

Board of Regents, State of Iowa

**REQUEST TO IMPLEMENT A NEW BACCALAUREATE, MASTERS,
DOCTORAL OR FIRST PROFESSIONAL DEGREE PROGRAM**

THE PURPOSE OF ACADEMIC PROGRAM PLANNING: Planning a new academic degree program provides an opportunity for a Regent University to demonstrate need and demand as well as the university's ability to offer a quality program that is not unnecessarily duplicative of other similar programs offered by colleges and universities in Iowa.

Institution: **Iowa State University**

Departments involved: Food Science and Human Nutrition (FSHN)

CIP Discipline Specialty Title: None available for Culinary Science (Food Science & Restaurant, Culinary and Catering Management)

CIP Discipline Specialty Number (six digits): 01.1001 & 12.0504

Level: B X M D FP

Title of Proposed Program: **Culinary Science**

Degree Abbreviation (e.g., Minor, B.S., B.A., M.A.): B.S.

Approximate date to establish degree: Month August Year 2008

Contact person(s): (name, telephone, and e-mail)

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Please provide the following information (use additional pages as needed).

1. Describe the proposed new degree program, including the following:
 - a. A brief description of the program and a statement of objectives including the student learning outcomes and how the learning outcomes will be assessed;

Culinary Scientists are cross-educated as both food scientists and chefs. The graduates combine the passion, skills and creative talent required in innovative food product development, with the scientific and technological knowledge required to provide safe, affordable, healthful and delicious food products for the food industry. Traditionally, “the chef helps conceive a concept, prepares a gold standard or meal prototype, and helps plan the presentation. The food scientist participates in conceiving the concept, applies his or her knowledge of available ingredients and processes, addresses food safety and nutritional concerns, and helps to solve packaging issues” (Clark 2006).

Learning outcomes for all FSHN students are noted on www.fshn.outcomesassessment; a similar list will be developed for Culinary Science students. The primary learning outcome for Culinary Science students is mastering the skills necessary to improve the quality, nutrition, and manufacturing of foods. Summative evaluations will involve an assessment of the academic performance of students, including GPAs, 4- and 5-year graduation rates, and via electronic

portfolio assessments (defined by the FSHN Outcomes Assessment Committee). We will track enrollment, paying particular attention to the first 1-5 years, and placement and salaries of Culinary Science graduates. Graduates and their employers will be surveyed on a regular basis to get feedback on the preparation of the graduates for their jobs. This approach is consistent with what we currently use to provide summative evaluations for our other majors. Finally, we will obtain feedback on the internship experiences we provide for the students, from the perspectives of both the student and the employer.

- b. The relationship of the proposed new program to the institutional mission and how the program fits into the institution's, college's, and department/program's strategic plan;

The Culinary Science program with an entrepreneurial focus meets both the College of Human Sciences and the College of Agriculture and Life Sciences strategic plans. Expanding human potential through enhancing health and well-being, while sharing science-based knowledge for the development of socially beneficial and environmentally sound food systems. The Culinary Science program will promote community and entrepreneurship, and apply science and technology in the human environment. Establishing this academic program addresses current societal and disciplinary changes and increased competition in the areas of food science, food service and culinary arts. We are being proactive in our efforts to begin the Culinary Science program at ISU, and the unique entrepreneurial focus we offer will strengthen our academic programs and prepare students to become future leaders within the food industry.

The introduction of the Culinary Science major will enhance enrollment in several ways. The planned transfer agreement with DMACC, who has an established and renowned culinary arts program right in our back yard, will provide a natural and easy linkage to increase student enrollment from Iowa community colleges. Transfer plans with other Iowa community colleges with culinary arts programs could follow. The novelty and strength of the program should enhance the visibility of ISU and increase name recognition. Food industry careers traditionally attract more males and minorities than many other careers. Thus, we would expect to improve gender balance in the College of Human Sciences by 5-10%, and increase minorities by 2 to 3%, especially Hispanic students. Also, food science programs traditionally attract students interested in science, but Culinary Science, with its emphasis on the art of cooking, will draw liberal arts students strong on creativity (Cornwell 2005). The resulting expanded pool of interested students should increase student credit hours (courses and internships) and fees from students.

Students in approved Culinary Science programs are required to take two, 2-credit internships during their undergraduate training: one in food science and one in culinary science. Thus, the program will naturally strengthen engagement with external audiences through collaborative partnerships, and promote opportunities for exchanges that enhance learning. We will need to develop linkages with internships for the students at corporations and commodity groups, such as: Barilla, Hormel, Cargill, ConAgra, Iowa Egg Council, Martin Brothers Distribution, Meredith Publishing, Purfoods/Mom's Meals, Pork/Beef Industry Council, Reimen Publishing, Soy for Life Foundation, and Well's Blue Bunny. We envision increased interest from these groups in sponsorships of courses, internships, and scholarships for our students in support of this new major, as well as for our other programs. Carol Peterson, Associate Director, ISU Dining, and Stewart Burger, Executive Chef, The Knoll, have expressed great interest in

creating internship experiences for the Culinary Science students within their operations, as well as providing other interactions within their operations for our students during their coursework.

The entrepreneurial focus of the program will result in the creation of venues for food service and management operations, such as morning coffee and/or snacks in the Joan Bice Underwood Tearoom, portable carts in LeBaron Hall or other locations, such as Hawthorne Court, where students can sell their created signature products along with established products like specialty coffees, etc. Another opportunity might be having cooking classes available for the ISU and general public – for a fee. Our facilities could be readily adapted to any of these businesses. In essence, the Culinary Science students will develop student-run businesses.

- c. The relationship of the proposed new program to other existing programs at the institution; describe how the proposed program will enhance other programs at the university.

The proposed Culinary Science program is a cross-disciplinary venture between food science in the FSHN Department and the HRIM program at Iowa State University. Also, ISU Dining will provide appropriate experiences for our students. These linkages will bring together the faculty from our two departments and promote collaboration in areas other than just teaching/learning. An additional cross-disciplinary opportunity exists with the new Nutrition Wellness Research Center (NWRC), where undergraduate research projects in nutrition, health and wellness can be cultivated and linked to the Culinary Science program. New functional food ingredients being studied in the NWRC can be utilized by the Culinary Science students to create signature products for their entrepreneurial activities.

- d. The relationship of the proposed new program to existing programs at other colleges and universities in Iowa, including how the proposed program is different or has a different emphasis than the existing programs; and

There are no other Culinary Science programs in Iowa. Culinary art training is offered at several Iowa community colleges. Enrollment in these programs is increasing; a Culinary Science program at ISU would provide a B.S. degree in this field of study.

- e. Special features or conditions that make the institution a desirable, unique, or appropriate place to initiate such a degree program.

The Department of Food Science and Human Nutrition and the Program of Hotel, Restaurant and Institution Management are well positioned to provide a high quality program in Culinary Science with national visibility because of our past performance and reputation in our respective areas. Our program will have clear advantages over programs offered by other institutions. First, the degree program will be available entirely at ISU, allowing the graduate to get all the education and training at one institution. Currently, only the programs at Southwest Minnesota State University and Clemson University offer this four-year option. Second, the ISU experience will include an entrepreneurial focus, thus giving graduates an edge in the business world. Finally, a review of the programs offered elsewhere suggests that the academic rigor we offer will be superior to that obtained from the other current programs. FSHN and HRIM programs at ISU provide students strong science and management preparation and would provide a solid basis for a Culinary Science curriculum. An ISU Culinary Science program would prepare students more effectively in food safety and sanitation, nutrition, food chemistry and

analysis, food microbiology, food processing and engineering, and applied food science than current culinary arts programs.

- f. Does the proposing institution have personnel, facilities, and equipment adequate to establish and maintain a high quality program?

The College of Human Sciences, Teaching Innovation Initiative and Entrepreneurial Program Initiative, recently awarded 3-yr funding for a Culinary Science director (1/2-time lecturer position); Erica Beirman has been hired to fill this position. The Department of Food Science and Human Nutrition provided funding for FSHN faculty (Dr. Pam White and Ms. Linda Svendsen) to attend the Research Chefs Association's 5-day training programs in culinary arts: *Advanced Culinary Arts for Food Technologists: a Culinology Workshop*, St. Helena, CA, August 27-31, 2007. Once the program has been established, it will be self-sustaining via sponsored funding by corporations, tuition dollars based on student credit hours and increased student majors, grants, and the entrepreneurial component of the program (see attached budget). Students in the Culinary Science program will develop a business plan in year 2 and implement an approved business plan in year 3. This fee for service venture (start-up business) will be a signature piece to the program and be sustainable over time, eventually providing a positive cash flow to help cover program expenses.

- g. How does student demand for the proposed program justify its development?

The HRIM major has grown by 14% over the past few years, from 187 students in Fall 2003 to 213 students in Fall 2006. In Fall 2006, new student admissions were up to 24 in food science from an average of 14 new students over the past seven years. Graduates of Culinary Science programs, with the unique skills and talents of each discipline, are in high demand to fill food product development positions in the food processing, corporate chain restaurant industries, and foodservice equipment manufacturing industries. Many graduates also will form their own businesses. When asked about the new Culinary Science programs being developed, Julie Larson Bricher, editorial director of the trade publication *Food Safety Magazine* (2005), said "It's difficult to see a downside to any endeavor that has a scientific underpinning and can lead to safer and more wholesome food. Culinologists who work in restaurants and institutions will not only have the chef's eye for presentation but the scientific knowledge that can prevent contamination in food handling."

2. Describe the state and/or national workforce need and/or demand for graduates of the proposed program currently and in the near future (provide documentation about the sources of data used to estimate need and demand.)

Culinary Science programs are new. The first employed graduate, in December 2003, began working immediately for Wells Blue Bunny, LeMars, IA. Culinology/Culinary Science graduates who responded to a survey by the RCA reported beginning salaries between \$40,000 and \$45,000 (T. Kline, February 2007, personal communication). We do not have enough history

of graduates in the major to learn of salaries after years of work. Currently, only seven universities and colleges in the United States, all but two coupled with community colleges, offer Culinary programs. The programs reside at 1) Kendall College and Dominican University, 2) Orange Coast Community College and California State Polytechnic University-Pomona, 3) The University of Massachusetts-Amherst, 4) Southwest Minnesota State University, 5) Metropolitan Community College and University of Nebraska-Lincoln, 6) Clemson University, and 7) University of Cincinnati/Cincinnati State Technical and Community College. During 2006, there were 206 Culinary Science/Culinary students enrolled in programs, nationally. This number is expected to increase as more universities begin offering the programs, and as potential students become aware of this major. A survey of 23 (of 100) post-secondary culinary programs in the United States reported that only 10% offered a bachelor's degree (La Lopa 2006).

3. List all other public and private institutions of higher education in Iowa currently operating programs similar to the proposed new degree program. (For comparison purposes, use a broad definitional framework, e.g., such identification should not be limited to programs with the same title, the same degree designation, having the same curriculum emphasis, or purporting to meet exactly the same needs as the proposed program.)

None

If the same or similar program exists at another public or private institution of higher education in Iowa, respond to the following questions:

- a. Could the other institution reasonably accommodate the need for the new program through expansion? Through collaboration?
 - b. With what representatives of these programs has there been consultation in developing the program proposal? Provide a summary of the response of each institution consulted.
 - c. Has the possibility of an inter-institutional program or other cooperative effort been explored? What are the results of this study? (Consider not only the possibility of a formally established inter-institutional program, but also how special resources at other institutions might be used on a cooperative basis in implementing the proposed program solely at the requesting institution.)
4. Estimate the number of majors and non-majors students that are projected to be enrolled in the program during the first seven years of the program.
- a. Undergraduate

Undergraduate	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Majors	5	5 (10 total)	10 (20 total)	10 (30 total)	10 new, 10 graduating (30 total)	10 new, 10 graduating (30 total)	10 new, 10 graduating (30 total)
Non-Majors	0	0	0	0	0	0	0

- b. Graduate

Graduate	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Majors	0	0	0	0	0	0	0
Non-Majors	0	0	0	0	0	0	0

c. What are the anticipated sources of these students?

The Department of FSHN currently has 79 Food Science majors, and the Program of HRIM currently has 213 majors. Our goal for 2010 is to have ~30 to 40 more students in food-related curricula. We expect the Culinary Science students to come from the consumer food science option in FSHN, HRIM, Business, DMACC, as well as attracting new students directly from high schools. The overall increase in students should be 5 in each of the first two years, and 10 in succeeding years, for a total of 30 students by academic year 2010-11. We plan to recruit new students from Iowa and surrounding states and transfer students from Iowa community colleges.

5. If there are plans to offer the program away from the campus, briefly describe these plans, including potential sites and possible methods of delivery instruction.

There are no plans to offer the Culinary Science program away from the ISU campus, but the 2 required internships will have ISU credit. These internships will be developed on the ISU campus, in Iowa and around the U.S. and, in time, internationally.

6. Has the proposed program been reviewed and approved by the appropriate campus committees and authorities? List them:

FSHN and AESHM Department Chairs (MacDonald and Kunz, 3-2-07; Bosselman)

FSHN Curriculum Committee (Sept. 26, 2007) and FSHN Faculty (10-16-07, 26 yes, 0 no, 0 abstain; electronic attachment)

HRIM Program, 10-10-07 (electronic attachment)

College of Human Sciences Curriculum Committee (Nov. 16, 2007)

College of Agriculture and Life Sciences Curriculum Committee (Nov. 13, 2007)

Faculty Senate Curriculum Committee (Nov. 28, 2007)

Faculty Senate Academic Affairs Committee (Feb. 18, 2008)

Faculty Senate Executive Committee (Feb. 26, 2008)

7. List date the program proposal was submitted to the Iowa Coordinating Council for Post High School Education (ICCPHSE) and the results of listserv review. (THIS WILL BE FILLED IN BY THE PROVOST OFFICE.)

8. Will the proposed program apply for accreditation? When?
NO

9. Will articulation agreements be developed for the proposed program? With whom?

Yes, with Des Moines Area Community College. The planned linkage to the culinary arts program at DMACC will strengthen our ties with this important community college. We will create

transfer plans from DMACC to ISU to encourage students to enter the Culinary Science program at ISU. After successfully working out the DMACC link, we also would like to pursue articulation agreements with other Iowa community colleges that offer 2-year culinary arts degrees, such as Kirkwood Community College.

10. Describe the faculty, facilities, and equipment that will be required for the proposed program.

World-class, experienced faculty members in both departments are interested in the Culinology program: FSHN faculty Terri Boylston, PhD, Suzanne Hendrich, PhD, Mark Love, PhD, Ruth MacDonald, PhD, Aubrey Mendonca, PhD, Pat Murphy, PhD, Anthony Pometto, PhD, Ken Prusa, PhD, Cheryll Reitmeier, PhD, Linda Svendsen, MS, Pamela White, PhD, and Lester Wilson, PhD and Hotel, Restaurant, and Institution Management Faculty members Robert Bosselman, PhD, RD CFBE, Stewart Burger, MS, Dawn Fiihr, MS, Shirley Gilmore, PhD, RD, Miyoung Jeong, PhD, John Kramer, MS, Haemoon Oh, PhD, CHE and Susan Wohlsdorf-Arendt, PhD, RD. Dr. Murlidhar Dharmadhikari, an enology expert in ISU Extension and collaborator in the FSHN Department, may also participate. In addition, the faculty members who will lead the Culinology program have been teaching the lab-based classes required of the students for many years: White for over 30 years, Reitmeier for 25 years, Svendsen for 8 years, and Arendt for 4 years.

Excellent and unique facilities, including the MacKay food labs, the Joan Bice Underwood Tearoom, and the Center for Crops Utilization Research processing facility are attracting students to our departments, but establishing a Culinary Science major will bring even greater recognition and interest in our programs.

11. From where will the financial resources for the proposed program come (list all that apply, e.g., department reallocation, college reallocation, grants, new to the university)?

SOURCES	TOTAL AMOUNT
FSHN for White, Svendsen CIA training	\$10,000
College of Human Sciences, 2007-8	\$40,000
College of Human Sciences, 2008-9	\$35,000
College of Human Sciences, 2009-10	\$35,000

12. Estimate the total costs/total new costs (incremental increases each year in expenditures) that will be necessary for the next seven years as a result of the new program:

13.

	TOTAL COSTS	TOTAL <u>NEW</u> COSTS
Year 1	\$ 39,619.00	0
Year 2	\$ 36,454.00	0
Year 3	\$ 44,947.62	\$ 8,493.62
Year 4	\$ 44,447.62	0
Year 5	\$ 46,674.05	\$2,226.43

Supplemental materials

(to be used at Iowa State University in the review of the proposal):

13. Program requirements, including:
 - a. prerequisites for prospective students;
 - b. language requirements;
 - c. courses and seminars presently available for credit toward the program;
 - d. proposed new courses or modifications of existing courses;
 - e. thesis and non-thesis options in master's programs;
 - f. implications for related areas within the university;
 - g. admissions standards for graduate programs

a. See attached curriculum for Culinary Science program, 4-yr plan

b. There is no language requirement.

c. All courses in the proposal are currently available, except FSHN 114, FSHN 314 and FSHN 491 D.

d.

FS HN 114 Introduction to professional skills in Culinary Science (0-6) Cr. 1 S.

Introduction to Culinary Science. Students will develop fundamental culinary skills by arranged on-campus work experience (100 hours). Sessions with instructor arranged.

FS HN 314 Professional and Educational Preparation in Culinary Science (1-0) Cr. 1 S.

Introduction to the roles culinary scientists hold within industry including: product development, research and development, and quality assurance. Discussions focused on professional and educational development, enhancement of communication skills, and discussion of professional ethics and emerging issues and trends within the Culinary Science industry.

FS HN 491-D Culinary Science Internship Cr. 2

f. ISU Dining Services

14. Attach to the program proposal memos from the department chair(s), the college dean(s), and other appropriate persons, agreeing to the allocation of new resources and/or the reallocation of resources as described in the Regents questions

MacDonald/Kunz, 3-2-07 (electronic attachment)

Achterberg/Andre, 6-1-07 (paper copy)

15. Attach to the program proposal, letters of support, recommendations, and statements when appropriate:

a. from programs at the other Regents universities

b. from programs and departments at ISU which are associated with the proposed program or have an interest in the proposed program

a. None

b. ISU Dining

Notes:

1. The CIP Specialty name and number is found at:
<http://nces.ed.gov/pubs2002/cip2000/>

March 2008