

# Food Science

## 2012 Department at a Glance

### Points of Pride

- Ranked the top PhD research program in the U.S. by the National Research Council of the National Academy of Sciences.
- Rated #7 worldwide in high-impact citations in agricultural sciences scholarly journals.
- 3 faculty members rated as the most highly cited Agricultural Scientists in the world.
- Home to the Fergus Clydesdale Foods for Health and Wellness Center, which is supported by donations from the federal government, food industry and alumni.
- One of the top departments contributing to the UMass Amherst Development effort.
- Oldest Food Science program in the U.S.

### Education

- Rated the top department in the Student Satisfaction Survey for 4 out of the past 5 years; ranked second last year.
- Undergraduate concentrations include Food Science and Technology; Foods Health and Wellness; and Food Safety and Culinary Science.
- Graduate programs include a 5-year BS/MS, 1-year non-thesis MS, research thesis MS, and PhD degrees.
- Numerous faculty members have received research, teaching and advising awards.
- 30+ percent of our students receive departmental scholarships.
- 60+ percent of our students participate in industry internships.

### Leadership & Outreach

- Industry partnership, Strategic Research Alliance, has 20+ industrial members.
- The Food Science Policy Alliance addresses current and future issues of food policy and regulation for both domestic and international markets.
- Numerous faculty members have been appointed to leadership roles with the National Academy of Sciences' Institute of Medicine, and the State Department.



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### By the Numbers FY11

|                      |             |
|----------------------|-------------|
| Tenure-Track Faculty | 12          |
| Postdoctoral Fellows | 10          |
| Undergraduate Majors | 78          |
| Graduate Students    | 53          |
| Visiting Scholars    | 14          |
| Research Awards      | \$3,201,871 |

### Research Areas

#### *Food and Environmental Biotechnology:*

Biological systems for modification of whole organisms, tissues, cells, proteins, and biological molecules; development of novel plant tissue cultures; and whole plant systems.

#### *Physical-Chemical Properties of Food:*

Molecular-structural basis of food properties; mechanical testing of foods; nanotechnology and development of ingredients that improve food texture, appearance, taste and healthfulness.

#### *The Safety of Food:*

Microbiological problems in food handling and consumption; detection and prevention food borne pathogens and microbiological hazards, development of natural antimicrobial agents, and seafood safety.

#### *Foods for Health and Wellness:*

Characterization of the health promoting properties of bioactive food components; characterization of molecular properties of novel food ingredients; policy issues involving functional foods.

### Research Facilities

Instrumentation for determining chemical, physical, and biological characteristics of foods and food components including: emulsions; bioactive food components; natural products; food biopolymer; nanostructures; food-borne pathogens; microscopic characterization; plant and animal tissues culture; and food packaging.