

UNIT REPORT

Food Science (PhD) - Reviewer's Report - Academic Data

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Food Science (PhD)

PhD in Food Science Mission

Mission:

The mission of the Food Science and Human Nutrition Department is to provide progressive and effective programs in teaching, research, and extension which meet the needs of the citizens of Florida as well as benefit the nation and the global population. This mission is accomplished by faculty and staff through resident and distance instruction, research, and extension. As part of this mission, the Department is committed to education and training of a diverse graduate student body who go on to develop a lifelong desire for learning and who become productive individuals dedicated to the improvement of the health and well-being of society. In addition, the Department supports the discovery and translation of knowledge through rigorous research that underscores the value of food and nutrition to the prevention and treatment of common diseases and disorders in people around the world. The Food Science and Human Nutrition Department's graduate program supports the missions of the College and University to serve the state's and nation's critical needs by contributing a well-qualified and broadly diverse citizenry prepared to lead and participate in the workforce through graduate education and to expand our understanding of the natural world, the intellect of the senses through graduate student research.

Start: 07/01/2017**End:** 06/30/2018

PG 1 Increase Enrollment and Caliber of Incoming Students

Goal: Increase the number of doctoral graduate students while attracting higher-qualified students overall.**Evaluation Method:**

- We enumerated new students and assessed their credentials and compared the data with those for the previous 3 years. Evaluated numbers and credentials of PhD students active in 2017-18.
- We examined applicants vs admitted vs enrolled data for the 2017-18 year.

Results:

- Number of Ph.D. students = 15. The number of students graduating in the 2017-18 academic year was 2. The number of new students starting in 2017-18 was 2. The previous year matriculation was 4 and the year before that it was 3.
- Number of Ph.D. applicants for the 2017-18 year was 13, admitted was 2, enrolled was 2.
- The average composite GRE score for active PhD students in 2017-18 is 308. The score is well above the 300 figure, which is generally the department's minimum for acceptance. Additionally, no incoming students required conditional admittance as we are targeting acceptance generally only for Verbal scores of at least 140, regardless of domestic or international status.

XOn Campus: true**XProgram CIP:** 01.1001**XOnline:** false**XOther Site:** false**XIf Other Site:**

PG 2 Student Diversity

Goal: Maintain or increase the number of minority students and promote diversity of the student body.**Evaluation Method:**

- Assessed number of minority and international students in FS doctoral program for 2017-18.

Results:

- The international student body was 9 of 15 or 60%; these students hailed from several different countries including China, Libya, and Iraq.
- Percentage of international students is slightly lower than last year (which was 65%); this may indicate possible challenges recruiting high-performing international students in the future.
- There are two underrepresented minority students in the program (1 Black, 1 Hispanic); both are fully funded.

XOn Campus: true**XProgram CIP:** 01.1001**XOnline:** false**XOther Site:** false**XIf Other Site:**

PG 3 Female Graduate Student Enrollment

Goal: Maintain female graduate student enrollment.

Evaluation Method:

- Enumerated female students in FS doctoral program for 2016-18.

Results:

- Enrollment of female students in the FSHN doctoral program was 10/15 or approximately 67% of total active 2017-18 doctoral students. This was similar to 2016-17, where that percentage was 65%

XOn Campus: true

XProgram CIP: 01.1001

XOnline: false

XOther Site: false

XIf Other Site:

PG 4 Quality of Graduate Student Population

Goal: Enhance/maintain the quality of the graduate student population.

Evaluation Method:

- Determine the average GRE scores of active students in the doctoral program in 2017-18, including Verbal score.
- Track current GPA of active students in the UF doctoral program.

Results:

- Average GRE scores for doctoral students during 2017-18 was 308; this was slightly higher than the average score of 306 from 2016-2017. We also began tracking average Verbal scores on the GRE in order to gauge potential ability to meet teaching requirements; the average Verbal (V) GRE score for 2017-18 was 150.
- UF GPA of active students in 2017-18 averaged above 3.0 for all semesters for 100% of students.

XOn Campus: true

XProgram CIP:

XOnline:

XOther Site:

XIf Other Site:

PG 5 Advanced Communication & Computer Skills

Goal: Apply advanced communication skills and computer skills.

Evaluation Method:

Student PowerPoint or equivalent and/or 3 Minute Thesis™ presentations in Research Planning and Food Science Seminar; review of course grades in FOS 6915 and/or FOS 6938.

Results:

- 100% of FS doctoral students who were required to do so delivered at least one acceptable scientific presentation with PowerPoint in either our departmental Research planning course and/or our departmental Food Science Seminar in 2017-2018.

XOn Campus: true

XProgram CIP: 01.1001

XOnline: false

XOther Site: false

XIf Other Site:

PG 6 Research Proficiency

Goal:

Develop and apply research proficiency, including authoring abstracts and manuscripts and presenting research findings at scientific meetings.

Evaluation Method:

- Documentation of research abstracts, journal manuscripts, and/or scientific meeting presentations/posters were assessed for all students required (waived year 1 and 2 of doctoral program).

Results:

- 100% doctoral students required in 2017-18 to do so delivered at least one abstract, presentation, poster or a manuscript during that time period.

XOn Campus: true

XProgram CIP: 01.1001

XOnline:

XOther Site:

XIf Other Site:

SLO 1 Knowledge

Outcome: Explain and apply principles of food science and technology.

SLO Area (select one): Knowledge (Grad)

Assessment Method:

- Program of study
- Written comprehensive exam
- Oral comprehensive exam
- Dissertation defense
- Seminar presentation
- All students were reviewed

SLO Not Assessed This Year:

Results:

- The threshold of acceptability is for 90% of all students in the program to successfully pass and/or attain at least one of the assessment milestones during the course of academic year 2017-18. Fifteen active doctoral students successfully met at least one of the assessment milestones.
- The percentage is 100%, which met the criterion for success.

Start: 07/01/2017

End: 06/30/2018

Threshold of Acceptability: 90

How many students did you assess for this outcome?: 15

How many students met the outcome?: 15

What percentage of students met the outcome?: 100

Does this meet your threshold of acceptability?: Yes

SLO 2 Skills

Outcome: Use critical thinking to evaluate research design and experiments and the scientific literature.

SLO Area (select one): Skills (Grad)

Assessment Method:

- Satisfactory performance in graduate-level coursework involving examination of the scientific literature
- Dissertation proposal
- Dissertation
- Comprehensive examination
- Seminar presentation
- All students were reviewed

SLO Not Assessed This Year:

Results:

- The criterion for success is for 90% of students to successfully fulfill at least one of the milestones by the beginning of the second year. All students past their first year of study met this requirement. This meets the criterion for success.

Start: 07/01/2017

End: 06/30/2018

Threshold of Acceptability: 90

How many students did you assess for this outcome?: 13

How many students met the outcome?: 13

What percentage of students met the outcome?: 100

Does this meet your threshold of acceptability?: Yes

SLO 3 Skills

Outcome: Identify appropriate research methodologies, execute a research plan and interpret results for the discovery of new information.

SLO Area (select one): Skills (Grad)

Assessment Method:

- Dissertation proposal
- Research performance
- Dissertation
- Comprehensive examination
- Dissertation defense
- Final seminar
- All students are assessed

SLO Not Assessed This Year:

Results:

- The criterion of success is for 90% of students beginning their third year onward to successfully pass at least one of the assessment milestones during the academic year 2017-18. All students in this category met at least one of these requirements. This meets the criterion for success.

Start: 07/01/2017

End: 06/30/2018

Threshold of Acceptability: 90

How many students did you assess for this outcome?: 9

How many students met the outcome?: 9

What percentage of students met the outcome?: 100

Does this meet your threshold of acceptability?: Yes

SLO 4 Professional Behavior

Outcome: Interact with professional peers, faculty, and staff with honesty, ethical behavior, respect, fellowship, and cooperation.

SLO Area (select one): Professional Behavior (Grad)

Assessment Method:

- Adherence to the UF Honor Code (evidenced by student permanent file)
- Annual written evaluations
- Observations and feedback to the supervisory committee
- All students were assessed

SLO Not Assessed This Year:

Results:

- The criterion for success is for 90% of all active students to have no additions to their permanent file indicating concern with SLO #4 during the year 2017-2018. Fifteen of 15 active doctoral students had no adverse issues noted in their file in 2017-18, for a percentage of 100%.
- This meets the criterion for success.

Start: 07/01/2017

End: 06/30/2018

Threshold of Acceptability: 90

How many students did you assess for this outcome?: 15

How many students met the outcome?: 15

What percentage of students met the outcome?: 100

Does this meet your threshold of acceptability?: Yes

PhD - Food Science

Program: Food Science (PhD)

Programmatic Use of Results:

Use of Assessment Results to Enhance Food Science Doctoral Program & Action Items for 2017-18

- FS faculty regularly discuss ways for attracting high quality graduate students, both MS and PhD. Food science faculty maintain research programs that are suited to Master's degree students and as well as doctoral students due to the excellent job placement for Food Science MS students. In addition, over the last few years, the number of food science faculty has been markedly reduced by attrition, thus reducing mentoring capacity of the FS faculty as a whole.
- We discussed English language capability as a function of overall doctoral success, hence our target minimum of 140 for the Verbal GRE score.

- Active and potential doctoral student quality and numbers were reviewed by faculty at the annual faculty teaching retreat in May 2018, as well as by the FSHN Graduate Committee in 2017-18 meetings.
- Based on our continual review, we updated department websites to provide higher-quality usable information to potential graduate students; we increased our presence at scientific meetings such as IFT and IAFP, and FAFP to better recruit students who attend these meetings and are of presumably high caliber than students who do not attend these meetings.
- We admitted fewer conditional applicants for doctoral programs than in past years (zero in year 2017-18) and we continued this practice while increasing doctoral student numbers.
- FS faculty discussed results at their regular meetings, with a detailed discussion at the annual instructional retreat.
- Based on our results, we highlighted minority-focused doctoral programs at UF in faculty meeting updates, ensuring that FS faculty are fully aware of minority opportunities and resources.
- Graduate coordinator participated in Graduate School Information Day in Fall 2017 with focus on information dissemination to under-represented minority students with STEM backgrounds that would be viable applicants for our doctoral program. Discussions were also initiated with three Chairs of food science-related departments at HBCUs.
- FS faculty reviewed results at annual meeting, and re-iterated commitment to support of female students in our STEM discipline.
- Based on our data, we determined that we are targeting potential female applicants effectively and fairly, and subsequently admitting and enrolling these students.
- Research Planning and FS Seminar instructors reviewed respective students.
- Based on our results both Research Planning and FS Seminar instructors incorporated additional guidance into their respective syllabi to assist students in developing effective scientific presentations.
- We formalized use of course metrics as means of program assessment with instructional faculty so all FS faculty are aware of importance of these two courses in our program assessment.
- FS faculty reviewed the research output by doctoral students, and discussed expectations for FS doctoral students, as well as opportunities for students to apply such expertise.

Program Results Not Reported This Year:

PhD in Food Science AAP Detail

End: 06/30/2018

Start: 07/01/2017

Providing Department: Food Science (PhD)

Assessment Cycle (All AAPs):

Assessment Cycle for:

Ph.D. in Food Science

College of Agricultural and Life Sciences

Analysis and Interpretation:

Yearly in August/September

Program Modifications:

Completed by September each year

Dissemination:

Completed by September each year

	Year	16-17	17-18	18-19	19-20
SLOs					
Content Knowledge					
#1		X	X	X	X
Skills					
#2		X	X	X	X
#3		X	X	X	X
Professional Behavior					
#4		X	X	X	X

SLO Assessment Rubric (All AAPs):

Evaluation Guide (Rubric) to Assess Graduate Student Learning Outcomes

Ph.D. Dissertation Proposal: Evaluation by Student's Supervisory Committee Members

Name: _____ Date _____

Proposal Title _____

Level of Expectations

Guide Does Not Meet Meets Exceeds

1. Literature Review and Background: explains and applies components and interactions of food and health showing advanced comprehension of previous work in the field

1. Hypothesis/Rationale/Objectives/Specific Aims: clearly and concisely delineates importance of the work; defines the scope of the problem; lists the goals of the work; describes the potential limitations of the research

1. Methodology: provides a clear outline of the experiments; Identifies appropriate experimental procedures and statistical analysis methods

1. Quality of Written Communication: proposal is logical, organized, and coherent and with acceptable grammar

1. Quality of Oral Communication: presentation is articulated in clear and logical order

1. Critical Thinking: connects relevant pieces of information about research design and the scientific literature to interpret current knowledge and scientific concepts in the field and in the proposed research

1. Context: Illustrates insightful ways to integrate and apply the proposed work in to this and other related fields

Additional Comments:

Printed Name of Committee Member: _____

Signature _____

Research (Graduate and Professional AAPs only):

Doctoral students are educated and trained in the core areas of Food Science, namely food chemistry, food processing and engineering, and food microbiology and safety. Intertwined among this core are related disciplines that students typically encounter, such as biotechnology, toxicology, sensory evaluation, quality assurance, and nutrition. Students obtain extensive theory, application, and hands-on experience with laboratory

instrumentation and pilot plant equipment in their research projects.

All students have a major advisor identified at the time of admission. The major advisor serves as the student's program mentor and coordinates the student's research activities as well as the selection of coursework, much of which is pertinent to the dissertation research. The major advisor guides the student in selecting the research topic and provides the resources needed to complete the work. In addition, the major advisor assists the student in selecting the other members of the supervisory committee, guides the student in preparing the research proposal (which is defended to the supervisory committee), coordinates the comprehensive examination, oversees the preparation of the final dissertation, and arranges for the final defense.

In the final semester, the student makes a formal presentation of their dissertation research findings in the department's regularly scheduled seminar program. Students also present their research findings at national conferences and often at international meetings. At the end, students are able to create and frame a research idea, formulate a hypothesis and specific aims, perform the experiments, collect and tabulate the data, apply the appropriate statistical analyses, and critically discuss the findings. The importance and significance of the research is documented by publishing the work in peer-reviewed journals.

Measurement Tools (Graduate and Professional AAPs Only):

All assessments and scoring rubrics are developed by faculty. Depending upon the area of student evaluation, the appropriate rubric is completed by one or more faculty. For example, the student's Research Proposal would be evaluated by each member of the supervisory committee whereas a student who served as a Teaching Assistant would be reviewed primarily by the faculty under whom the student had assisted. Assessment results are entered into a student database and hard copies are provided to the major advisor and the student's permanent file (maintained in the department's main office).

- **Plan of Coursework:** Students must submit a list of courses that satisfy the department's requirements for core courses depending upon the program emphasis, plus appropriate electives to meet the minimum course credit requirements of the department as well as the requirements of the Graduate School. The form is due by the end of the first year and must be signed by each committee member as well as the Graduate Coordinator. Any revisions must be approved by the committee and Graduate Coordinator. The Plan is updated with course grades each semester. SLO 1 is assessed yearly from this Plan.
- **Semester Evaluations:** Students are evaluated each semester on overall performance by their major advisor consistent with SLO's 1, 3, and 4 to assure that the student is making satisfactory progress towards completion of their degree program. Students who served as a Teaching Assistant for that semester are evaluated further in that effort, and this assessment is carried out primarily by the faculty under whom the student assisted. SLO's 1 and 4 are evaluated at this time. Students who had enrolled in Supervised Teaching, which demands duties beyond those of our regular Teaching Assistants, are evaluated by the faculty instructor of the course as well as the students in the class. SLO's 1 and 4 are evaluated at this time.
- **Research Proposal:** Students must prepare a written research proposal and schedule an oral presentation of the proposal to their committee between the first and second year. The presentation is formally announced by post and attendance is open to everyone. SLO's 1, 2, and 3, are assessed at this time by all members of the committee. The Evaluation Guide for the dissertation proposal is provided as an example.
- **Qualifying Examination:** Students must take their Comprehensive examinations when all or most of the coursework (Plan of Coursework) has been completed. The first part is a written examination and if passed by agreement of all committee members, the second part, or oral examination is scheduled and the student must receive a passing grade from all committee members. SLO's 1, 2, 3, and 4 are assessed by the committee at this time to determine if students are making satisfactory progress.

Written Dissertation and Oral Defense: An assessment similar to that used for evaluation of the research proposal is used by the committee for reviewing the dissertation and its defense. SLO's 1, 2, 3, and 4 are ascertained at this time.

Assessment Timeline (Graduate and Professional AAPs only):