

# IOWA STATE UNIVERSITY

of Science and Technology

## Food Science & Technology and Toxicology USDA NATIONAL NEEDS GRADUATE FELLOWSHIPS in Food Safety and Quality

Research Fellowship of \$22,000 per year For 3+ years  
- Tuition & Health Insurance Paid -

Ph.D. Fellowships in food toxicology will emphasize control of **food-borne hazards** and effects of those measures on **food safety and quality**. Fellows will be **the new guard** of food safety professionals with an appreciation of “farm-to-fork” control of food hazards and an understanding of the consequences of these interventions on food safety and quality. Iowa State University possesses a unique combination of advanced food science courses, toxicology courses and microbiology courses, research facilities and faculty expertise. The Fellows will set the standard for the **new food safety professionals** who think outside the traditional paradigm of food-borne hazard control.

To Request Application Materials, contact [FSTOX@iastate.edu](mailto:FSTOX@iastate.edu). Applications for these Fellowships will be accepted through the Food Science and Technology program or through the Interdepartmental Toxicology program at Iowa State University. Fellows must be U.S. citizens or permanent residents. Applicants for the Fellowship must also submit a statement summarizing their research interests and goals in food science and toxicology. Applicants must have an M.S. degree in an appropriate area or be of high enough caliber that they are eligible for the Ph.D. program with only a B.S. degree.

Food Science and Technology homepage: <http://www.fshn.hs.iastate.edu/>  
2312 Food Sciences, Ames, IA 50011-1061 1-515-294-6442

Toxicology Homepage: [http://molebio.iastate.edu/~L\\_Wild/toxhome.htm](http://molebio.iastate.edu/~L_Wild/toxhome.htm)  
2102 Molecular Biology, Ames, IA 50011-3260. 1-800-499-1972 ask for TOX.

Iowa State University homepage: <http://www.iastate.edu>  
Admissions, 100 Alumni Hall, Ames, IA 50011-2010 1-800-262-3810

**Research:** Initially, the fellowship applicants will spend a 3 week rotation in three of the 7 laboratories of the faculty members (listed below) on FSHN department research assistantships. This will allow the student to better assess their interests in the available projects, meet with graduate students, staff and postdoctoral fellows, and observe the graduate atmosphere of several labs prior to deciding on a research project and major professor. The students will apply for a major professor after the rotations. The fellowship faculty will approve all appointments to fellowship.

The proposed program of research focuses on the control of food-borne hazards and effects of those measures on food quality. We have selected 8 focus areas from which the fellows may elect their research project. Potential research areas include: control of *Listeria monocytogenes* in ready-to-eat (RTE) meat products; rapid detection of foodborne pathogens and spoilage organisms; inactivation of stress-adapted foodborne pathogens; toxicity & chemical characterization of naturally occurring toxicants; impact of antimicrobial interventions on quality characteristics of foods; impact of high pressure

processing on nutritive & health-related food components in food; the safety and quality of no-trans plant oils; and control mechanisms for mycotoxigenic fungi in foods.

### Fellowship Faculty

**Professor in charge: Dr. Aubrey Mendonca**, Associate Professor, [amendon@iastate.edu](mailto:amendon@iastate.edu)

<http://www.fshn.hs.iastate.edu/faculty/mendonca.php>

**Dr. Sam Beattie**, Assistant Professor, [beatties@iastate.edu](mailto:beatties@iastate.edu),

<http://www.fshn.hs.iastate.edu/faculty/beattie.php>

**Dr. Terri Boylston**, Associate Professor, [tboylsto@iastate.edu](mailto:tboylsto@iastate.edu),

<http://www.fshn.hs.iastate.edu/faculty/boylston.php>

**Dr. Byron Brehm-Stecher**, Assistant Professor, [byron@iastate.edu](mailto:byron@iastate.edu),

<http://www.fshn.hs.iastate.edu/faculty/brehm-stecher.php>

**Dr. Stephanie Jung**, Assistant Professor, [jung@iastate.edu](mailto:jung@iastate.edu),

<http://www.fshn.hs.iastate.edu/faculty/jung.php>

**Dr. Patricia Murphy**, University Professor, [pmurphy@iastate.edu](mailto:pmurphy@iastate.edu)

<http://www.fshn.hs.iastate.edu/faculty/murphy.php>

**Dr. Pamela White**, University Professor, [pjwhite@iastate.edu](mailto:pjwhite@iastate.edu),

<http://www.fshn.hs.iastate.edu/faculty/pwhite.php>

**Special Options for Food Safety & Toxicology Fellows** . Fellows may work on materials for the Iowa State University Food Safety Web site with Extension faculty. Fellows may participate in food industry on-plant site HACCP plan development. An intern rotation with State of Iowa Toxicologist is an option. Fellows will participate in Preparing Future Faculty program <http://www.celt.iastate.edu/pff/>.

**Coursework** Fellows will be expected to take the following courses, for a Ph.D in Food Science and Technology and a Ph.D. in Toxicology. Course descriptions can be found at <http://www.iastate.edu/~catalog/> . The courses are selected from Food Science & Human Nutrition (FSHN), Toxicology (Tox), Biochemistry (BB), Microbiology (Micro), Veterinary Diagnostic & Production Animal Medicine (VDPAM) and Statistics (Stat).

<u>FSHN Courses</u>	<u>Joint Courses</u>	<u>Toxicology Courses</u>
FSHN 507	BB 404/405	Tox 501/502
FSHN 575	Stat 402	BB 542 – 2 modules or BB 451
FSHN 580	Tox 504 X 2	Tox 643
FSHN 590C	FSHN 519	Micro 504 or Zool 355
FSHN 606	FSHN 626	Tox 699
FSHN 695	FSHN 627	VDPAM 522
FSHN 699	FSHN 681	