

GRADUATE PROGRAM HANDBOOK

Interdisciplinary Ph.D. Program in Nutrition

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PREFACE

This handbook was designed to provide information for doctoral students and faculty associated with The Ohio State University Nutrition (OSUN) PhD Program. The guidelines for the OSUN Program are in accordance with the rules and policies of The Ohio State University Graduate School. These rules and policies are outlined in the Graduate School Handbook, which is available from the Graduate School at <http://gradsch.osu.edu/>. In general, OSUN Program guidelines, as presented herein, define or extend Graduate School policies as they relate specifically to graduate students and faculty in the OSUN Program. Where no specific policy has been stated, the Graduate School regulations apply. Faculty and students should be familiar with both handbooks. This handbook was prepared by extracting selected information from the Graduate School Handbook, the OSUN Charter, and graduate handbooks prepared by similar programs.

SECTION 1 - INTRODUCTION

Program Overview

The Ohio State University Nutrition (OSUN) Ph.D. Program is a cooperative effort involving four colleges at OSU; Education and Human Ecology (EHE); Food, Agricultural and Environmental Sciences (FAES); Medicine; and Veterinary Medicine. The Provost appoints the Dean of one of these colleges as the Lead Dean. Currently, the Dean of EHE, Dr. Cheryl Achterberg, serves in this position. This Interdisciplinary Program was established in 1996. Doctoral students in the OSUN Graduate Program will acquire the skills and abilities needed for successful careers in nutrition. The goal of the OSUN Ph.D. Program is to provide a solid foundation in basic sciences with an integrated approach to problem solving. Traditional course work, research problems, seminars, and research group discussions all emphasize the disciplines in which successful graduate students in nutrition must be fluent in order to make significant contributions in rewarding careers.

Graduate Faculty Membership

Criteria for membership of faculty members who are eligible for current Category M or P status include graduate training in nutrition science or a related area, membership in at least one nationally recognized professional organization related to publishing nutrition research, and the development of an active research program in nutrition as evidenced by publications and funding. Admission to the OSUN Graduate Program is by nomination of an individual from an OSUN faculty member, submission of a CV and statement for the basis of their nomination. The OSUN Graduate Studies Committee will then review materials and vote on admission into OSUN (majority vote). Category P graduate faculty can serve as an advisor for OSUN doctoral students. Category M graduate faculty may serve on doctoral examination and advisory committees. Category M graduate faculty may include individuals having adjunct appointments at The Ohio State University or Visiting Professors. Only faculty members with Category P status are eligible for membership on the Graduate Studies Committee. Criteria for membership on the OSUN Graduate Studies Committee are detailed later.

SECTION 2 - OSUN PROGRAM ADMINISTRATION AND GOVERNANCE

Director and Associate Director

The Director of the OSUN Graduate Program is appointed by the Dean of the Lead College. The Associate Director is appointed by the Coordinating Council of Deans. The Director and Associate Director will be from different participating colleges. The term in office for the Director and Associate Director is four years, and neither will serve more than two consecutive terms. These appointees are responsible for the following:

- providing program leadership to the faculty and students, establishing goals, and developing policy guidelines;
- coordinating the recruitment and orientation of students, student assignments for rotation through research programs, and advising and counseling first-year OSUN students until they select a permanent advisor;
- administering financial resources;
- maintaining liaison with participating departments and colleges, as well as leading nutrition scientists in other universities, government, industry, and professional societies;
- preparing the annual report to the Coordinating Council of Deans on the achievements of OSUN faculty and students, programmatic initiatives, and needs; and
- identifying and securing financial resources required for the operation of a viable seminar series during the Spring Quarter.

Graduate Studies Committee

The OSUN Graduate Program is administered by the Graduate Studies Committee (GSC) in accordance with the rules of the Graduate School Handbook (<http://gradsch.osu.edu/>). The GSC is chaired by the Director and co-chaired by the Associate Director. The Coordinating Council of Deans will appoint one faculty member from each of the participating colleges not represented by the Director and Associate Director. OSUN Faculty will elect two additional members. Election is by simple majority vote. GSC members must hold Category P status. Terms of elected and appointed members of the Committee are three years and faculty may be appointed or elected to a second term.

The GSC oversees and administers the Ph.D. Degree Program and acts as a liaison between the Graduate School and the OSUN Graduate Faculty. The GSC is responsible for establishing policies and standards of the Program, including the following:

- assisting the Director and Associate Director with recruitment of students and rank ordering of accepted students for the awarding of graduate research associateships;
- assisting the Director and Associate Director with preparation of materials for nominations of accepted applicants and Ph.D. candidates for University Fellowships;
- reviewing recommended members of each student's Advisory Committee and student or faculty petitions concerning deviations from the operating procedures; and
- overseeing curriculum requirements, monitoring the content and quality of instruction for all courses that are considered central to the OSUN Program, and recommending changes as needed to the OSUN Faculty.

Standing Committees

The membership of each of the following committees is comprised of at least one member of the GSC (who will chair the standing committee) and additional members with either category M or P status who serve a term of two years.

Seminar Committee. The committee consists of two OSUN Members specializing in human and animal nutrition, respectively, who are appointed by the Director in conjunction with the approval of the appropriate department Chairs. These individuals are responsible for organizing and conducting the Interdepartmental 898 Seminar in the Spring Quarter.

Ad Hoc. Special committees will be appointed by the GSC as needed.

APPLICATION AND ADMISSIONS

Admissions Criteria

Doctoral degree applicants to the OSUN Ph.D. Program should have a baccalaureate or Master's degree in nutrition or a related biological science. To be considered for admission, applicants are expected to meet the following minimum criteria:

- cumulative point hour ratio of 3.30 in previous course work (students can petition a GPA below 3.30 but above a 3.0 for undergraduate coursework);
- GRE taken within the previous 5 years with minimum scores of at least 500 on both Verbal and Quantitative sections, a combined score of at least 1100, and a minimum score of 3.5 for the Analytical Writing section on the old version of the GRE; on the new version of the GRE, minimum requirements will be set in December of 2011 for Verbal and Quantitative, and a minimum of 3.5 for the Analytical Writing and,
- if from a country where the primary language is not English, a TOEFL score of at least 600 on the paper version or 100 on the internet based version (IBT), and an 8.0 on the IELTS is preferred.

Although a Master's degree is preferred, students with an exceptional record in a baccalaureate program and experience in a research setting may be admitted directly into the Doctoral Program.

To be considered for the University Fellowship Competition students must have a 3.6 on a 4.0 scale, 75th percentile on the GRE General Exam's Verbal and Quantitative Components and a 4.0 on the Analytical Writing. For more information on the Graduate School Fellowships, you can see Section X. of the Graduate School Handbook

<http://www.gradsch.ohio-state.edu/Depo/PDF/Handbook.pdf>

Application Procedure (External Applicants)

Applicants must submit a formal application through the Graduate Admissions Office of The Ohio State University. All applications are done online at <http://www.gradadmissions.osu.edu>. The preferred application deadline if applying for Graduate School Fellowship is January 1 for U.S. students and the last working day in November for International students.

All applicants must submit: 1) an admissions application; 2) official transcripts covering all undergraduate and graduate academic work undertaken prior to application; 3) curriculum vitae (CV) if interested in Fellowship consideration; 4) an autobiographical essay; and 5) three letters of recommendation (submitted on the standard form provided by OSU Graduate Admissions). The evaluation of the applicant's potential to successfully define and conduct doctoral research is expected in the letters from references. **All attached letters of recommendation must be submitted on official letterhead unless submitted through the online system.**

The autobiographical and goals essay should be approximately 500 to 1000 words. It should indicate the factors that have stimulated the applicant's interest in science in general and in nutrition in particular. The applicant is expected to provide information about career goals and areas of nutrition research of special interest including the identification of specific OSUN Faculty with appropriate expertise (<http://ehe.osu.edu/osun>). Relevant information about undergraduate or graduate research experiences, especially those related to the nutrition sciences are appropriate. **OSUN prioritizes applications based on the student's research interest and advisor availability. Students are highly encouraged to contact potential faculty members and discuss research opportunities before applying.**

Requests for a waiver of the admission requirements or for the OSUN Program to pay the application fee for international applicants are not normally approved.

All requirements listed above are the same as, or in addition to, the general Graduate School requirements stated in the Graduate School Handbook.

Students should ensure that components of the application packet go to the appropriate offices.

The following should be submitted directly to the OSU Graduate Admissions Office:

- application form
- application fee
- official transcripts of all undergraduate and graduate work
- GRE/TOEFL scores

The following should be submitted directly to the OSUN Program Office:

- official transcripts of all undergraduate and graduate work
- letters of recommendation
- autobiographical and goals essay
- CV if interested in fellowship consideration

Application Procedure (Internal Applicants)

Students may apply for a transfer from another OSU academic unit or program by completing the Request for Transfer of Academic Unit, available from the Graduate School. Students must ask their current graduate unit to forward a copy of the original application materials submitted to their original unit along with information concerning the student's performance while enrolled in the Graduate School at The Ohio State University. The latter should include a copy of the student's most recent advisor's report (OSU courses taken and grades received). Three new letters of recommendation from faculty familiar with the student's performance and an evaluation of potential to succeed in doctoral research are required. If the Ph.D is primarily a continuation of research from a Master's program in the same laboratory, one letter of support, including financial support, from the student's advisor, along with signatures of two other committee members who are in concurrence will be sufficient. If the GSC approves a transfer, it will also specify which completed courses will be credited towards the graduate degree in the OSUN Program.

Notification of Admission

All applications will be reviewed and evaluated by the Graduate Studies Committee for admittance into the program. Upon approval, the OSUN director will notify the Graduate Admissions Office through the Student Information System (SIS). The Graduate Admissions Office will then officially notify the applicant of the final decision by email. A supplemental acceptance letter from the department will follow. In the case of Internal Transfer, the Graduate School will send a copy of the transfer form to the student by way of notification.

FINANCIAL AID

The OSUN Program generally awards first-year graduate research associateships (GRA) on a competitive basis. Other forms of support include graduate teaching associateships (GTA) and fellowships that are available on a competitive basis from departments, colleges, and the Graduate School. Students who are awarded a GRA, GTA, or fellowship administered by a department or college should adhere to the specific terms and agreements imposed by the supporting advisor or unit. For more information on departmental fellowships or stipends, students should consult their advisor or the Graduate Studies Chair of the Department in which they are housed.

In addition to providing first-year fellowships, the Graduate School awards Dissertation (Presidential) Fellowships to students completing the final year of the doctorate. The GSC of OSUN is responsible for nominating students for Graduate School Fellowships. For more information on University or National awards administered by the Graduate School, visit the OSU Graduate School webpage for funding opportunities (<http://gradsch.osu.edu/funding1.html>). Other fellowships or scholarships might be available through the student's respective society or through OSU's Office of Research (<http://research.osu.edu>).

Students who are awarded a fellowship, GRA, or GTA administered through the University for at least 50% time receive full tuition and fee authorization and a modest stipend. Fellowships awarded by an extramural agency are not necessarily coupled with an automatic fee authorization.

Students may elect to enter the OSUN Program on a self-supporting basis if accepted without financial support from the Program.

SELECTION AND ROLE OF AN ADVISOR

Students are encouraged to enter the program with a commitment from a particular member of the OSUN faculty to serve as the mentor for dissertation research. Other students enter with the OSUN Director, Associate Director, or another member of the OSUN Graduate Studies Committee advising the first-year student. If more than one OSUN faculty member is interested in a student, those faculty members can supervise the student through laboratory rotations until an advisor-advisee relationship is formed. Although the Director and Associate Director can help facilitate meetings with potential advisors, the student has primary responsibility for contacting the individual OSUN faculty members and other OSUN students who can help in this decision. Students might ask questions such as: 1) What projects are available for new students to work on? 2) Is funding available for these projects? 3) What is the faculty member's expectation of graduate students? 4) How many previous students has the faculty member advised and what is the average length that it took those students to finish their dissertation work? 5) What is the current status of graduates for whom the faculty member served as the advisor?

A contract will be signed between the student and the OSUN faculty member with whom the student is rotating (See Appendix). A copy will be filed in the OSUN office, and the student will keep a copy. Students should be aware that the individual faculty member will be evaluating them during the rotation period to determine if the student is compatible with his/her ongoing research program. Until an OSUN faculty mentor has been identified, the student is expected to rotate each quarter into a lab and enroll for a minimum of 3 credit hours of 993 or its equivalency for 999 (if the rotation is leading to dissertation research) during the first academic year. Prior to receiving credit for their 993 enrollment, the student should follow-up with each faculty mentor and report the outcome of the rotation to the OSUN director.

Selection of an Advisor/Changing Advisors

Students should select an advisor who is willing to direct their graduate program and dissertation research by the end of the third quarter of their first year of study and are required to have an advisor by the end of the fourth quarter unless there are extenuating circumstances excused by the Director or Associate Director. The advisor must have Category P graduate status. The selection must be communicated in writing to the OSUN Director, who will advise the Graduate School of the advisor assignment.

Although infrequent, situations do arise that make it necessary to change advisors after a permanent advisor has been selected. Open and regular communication between student and advisor will avoid such situations in most cases. In the event that a student deems that it is not possible to continue with a particular advisor, he/she should directly contact the OSUN Director or Associate Director concerning the situation. The Director or Associate Director will attempt to resolve any problems that have occurred. In the event that resolution is not possible, the Director or Associate Director will work with the student to identify a new advisor if the student has not done so. Students must notify the GSC of the OSUN Program **in writing** that they wish to change advisors and that this change is agreeable with both the previous and the new advisor. If consent of one or both advisors cannot be obtained, the student must petition the GSC in writing for a change of advisor. Action of the GSC will be based on consultation with the student and the advisors. Students leaving a project must turn in all of their data in an intact, organized manner to the previous advisor. If the problem cannot be resolved, the Graduate School has established grievance procedures (see Appendix C in the Graduate School Handbook). Students must recognize that the length of time required to complete the requirements for the degree and financial support might be affected by a change in advisor.

Roles and Responsibilities of the Advisor

The faculty advisor provides counsel and advice to the student on course selections, program development, selection and execution of dissertation research or individual study problems, and all other student requests requiring assistance. The advisor is expected to provide financial support or assist students in obtaining support from the home department, University, or extramural sources. The advisor chairs the Advisory Committee, the General Examination Committee, and the Dissertation Committee.

Selection and Role of the Advisory Committee

Within the first year of the doctoral program, an Advisory Committee is expected to be selected by the advisor and student. It will then be submitted to the Director or Associate Director of OSUN for approval by the GSC. The Advisory Committee should include at least three faculty members in addition to the advisor. Two faculty members must be OSUN, while the third can be outside of OSUN. One faculty member should be from a department different than the home department of the advisor. Advisory Committee members may be Graduate Category M or P. The Advisory Committee serves to: 1) approve the student's planned program of study; 2) consult on early progress in research; and 3) participate on the student's proposal approval and Candidacy Examination Committee. All students must have their thesis proposal and planned program of study approved by their Advisory Committee prior to the Director's signature on the Graduate School's "Notification of a Candidacy Examination" form. Advisory Committee Members can be changed upon approval by the Director or Associate Director but without petition by the Graduate School prior to submission of this form.

Students should formally meet with their Advisory Committee to review performance and receive input on planned direction at least once per year. The advisor will prepare and forward a letter or email to the student that summarizes the Committee's evaluations regarding overall performance, progress towards completion of the degree, and specific recommendations for

improvement. Copies of the summary also are forwarded to the members of the student's Advisory Committee Members, the Director, and the Associate Director. The annual summary received by the Director will be placed in the student's file.

REGISTRATION AND SCHEDULING

The rules of the OSUN Program with respect to registration, scheduling, course load, and changes in schedule are the same as those stated in the Graduate School Handbook. Course loads for full-time students range from 12-15 credit hours per quarter, but no more than 18 credit hours per quarter. Graduate Fellows, regardless of the source of funds, must register for 15 credit hours per quarter. All Graduate Associates must sign up for a minimum of 9 credits per quarter, except for summer, when the minimum is 7. OSUN students not receiving compensation in the form of a GRA, GTA, or fellowship are still expected to enroll in a minimum of 3 credit hours per quarter or for the standard of their advisor's department, if a minimum enrollment is dictated. International students must register for at least 10 credit hours per quarter unless they hold Graduate Associateships or a fellowship, in which case the rules for the appointment apply. All students admitted to the Graduate School Autumn Quarter 2008 and after and who have successfully completed the doctoral candidacy exam will be required to be enrolled every quarter (summer excluded) until graduation. All post-candidacy doctoral students must register for three credit hours per quarter. Exceptions are delineated in the Graduate School Handbook (section III).

The Master Schedule of Classes, published quarterly by the University Registrar, contains detailed instructions and deadlines for registration. It is available on the web, <http://registrar.osu.edu/>. Registration material is sent to new students after they have accepted admission. Students admitted immediately before the quarter begins can obtain registration material at the Graduate School. Continuing students will be emailed registration materials before the fifth week of the quarter preceding the intended quarter of enrollment. Students must register using the on-line system. You will be assigned a date and time that you may begin to register (this will be sent by email from the Registrar's office). Students bear full responsibility for any problems that arise from failure to consult with their advisor or from failure to follow the advisor's recommendations. If it is necessary to drop or add a course at some point during the quarter, students should consult both the Master Schedule of Classes for add/drop deadlines and the faculty advisor. OSUN Program requirements are included in this Handbook.

The OSUN Program office maintains a file on each student. The file contains all application materials; a record of the student's academic performance at The Ohio State University; copies of the approved course schedule; and copies of all official correspondence and forms to, from, or about the student from the advisor, the GSC, the Department, the Graduate School or other faculty members and administrative units of the University.

ACADEMIC STANDARDS

Students must remain in good academic standing to remain in the Program and to remain eligible for financial support. To be in good standing in the Graduate School, a student must maintain a

graduate cumulative point-hour ratio of 3.0 or better in all graduate credit courses after 15 credit hours and must maintain reasonable progress toward graduate program requirements (see below). Failure to maintain a GPA of 3.0 results in a student being placed on probation by the Graduate School (see section V of the Graduate School Handbook). A student who is on probation may not be appointed or reappointed as a Graduate Associate. A student may be denied further registration by the graduate school after three quarters on a warning unless a petition by the GSC is approved by the Graduate School. Students are not eligible to take the Candidacy Examination or the Final Oral Examination if their GPA is below 3.0.

Graduate students must maintain professional ethical standards in their studies and research. The University Committee on Academic Misconduct is responsible for reviewing cases of misconduct. For more information on Academic Standards, students should consult the Graduate School Handbook.

Reasonable Progress

Students are also expected to make reasonable progress in their Doctoral Program. Full-time students who enter the OSUN Program with an M.S. degree should be able to complete the doctorate in 3 to 5 years. Reasonable progress can be determined at the discretion of the GSC but includes factors such as not finding an advisor by the end of the first year of study, entering candidacy by the end of the second year (i.e., having an accepted plan of study and thesis proposal and having a scheduled Candidacy Exam by the first quarter of the third year), not having nor making dissertation research progress or otherwise not meeting written expectations during the year being currently evaluated. At the end of each year, the student and advisor should submit a brief report to the Director to document accomplishments and goals for the student's course schedule and dissertation research, and the Advisory or Dissertation Committee should be consulted for evaluation at least once per year. This performance report should be provided to the Director in January to coincide with the major input being generated for the OSUN Annual Report.

THE CURRICULUM

Outcomes for Doctoral Studies in Nutrition

The OSUN Program has been designed to provide a plan of course work as well as experiential learning activities that will prepare the student for the interdisciplinary nature of modern nutrition science and to equip the student to adapt to new developments in this integrative discipline and expectations in the job market. As a result of participating in the OSUN Doctoral Program the successful student will have achieved the following:

- display a strong knowledge base in nutrition science;
- show evidence of ability for critical thinking as applied to nutrition research;
- develop expertise in the design, conduct, and analysis of experimentation in a particular area of nutrition science;
- integrate knowledge from related disciplines;

- gain experience in working as part of a team;
- seek expertise specific to the student's career goal; and,
- communicate effectively in written and oral formats.

Doctoral students must complete a minimum of 120 credits in graduate level courses to be eligible for the Ph.D. degree. M.S. degrees earned in nutrition or a related field may be counted for a maximum of 45 of the 120-hour requirement for the Ph.D. degree. Relevant graduate credit taken in excess of the 45 credit M.S. degree may be transferred to the Doctoral Program upon approval from the Graduate Studies Committee. The OSUN Director initiates this request for transfer of graduate credit. This transfer should occur during the first quarter of doctoral enrollment.

Key Preparatory Courses

Human Nutrition 761 Carbohydrate and Lipid Metabolism (5 cr, Wi Qtr)*

Human Nutrition 762 Principles of Nutrient Metabolism (5 cr, Au Qtr)*

Human Nutrition 763 Vitamin and Mineral Metabolism (5 cr, Sp Qtr)*

Other courses as needed, e.g., 600 and/or 700 level nutrition, research design, introductory graduate-level statistics, or introductory biochemistry laboratory (Biochemistry 521)

*Cross-listed in Animal Sciences and Food Science & Technology

Core Courses

Advanced Studies in Nutrition (10 credits)

The following series of 830 courses are cross-listed in the Department of Animal Science, the Department of Food Science, and the Department of Human Nutrition:

830.01 Advanced Topics in Energy and Lipids (5 cr, Sp Qtr, odd years)

830.02 Advanced Topics in Vitamins and Minerals (5 cr, Wi Qtr)

830.09 Food and Nutritional Toxicology (3 cr, Au Qtr)

830.10 Comprehensive Approach to Food Safety (3 cr, Wi Qtr, odd years)

830.11 Nutrition-Endocrine Interactions in Women's Health (4 cr, Sp Qtr)

830.12 Nutrition and Cancer (4 cr, Sp Qtr, even years)

The following courses will be cross-listed after their initial offerings:

Human Nutrition 894 Nutrition in the Post-genome Era (5 cr, Au Qtr)

Additional Courses in Advanced Nutrition and Nutrition-Related Courses

Human Nutrition 804 Advanced Community & International Nutrition (5 cr, Sp Qtr, every other year)

Human Nutrition 806 Advanced Nutrition Education (5 cr, Sp Qtr, every other year)

Integrated Biomedical Sciences 702.04 Cancer Biology (Arr, Wi Qtr)

Molecular and Cellular Biochemistry 828 Signaling Pathways and Human Diseases (3 cr,

Wi Qtr)

Molecular Virology, Immunology and Medical Genetics 701 Cellular and Molecular Immunology (5 cr, Au Qtr)

Molecular Virology, Immunology, and Medical Genetics 827 Biochemical Mechanisms of Carcinogenesis (3 cr, Sp Qtr, every other year)

Public Health: Epidemiology 816 Cancer Epidemiology (4, Sp Qtr)

Seminar* (1 cr hr each)

Interdepartmental Nutrition 898 (Sp Qtr)

Human Nutrition 895 (Au Qtr)

Animal Sciences 890 (Au and Wi Qtrs)

Food Science and Technology 850 (Au and Wi Qtrs)

*Students are expected to attend one or more seminar series every quarter (except summer) regardless of whether they are taking the seminar for credit. Students must take a minimum of 5 credit hours of seminar. Attending seminars and learning how to prepare well written summaries of research presentations and deliver oral research presentations are vital parts of graduate education.

Graduate Physiology* (minimum of 6 credit hours, but preferably at least 3 courses)

*Students are encouraged to discuss which of the following or related courses in the general area of physiology are most appropriate for the student's long-term goals and research interests with their advisor, Advisory Committee, and other OSUN Faculty as appropriate.

Physiology and Cell Biology 601 and 602 (Organ System Physiology, 10 cr, Au and Wi Qtrs; also prerequisite for several more advanced courses in Physiology that might be valuable)

Animal Sciences 610 Physiology of Reproduction (5 cr, Au Qtr)

Animal Sciences 617 Physiology of Lactation (3 cr, Wi Qtr)

Animal Sciences 618 Molecular Events in Tissue Growth and Development (4 cr, Sp Qtr)

Animal Sciences 730 Advanced Topics in Ruminant Nutrition (5 cr, Sp Qtr)

Animal Sciences 810 (Advances in Physiology of Domestic Animals (5 cr each, Au, Wi, Sp, and Su Qtrs)

Molecular and Cellular Biochemistry 823 Control of Cell Growth and Proliferation (3 cr, Wi Qtr)

Pathology 640 Fundamentals of Oncology (4 cr, Wi Qtr)

Pharmacy 731 Clinical Pharmacokinetics (4 cr, Au Qtr)

Pharmacy 802 Pharmacokinetics (4 cr, Wi Qtr, alternate years)

Nursing 703 and 704 Pathophysiology of Altered Health States I and II, 10 cr (Au and Wi Qtrs)

Veterinary Biosciences 730 Endocrinology (5 cr, Wi Qtr)

Statistics (6-10 credit hours above introductory statistics)

Students must have a minimum of the following competencies in statistics: two sample tests, non-parametric one and two sample procedures, regression analysis, analysis of variance, regression models, ANOVA with several factors, mixed models, and nesting. Generally, students must take at least two or three courses to obtain these competencies. Additional competencies might be necessary, depending on courses from the M.S. program, the nature of

the dissertation research, and career goals. There are numerous courses in a number of departments that teach such skills. Animal Sciences 668 Applied Biometrics (5 cr, Sp Qtr) is highly recommended by students and faculty as a third course in statistics. The advisor and Advisory Committee can best guide the student to the appropriate courses.

Skill Development

Students will avail themselves of the opportunity to develop skills in research and/or teaching. This requirement can be met by working in a laboratory or enrolling in courses, workshops or a teaching practicum. Examples of courses focused on methodology and experimental design that merit consideration include the following:

Allied Medicine 680.01 Research Design in Biomedical Sciences (3 cr, Au and Wi Qtrs)
 Animal Science/Food Science & Technology 868 Molecular Biology Techniques (5 cr, Su Qtr)
 Biostatistics 615 Design and Analysis of Clinical Trials (3 cr, Wi Qtr)
 Food Science & Technology 833 Research Methods in Food Science (4 cr, Wi Qtr)
 Human Nutrition 889 Principles and Techniques (3 cr, Au Qtr)
 Molecular and Cellular Biochemistry 785 DNA Microarray Technology (2 cr, Sp Qtr)
 Molecular Genetics 602 Eukaryotic Cell and Developmental Biology (5 cr, Sp Qtr)
 Molecular Genetics 734 Cancer Genetics: High Throughput Technologies (4 cr, 2 2hr cl, Sp Qtr)
 Pharmacy 789 Isolation Techniques in Research (5 cr, Sp Qtr)

Supporting Course Work

The student must select additional course work comprising supporting courses, a concentration, or a minor. In the case of a minor, a program other than OSUN is involved, requiring at least 14 credit hours of graduate-level work in at least four courses outside of OSUN and earning a B or better or an S in each course. The Graduate Interdisciplinary Specialization requires two or more graduate programs outside of OSUN. At least one professor per program is expected to serve on the Advisory Committee and participate in the General Examination. Other specific details and restrictions for Graduate Minor and Interdisciplinary Specialization options, including those programs offering these options, are provided in Section VIII.4 of the Graduate School Handbook.

We encourage students interested in an academic career to consider the Interdisciplinary Specialization in College and University Teaching minor. This Program allows graduate students to engage in a rigorous, structural exploration of theories and practice of university-level teaching, both in general and in their own discipline. The student will develop skills and experience that enables them as reflective scholarly teachers as they prepare to enter the curriculum. Suggestions for coursework include the following: 1) Agricultural Education 631 (Methods in Teaching Agriculture, 3 cr, Su Qtr); and 2) Education: Educational Policy and Leadership 851 (College Teaching, 3 cr). More information is available on the OSU Faculty and TA Development website, <http://ftad.osu.edu> about required coursework.

Students interested in careers in state, federal, and international nutrition policies should contact the Director to discuss possible internships at such agencies.

Russell Klein Memorial Nutrition Research Symposium

All OSUN students are expected to attend the Russell Klein Memorial Nutrition Research Symposium, and those who have been in the program for more than one year are expected to present a poster if they have available results. This annual event is held on the last day of classes for spring quarter, which is generally the first Friday in June.

Dissertation Research

Students should enroll in a minimum of 30-40 credit hours in 999 to conduct research on a specific problem. Students should initiate a research project during their first year of graduate study. Students are highly encouraged to present their research at a minimum of two national meetings during the course of their doctoral program. Because the Research Proposal Examination and the Candidacy Examination (see below) will test, among other things, the student's ability to generate and test hypotheses and answer research questions, students must have strong research experience in their chosen research area and in critiquing the research of other scientists.

EXAMINATIONS

Research Proposal Examination

Prior to the written portion of the Candidacy Exam, the student must prepare a proposal that includes the hypotheses and the specific aims of the proposed research, the design of the proposed studies to be performed, and the methodology to be used. The proposal should also include an introduction to the research problem, a literature review, and preliminary data in support of the hypothesis to demonstrate the feasibility of the proposed research. The Advisory Committee should meet to discuss the proposed research and the student's plan of study prior to the Candidacy Exam. At the end of the meeting, the Committee Members should briefly summarize their comments on the OSUN Research Proposal Approval Form (See Appendix) and sign the form, signifying that the proposal is approved with whatever stipulations the committee members devise. Also, the plan of study should be signed by the advisor with an indication of approval by the entire committee. A copy of the signed proposal approval form (attached with a copy of the proposal) and a copy of the signed plan of study shall be filed with the Director of OSUN. Should the committee decide that the student's performance failed to meet its expectation, the student is expected to schedule a second defense within 6 months of the failed defense of the proposal. Failure to pass the second defense of the proposal will result in dismissal from the Program.

Candidacy Examination

Please also review the Graduate School Handbook, section VII for more information on the Candidacy exam. The Candidacy Examination is composed of both written and oral portions. After passing both components, the student is considered a doctoral candidate.

The philosophy of the OSUN Program is that the Candidacy Examination should: 1) rigorously test the student's comprehensive knowledge of the field of nutrition including allied fields and supporting areas emphasized in the student's individual program; and 2) assess the student's ability to think critically and express those ideas clearly, and to design and conduct research.

The student's advisor is chair of the Examination Committee. All members of the Examination Committee submit written questions for the Candidacy Examination. The committee member may administer the questions or submit them to the advisor who will arrange for their administration. Students are not allowed to see the questions before the exam time. Generally, the student will write for 4 to 8 hours for each member of the Examination committee (one exam day for each member of the committee) over a time period that is determined by the committee but usually within a 1- to 2-week period. Ideally, the Committee will meet as a group with the student 1 or 2 quarters before the Examination to help prepare the candidate and to establish a mutually agreeable time frame for the Examination and a general list of topics to be covered. The Examination may include, but is not limited to, subject material directly related to the previously submitted and evaluated research proposal.

The student is responsible for presenting each member of the Advisory Committee with a typed copy of the written answers to the questions at least 7 days prior to the Oral Examination.

The oral portion of the Candidacy Examination generally covers selective aspects of the answers to the written questions but also new questions. A unanimous vote of the Committee is required for successful completion of the Candidacy Examination. Rules covering postponement of the Oral Examination, unsatisfactory written answers to the questions, failure to pass the oral portion of the Candidacy Examination, and opportunities for one Repeat Candidacy Examination are detailed in the Graduate School Handbook.

RESIDENCY REQUIREMENTS

According to policies of the Graduate School, a minimum of 120 graduate credit hours beyond a baccalaureate degree must be earned. If a master's degree has been earned, a minimum of 75 credits beyond the master's degree is required. The following must be fulfilled after the master's degree or the after the first 45 graduate credits have been completed:

1. The student must earn a minimum of 45 graduate credits at this University
2. A minimum of 3 out of 4 consecutive quarters with an enrollment of at least 9 graduate credit hours per quarter at OSU.
3. A minimum of 6 graduate credits should be taken over a period of at least 2 quarters after admission to candidacy.

For more information on residency and deactivation, consult the Graduate School Handbook (Section VII.2).

DISSERTATION

Introduction

After the Candidacy Examination is passed, students enter the final phase of their program, which involves completion of the research project and preparation of the Dissertation. This phase represents the culmination of the doctoral student's program. This research effort will demonstrate the candidate's ability to critically interpret scientific literature, design novel research, and properly and objectively evaluate experimental results. The research must contribute to fundamental knowledge within the discipline of nutrition.

Although the members of the Candidacy Examination Committee may serve on the Dissertation Committee, this is not required. The student, in consultation with the advisor, will establish the Dissertation Committee. Although the Graduate School requires the advisor and only 2 eligible faculty members (Section VII.9), the Dissertation Committee for OSUN students shall be composed of 3 eligible faculty members in addition to the advisor. At least two shall be members of OSUN, and at least one is encouraged to be from an outside discipline. The student, in consultation with the advisor, will submit the list of Dissertation Committee members to the Director or Associate Director of OSUN for approval by the GSC. Ideally, this list will be submitted shortly after the Candidacy Exam but must be done at least one week prior to submitting the Dissertation Draft Approval Form to the Graduate School (no later than the second Friday of the quarter in which the student plans to graduate; Section VII.9 of the Graduate School Handbook). Faculty from other universities or persons with special academic or technical expertise may be appointed to the Dissertation Committee with the approval of the GSC of OSUN and the Graduate School (Section VII.9).

Time Limit

If a student fails to submit the final copy of the dissertation to the Graduate School within 5 years of being admitted to candidacy (passed the General Examination), the candidacy is canceled. In such a case, with the approval of the advisor and the Graduate Studies Committee, the student may take a Supplemental Candidacy Examination after which the student is readmitted to candidacy and must complete a dissertation within 2 years. If GRA, GTA, or fellowships are awarded/administered by departments, the time limits of the respective departments should be honored with respect to those sources of funding.

Dissertation Draft Approval

The Graduate School Handbook provides detailed guidelines for preparing dissertations. The student should read these guidelines prior to starting to write. In addition, the student should consult the Instructions for Authors for the major journal of his/her discipline and consider formatting in its style and form. The student must submit a complete, typed dissertation draft to the Dissertation Committee Members for review. After having been approved by the thesis advisor, this draft must be provided to each Committee Member at least 1 week prior to draft approval for review.

Each Dissertation Committee member indicates approval of the dissertation draft by signing the Draft Approval/Notification of the Final Oral Examination Form. This form must be submitted to the Graduate School no later than two weeks before the date of the Final Oral Examination. The student must also show a draft of the dissertation to the Graduate School to ensure that style guidelines have been followed.

Deadlines for scheduling the Final Oral Examination and for submitting the final copy of the dissertation to the Graduate School appear every quarter in the Master Schedule of Classes. To be eligible to take the Oral Examination, the student must meet all requirements summarized in Section VII.14 of the Graduate School Handbook. Students who do not meet the deadlines but who submit the dissertation to the Graduate School by the last business day before the ensuing quarter do not have to pay additional fees but will graduate at the end of the next quarter.

Final Oral Examination

This examination is held no earlier than 2 weeks after the Draft Approval Form has been signed by the Advisory Committee and submitted to the Graduate School. The Graduate School will appoint a Graduate Faculty Representative to serve on the Examination Committee. Not less than 1 week before the Final Oral Examination, the student must provide the Representative with a copy of the dissertation draft. Although a student might present his/her research to a general audience prior to the defense, the presentation is not a component of the 2-hour Examination. Because a final dissertation seminar is required of all doctoral students, the dissertation research can be presented in a regular seminar series or as a special seminar, depending on the wishes of the student and advisor.

Only Final Oral Examination Committee Members are allowed to be present for the questioning conducted by those Committee Members using procedures outlined in the Graduate School Handbook. The student is considered to have completed the Final Oral Examination successfully when there is a unanimously favorable decision by the Final Oral Examination Committee. If one or more Members of the Committee deem the dissertation to be unsatisfactory, the Committee will decide if the student can take a second Examination. No student is permitted to take the Final Oral Examination more than twice. The results of the Final Oral Examination are noted on the Final Oral Examination Report Form, which is returned to the Graduate School no later than the Wednesday, 2 weeks prior to commencement.

The Committee Members, with the exception of the Graduate Faculty Representative, also sign the Dissertation Approval Form. This form might be signed at the end of the Final Oral Examination or later if one or more committee members have requested additional changes in the dissertation. The form must be turned in at least one week prior to commencement.

Students are expected to provide a final unbound copy of the dissertation to the Graduate School (note: the front page must be signed by the advisor) and to the advisor's department. In addition, a bound copy should be presented to their advisor. Whether or not final copies are provided to other Members of their Committee is optional.

GRIEVANCE PROCEDURE

Discussion with an advisor, supervisor, OSUN Director, Department Chair or College Dean normally leads to resolution of a grievance. There may be instances in which recourse to these persons does not provide resolution. The Council on Research and Graduate Studies has established grievance procedures (Appendix C of the Graduate School Handbook).

APPENDIX

Student ID

Student IDs (or BuckID) are obtained in the BuckID office at 3040 Ohio Union at 1739 North High Street. The ID is required for using many campus facilities such as the Recreation and Physical Activity Center (RPAC) or borrowing books from the library. The magnetic strip on the student ID is activated every quarter after student fees are paid. For more information, visit BuckID Services website, <https://buckid.osu.edu>.

Research Risks

Students need to fulfill appropriate requirements to handle laboratory animals, work with human subjects, or work in laboratories by consulting with the Office of Responsible Research Practices (<http://orrr.osu.edu/> (614) 688-8457) or their departmental laboratory safety officer. HazCom and additional training can be accessed at <http://www.ehs.ohio-state.edu/> or by calling (614) 292-1284.

Transportation and Parking

Students must register any motor vehicle they park on University property. To register a motor vehicle, pay parking fees and address all other parking and traffic questions (maps, restrictions, benefits), students should call ((614) 292-9341) or visit the office (160 Bevis Hall, 1080 Carmack Road; 7:30 a.m.-7:30 p.m., Monday through Friday; 12:00 p.m.-5:00 p.m., Saturday). To more learn about graduate student parking permit eligibility, permit prices and applications, visit OSU Transportation and Parking online at <http://tp.osu.edu>.

Note: Students who are teaching assistants or research assistants may have staff member status, enabling them to buy “B” parking tags. Students should confirm their status with their home department.

International Students Office

New international students must get in touch immediately with the Office of International Affairs (OIA), (614) 292-6101 or <http://oia.osu.edu/>The OIA will provide a student ID number, which is also recognized as a temporary social security number to be used as a personal ID number. International students must apply for a permanent social security number in downtown Columbus to obtain a driver’s license:

Social Security Administration
200 North High Street
Phone: (614) 469-6855

The major functions and services of the OIA are as follows:

- filing an I-20 form;
- scheduling the time for the T.B. test and English test indicating which level of English class must be taken;
- immigration law consultation;
- school orientation;
- education and recreation programs designed especially for the international student;
- help with reentry of USA after exiting; and
- help with other international student matters.

Office of International Affairs

300 Oxley Hall

1712 Neil Avenue

Phone: (614) 292-6101

Walk-in advising hours: Monday through Friday, 1:00 p.m.-4:00 p.m

Employment advising and application processing hours: Monday through Friday,
1:00 p.m. - 2:00 p.m.

New international students must also contact the **Spoken English Program (SEP)** to arrange for the time of testing. Tests should be taken as soon as possible as classes fill rapidly. The contact information for the SEP office is:

75 Arps Hall

1945 North High Street

Phone: (614) 292-5005

E-mail: sepita@osu.edu

Website: <http://esl.ohio-state.edu/SEP>

Computers

The Office of Information Technology (OIT) serves the research and instructional computing needs of faculty and students in every field of study (<http://oit.osu.edu/>). OIT manages many Student Computer Centers (SCC) across campus to ensure that students have access to technologies for course work that requires current computer hardware and software and internet access. Most sites are open on a first-come, first-served basis, with day and evening hours. The sites are equipped with Windows and/or Macintosh computers and a variety of peripheral equipment. Software includes word processing, desktop publishing, spreadsheet, e-mail, Web browsers, and others. For more information on the centers, including schedules for classes, holidays, finals, and quarter breaks; hardware and software availability; and equipment changes, send e-mail to scc@osu.edu or call the office at (614) 292-8400. Hours and locations for all SCC labs are available online at <http://scc.osu.edu/>. In addition to SCC labs, several personal computers are available for student use in departments, student offices, and laboratories. These are to be used for work-related activities. Personal use of computers for internet access should be minimized or avoided.

Software

OIT offers a variety of public domain, bulk purchase, and site-licensed software programs to members of the OSU community. Selected software is available for downloading (<http://osusls.osu.edu>). Access to this software is restricted to current OSU faculty, staff, and students. A valid OSU internet username is required for authentication. Some software is provided on a media exchange/loan basis, while other packages can be purchased at discount. Call 688-HELP for more information on obtaining software.

THE OHIO STATE UNIVERSITY NUTRITION PROGRAM

APPROVAL OF RESEARCH PROPOSAL

Name _____

Dissertation Proposal Title: _____

The Dissertation proposal is approved with the following suggestions or recommendations:

Advisor

Advisory Committee Members

The plan of study is approved with the following suggestions or recommendations:

Advisor

Date: _____

cc: Student
Official Folder
Advisor

HN 993
LABORATORY ROTATION CONTRACT

Student Name: _____

Rotation Instructor: _____

Number of Hours Enrolled in 993: _____

Estimated hour/week student available for rotation: _____

Quarter: _____

SECTION 1: EXPECTATIONS

This section should be filled out by the faculty member in consultation with the student *at the beginning of the rotation*.

1. Reading Relevant Literature: _____
2. Time in the Laboratory: _____
3. Research Meetings: _____
4. Experimental Work: _____
5. Student Presentations: _____

I have discussed with the student the possibility for support in my laboratory over the coming year: ____ Yes
____ No

Signatures:

Student Signature	Date	Faculty Signature	Date

SECTION 2: ACCOMPLISHMENTS OF THE STUDENT

This section should be filled out by the student *after the rotation is completed*.

1. Approximate average hours/week of participation in rotation: _____
2. Describe direct participation in research work (use addition pages if necessary):

3. Briefly describe outside reading/literature study (use additional pages if necessary):

4. Describe presentations in research group meetings:

5. Approximate time spent with rotation instructor: _____
6. Approximate time spent with other mentors in the lab (students/postdocs/techs): _____
7. Participation in other pertinent activities (use addition pages if necessary):

Student Signature: _____ **Date:** _____

SECTION 3: FACULTY APPROVAL

Student has participated in the above activities: _____ Agree _____ Disagree

I have discussed potential opportunities/support regarding graduate work in my program:
_____ Yes _____ No

General Comments and recommendations regarding areas of study, courses or lab courses this student would need before entering the lab:

Faculty Signature: _____ **Date:** _____

File a copy of this form with the OSUN office in 350 Campbell Hall at the beginning of the rotation and a completed copy at the end of the rotation. Keep a copy for yourself and give a copy to your instructor.

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Checklist of Responsibilities

Director and Associate Director of the OSUN Program

- Provide leadership for the program
- Coordinate student recruitment
- Coordinate rotation of OSUN First Year Graduate Research Associates through faculty research programs and assignment of advisors
- Advise and counsel first year students until advisor is selected
- Chair and co-Chair the Graduate Studies Committee and facilitates OSUN Program activities as needed
- Prepare the annual report

Graduate Studies Committee

- Administers the OSUN Program
- Acts as liaison between the Graduate School and OSUN faculty members
- Reviews students' Advisory Committee
- Reviews faculty and student petitions concerning deviations from operating procedures
- Makes final decisions on applications and awarding of first year Graduate Research Associateships
- Nominates graduate students for Graduate School awards

Advisor

- Provides counsel and advice to graduate advisees on course selection, program development, selection of Advisory Committee Members and Dissertation Committee members
- Provides other counsel as needed
- Chairs Advisory Committee and Candidacy Examination
- Chairs Dissertation Committee and Final Oral Examination
- Assists the student in identifying a dissertation research topic and regularly monitors the student's research progress
- Assists advisees in seeking financial support, assuming the advisor cannot provide this support
- Creates opportunities for students to present research at national meetings
- Promotes students' efforts to publish research articles in a timely manner

Graduate Student

- Shows leadership in preparing and submitting a formal application to the OSUN Program
- Works actively with the OSUN Director and Associate Director to identify a research program and a suitable advisor by end of 3rd quarter of doctoral study
- Plans program of study with assistance of advisor and submits this program plan to the Advisory Committee for review and approval
- Meets with advisor regularly and updates the advisor on progress
- Remains in good academic standing and makes reasonable progress in program
- Maintains professional ethical standards in studies and research

- Networks with other students and faculty regarding course selections and opportunities (e.g., for workshops, funding, and equipment availability)
- Participates in seminar during the autumn, winter, and spring quarters.
- Seeks opportunities to present research at national meetings
- Seeks opportunities to collaborate on and submit publications related to research efforts
- Becomes familiar with all relevant policies outlined in the Graduate School and OSUN Handbooks
- Becomes familiar with and fulfills residency requirement of Graduate School
- Is proactive in seeking funding for stipends and research, if necessary, in consultation with the Advisor and the Chair of the student's Departmental unit
- Is responsible for scheduling all oral examinations with advice and approval of Advisor and other committee members
- Prepares proposal describing dissertation research and submits the proposal first to the Advisor for comment and then to all members of the Candidacy Examination Committee for comment and approval
- Takes leadership in ensuring that forms required by the Graduate School are prepared and submitted in a timely fashion. These include:
 - Notification of the Candidacy Examination
 - Application to Graduate
 - Dissertation Draft Approval Form and Notification of Final Oral Examination
- Submits final approved copy of the dissertation to the Graduate School along with the Final Approval Form. Gives copies of dissertation to the advisor, the student's Department, and Committee Members as requested.