biology, either a two-semester survey or an accelerated one-semester course, the curriculum provides depth in a wide variety of subdisciplines (see faculty areas of expertise below). The Department supports four concentrations at Hamilton through the courses and collaborative research offered by its faculty: Biology, Biochemistry/Molecular Biology, Neuroscience, and Environmental Studies. During the senior year, all majors become actively engaged in research directly with a faculty member through the senior thesis program.

Faculty

Wei-Jen Chang, Ph.D.— State University of New York at Buffalo. *Biochemistry*. Gene evolution in ciliates; bioinformatics.

David A. Gapp, Ph.D.—Boston University. *Endocrinology*. Comparative endocrinology of gastro-entero-pancreatic hormonal peptides in reptiles.

Jinnie M. Garrett, Ph.D.—Texas A&M University. *Molecular Genetics*. Molecular mechanisms of nitrogen uptake and use in the yeast, *Saccharomyces cerevisiae*.

Herman K. Lehman, Ph.D.—Florida State University. *Cell Biology/ Neurobiology*. Developmental regulation of neuropeptides and neurotransmitter systems.

Michael L. McCormick, Ph.D.—University of Michigan. *Geomicrobiology*. Environ. engineering; cell and mineral mediated transformation of environmental contaminants.

Sue Ann Miller, Ph.D.—University of Colorado at Boulder. *Developmental Biology*. Cell division and death in vertebrate morphogenesis.

William A. Pfitsch, Ph.D.—University of Washington. *Botany/ Physiological Ecology*. Plant physiology, growth, and morphology in response to environmental limitations.

Patrick D. Reynolds, Ph.D.—University of Victoria. *Invertebrate Biology*. Functional morphology, molecular systematics, and evolution of marine molluscs.

Ernest H. Williams, Ph.D.—Princeton University. *Ecology*. Population biology and chemical ecology of butterflies; conservation biology.

Facilities

The Biology Department has now moved completely into Hamilton's spectacular, new, state-of-the-art Science Center, with well-designed teaching, learning, and studying spaces. Our laboratories contain essential equipment for education and research in contemporary biology, including both transmission and scanning electron microscopes, imaging workstations, radioisotope laboratory, scintillation and gamma counters, bioinformatics computing facility, nine-room greenhouse, environmental chambers, and numerous standard lab instruments. In addition, Hamilton is well situated to take advantage of a variety of habitats for field studies.

Students

No. majors	Biology	Bioc./Mol.Biol.	Neuroscience
Class of 2007	31	8	11
Class of 2008	23	5	10
Class of 2009	22	3	18

Recent student research projects

Relationship between trophic ecology and radular wear patterns in four rocky intertidal snails * Octopamine sensitivity and synaptogenesis in the common and lateral oviducts of *Manduca sexta* * Behavioral ecology of the Frosted Elfin butterfly * Role of differential cell proliferation in perforation and rupture of pharyngeal closing plates in chick embryos * A phylogenetic analysis of the class Scaphopoda (Mollusca) using molecular techniques * Insect octopamine transporters * Photosynthetic responses to light exhibited by three *Aster* species * Gastrointestinal peptides in the stomach and intestine of the American alligator * Characterization of amino acid permeases in yeast * Antiestrogenic mechanisms of alphafetoprotein peptides in breast cancer * Influence of magnetite on iron reduction rates by iron reducing bacteria * Plant chemical defense and herbivory of local plants

Life after Hamilton

In recent years, biology graduates have gone from Hamilton to a variety of professions as well as to:

Graduate School:

Harvard, Yale, Princeton, MIT, Cornell, Duke, George Washington, Virginia Tech, and the Universities of California-Santa Barbara, Delaware, Hawaii, Indiana, Iowa State, Maine, Michigan, Oregon, Oregon State, Pittsburgh, and Vermont

Medical School:

Rochester, Dartmouth, Albert Einstein, Temple, Boston University, Albany Medical College, Universities of Vermont, Connecticut, and Massachusetts, and SUNY Medical Centers

Dental School:

Tufts, SUNY Buffalo, Universities of Maryland, Connecticut

Veterinary School:

Cornell, Tufts, Univ. of Pennsylvania

Employment:

pharmaceutical companies, high school teaching, environmental education, and many more

For further information write or call:

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