


Research and Graduate Programs
The Graduate School

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December 13, 2006

To: Robert Cousins
Eminent Scholar and Acting Program Director
Department of Food Science and Human Nutrition

From: Kenneth J. Gerhardt 
Interim Dean
Graduate School

Re: Proposal for a PhD in Nutritional Sciences

Your proposal for a PhD in Nutritional Sciences was approved by the Graduate Council with an effective date Spring 2008. It will be forwarded to the University Curriculum Committee as an information item and to the Faculty Senate as an action item.

KJG/lid

cc: Elaine Turner, Associate Dean, College of Agricultural and Life Sciences
Mark W. Rieger, Associate Dean, College of Agricultural and Life Sciences
Harry Sitren, Professor, Department of Food Science and Human Nutrition
Diana Hull, Associate University Registrar, Office of the University Registrar
✓ Amelia Hugus, Faculty Senate Secretary
Gann Enholm, Coordinator, Academic Support Services



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MEMORANDUM

TO: Amelia Hugus, Faculty Senate Secretary

FROM: Kenneth J. Gerhardt, Interim Dean
Graduate School

A handwritten signature in black ink, appearing to read 'K. Gerhardt', written over the printed name of the sender.

RE: Agenda item for the Faculty Senate

Please place on the Faculty Senate agenda the proposal listed below.

PhD in Nutritional Sciences

KG/ld

cc: Cheryl Gater, Administrative Assistant to the Provost
Diana Hull, Associate University Registrar, Office of the University Registrar
Gann Enholm, Coordinator, Academic Support Services

Attachment

Proposal: Migration of Nutritional Sciences concentration to PhD in Nutritional Sciences

Rationale and Program Description

The current Nutritional Sciences concentration within the Food Science and Human Nutrition PhD program was established in 1993. Since that time, 19 PhDs have been awarded with this concentration area. The field of nutritional science continues to enjoy unprecedented public interest fostered by evolving links between diet and health, and the impact of one's genetic makeup on nutrient utilization. Consequently, there is a continuing need for individuals with doctoral-level education to examine these relationships and advance the field of nutrition. The issues in nutritional science are being approached from virtually all venues in the biological sciences, including genomics, epigenetics, bioinformatics, molecular biology, transgenic animal models, analytical biochemistry, and more. Thus, advanced education in nutritional sciences is interdisciplinary in nature. At top-tier institutions such as UC-Berkeley, Cornell University, the University of Wisconsin, and the University of Illinois, the Nutritional Sciences graduate programs are interdisciplinary, involving multiple departments in the biological sciences.

Three factors make development of an interdisciplinary Nutritional Sciences doctoral program a logical next step from its current status as a concentration. The first is the breadth of opportunity available on the UF campus. Of the four institutions mentioned above, only one has a major health science center on its campus. The UF Health Science Center affords Nutritional Sciences students the opportunity to capitalize on a unique breadth of exposure in the biomedical and life sciences. The second factor is that the university has built a faculty with expertise in Nutritional Sciences that is on par with programs at top-tier institutions. A more diverse and visible program is necessary to attract the best students to graduate study with this distinguished faculty. Finally, those students who have received PhDs in Food Science and Human Nutrition with the Nutritional Sciences concentration have many career options, and have in many cases accepted permanent positions directly upon completion of degree requirements.

The new degree program will be interdisciplinary, with participating faculty from the Colleges of Agricultural and Life Sciences, Medicine, Liberal Arts and Sciences, and Veterinary Medicine. A total of 24 faculty from these four colleges have been identified, and these faculty would direct the research of Nutritional Sciences PhD students across a wide spectrum. Students would be admitted to the program after earning a Bachelors or Masters degree in a related field and meeting admission standards. A minimum of 90 credit hours beyond the Bachelors degree will be required. There will not be separate tracks or specializations, but students' choices of coursework and research could emphasize basic nutritional sciences, biochemistry and molecular biology, genetics, immunology, physiology, and biostatistics.

The goal of the proposed interdisciplinary PhD program in Nutritional Sciences is to broaden the experience of these students through interaction with faculty who have not previously been directly involved in the current concentration area. The faculty and courses needed for this expansion are already available on the UF campus.

Program and Student Support

There are no new costs associated with migrating the Nutritional Sciences concentration to an interdisciplinary PhD program. Salaries and benefits are provided by departments through line appointments of faculty anticipated to participate in this program. No additional faculty appointments are requested. Library, classroom, laboratory, and equipment resources are currently adequate to support this program and its anticipated growth.

Students admitted to the Nutritional Sciences doctoral program will be eligible for Alumni Fellowships and Research Assistantships. New students will also be eligible for the Davis Graduate Nutrition Enhancement Awards, a stipend supplement of \$5,000 per year. These supplements are awarded on a competitive basis by a faculty committee. This interdisciplinary doctoral program would be able to compete for Training Grants in Nutritional Sciences that are awarded by NIH.

Projected Program Growth

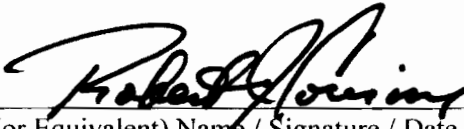
By virtue of expanding the opportunities for graduate students interested in Nutritional Sciences, it is anticipated that the number of doctoral students will grow from the current level of 6 to 14 students within five years. Advancing the Nutritional Sciences program from a concentration to a degree program will place UF on the same playing field with top-tier institutions, and aid in recruiting more bright young students to the campus. Independent degree program status will also help to elevate the national visibility of the program.

**University of Florida
Office of Accreditation and New Degree Programs**

Reviewing and Approving Authorities (create additional lines as needed)

Academic Unit(s): College of Agricultural and Life Sciences, College of Medicine, College of Veterinary Medicine, College of Liberal Arts and Sciences

Name of Proposed Degree Program: Nutritional Sciences

Robert J. Cousins, Program Director  10/20/2005
Department Chair, Program Director (or Equivalent) Name / Signature / Date

College Curriculum Committee Chair (or Equivalent) Name / Signature / Date
R. Elaine Turner R. Elaine Turner 11-6-06
Dean, Program Director (or Equivalent) Name / Signature / Date

University Committees:

Graduate Council* Chair Name / Signature / Date

University Curriculum Committee Chair Name / Signature / Date

Faculty Senate Chair Name / Signature / Date

Academic Affairs:

New Degree Programs Director Name / Signature / Date

*** for graduate programs only**

**University of Florida
Office of Accreditation and New Degree Programs**

Cover Page for New Degree Program Proposal

Name of Unit(s) proposing new degree: College of Agricultural and Life Sciences,
College of Medicine, College of Veterinary Medicine, College of Liberal Arts and Sciences

Complete Name of Degree Program: Nutritional Sciences

Proposed Implementation Date: August 2007

Academic Specialty or Field (Include CIP Code) Nutritional Sciences (CIP 30.1901)

The submission of this proposal constitutes a commitment by the proposing academic unit(s) that, if the proposal is approved, the necessary financial commitment and the criteria for establishing new programs have been met prior to the initiation of the program.

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Contact Information:

Name: Robert J. Cousins
Phone: 352/392-2133 Email: cousins@ufl.edu

**University of Florida
Office of Accreditation and New Degree Programs**

Reviewing and Approving Authorities (create additional lines as needed)

Academic Unit(s): College of Agricultural and Life Sciences, College of Medicine,
College of Veterinary Medicine, College of Liberal Arts and Sciences

Name of Proposed Degree Program: Nutritional Sciences

Robert J. Cousins
Eminent Scholar and Program Director 01/26/2006
Department Chair, Program Director (or Equivalent) Name / Signature / Date

College Curriculum Committee Chair (or Equivalent) Name / Signature / Date

Dean, Program Director (or Equivalent) Name / Signature / Date

University Committees:

Graduate Council* Chair Name / Signature / Date

University Curriculum Committee Chair Name / Signature / Date

Faculty Senate Chair Name / Signature / Date

Academic Affairs:

New Degree Programs Director Name / Signature / Date

*** for graduate programs only**

**University of Florida
Office of Accreditation and New Degree Programs**

Reviewing and Approving Authorities

Academic Unit(s): College of Agricultural and Life Sciences, College of Medicine,
College of Veterinary Medicine, College of Liberal Arts and Sciences

Name of Proposed Degree Program: Nutritional Sciences

University Administration:

Signature/Vice President for Academic Affairs

Date

Signature/President

Date

University and State Boards:

Signature/Chair, University of Florida Board of Trustees

Date

Signature/Chair, Florida Board of Education**

Date

****only doctoral degree programs must be approved by the Florida Board of Education**

Note: This outline and the questions pertaining to each section must be reproduced within the body of the proposal in order to ensure that all sections have been satisfactorily addressed.

INTRODUCTION

I. Program Description

Describe the degree program under consideration, including its level, emphases (including tracks or specializations), and the total number of credit hours.

The new PhD degree program in Nutritional Sciences (NS) is a natural migration from the NS concentration within the Food Science and Human Nutrition (FSHN) graduate program. The PhD program in FSHN was established in 1979. FSHN doctoral students needed to show proficiency in both disciplines until 1993, when the separate concentrations in NS and Food Science (FS) were created at the request of faculty and graduate students. Prior to 1979, only the Master's degree in FS was offered.

The new degree program in Nutritional Sciences will be interdisciplinary, with participating College of Agricultural and Life Sciences (CALS), College of Medicine (COM), College of Liberal Arts and Sciences (CLAS), and College of Veterinary Medicine (CVM) faculty directing research of doctoral students, where the full spectrum of NS will be available. Students would be admitted to the program after the Bachelor's degree or a Master's degree in a related field. Emphasis areas will include basic nutritional sciences, biochemistry and molecular biology, genetics, immunology, physiology, and biostatistics, but there will be no separate tracks or specializations. A minimum of 90 credit hours beyond the Bachelor's degree will be required.

The field of nutritional science has unprecedented public interest. This is fostered by evolving links between diet and health, and the impact of one's individual genetic makeup on nutrient utilization. Consequently, there will be a continuing need for individuals with doctoral-level education to examine these relationships. The needed experience requires an integrative approach derived through interaction of students in NS with faculty in various other biological science disciplines. At top-tier institutions such as UC-Berkeley, Cornell, Wisconsin, and Illinois this interaction is accomplished through interdisciplinary NS graduate programs. These institutions are currently producing PhDs in NS with interdisciplinary experience.

Three factors make development of an interdisciplinary NS doctoral program at the University of Florida a logical next step from its current status as a concentration. The first is the breadth of opportunity available on the UF campus. Of the four institutions mentioned above, only one has a major health science center on its campus. This brings NS students at UF the opportunity to capitalize on a unique breadth of exposure in the biomedical and life sciences. The second is that the University has built a faculty with expertise in NS that is on a par with NS programs at top-tier institutions. A more diverse program is necessary to attract the best students with an interest in this field of graduate study for mentoring by this distinguished faculty. Finally, those students who have received PhDs in NS have many career options. Many have accepted permanent positions directly upon completion of degree requirements.

The goal of the proposed interdisciplinary PhD program in NS is to broaden the experience of these students through interaction with faculty who have not previously been directly involved. The faculty and courses needed for this expansion are already available on the UF campus.

READINESS

II. Institutional Mission and Strength

- A. *Is the proposed program listed in the current State University System Strategic Plan? How do the goals of the proposed program relate to the institutional mission statement as contained in the SUS Strategic Plan and the University Strategic Plan?*

The goal of the Nutritional Sciences PhD degree program is to expand the graduate education experience through an interdisciplinary environment. The proposed NS graduate program is a logical outgrowth of the existing concentration developed in 1993 when Dean Lockhart encouraged such efforts. It is anticipated that the new degree program will increase the number of matriculated graduate students. Since the NS concentration was established, 19 PhDs have been awarded. These students are actively contributing to the field at various levels. However, as competition for graduate students has increased in all areas of the biological sciences, coupled with the goal of UF in reaching top-tier status, it is necessary to capitalize on the interdisciplinary opportunities of our institution. Student recruitment, which is increasingly dependent on Web-based activity, will be enhanced since currently the NS concentration is within the FSHN Department, and thus does not have a separate listing with which prospective applicants can readily identify.

The UF Strategic Plan has listed Biological Sciences as an area of emphasis. Nutrition as a field is central to life and is a subject of strong continued interest from the lay public both for their personal health and that of domestic animals. The issues in nutritional sciences are being approached from virtually all venues in the biological sciences, including genomics, epigenetics, bioinformatics, molecular biology, transgenic animal models, analytical biochemistry, clinical research, biostatistics, etc. The abundance of resources available for graduate students at UF provides an exceptionally wide spectrum of research opportunity that is not available at even the largest NS programs of other campuses.

- B. *How does the proposed program specifically relate to existing institutional strengths such as programs of emphasis, other academic programs and/or institutes and centers?*

At the present time, UF has a robust array of formal courses in NS and a very active research seminar program that attracts many national leaders in the field to the UF campus annually. These activities contribute to other related programs on the campus, including Animal Sciences, Veterinary Medicine, Applied Physiology and Kinesiology, and Medicine. While the faculty involved in the interdisciplinary NS program are from diverse backgrounds, most have contributed their expertise to the NS field through leadership roles in professional societies in nutrition and in editorial roles for journals in the NS field. Interaction with this well-recognized faculty will enhance the educational experience for NS students.

- C. *Describe the planning process leading up to submission of this proposal. Include a chronology of activities, listing the university personnel directly involved and any external individuals who participated in planning. Provide a timetable of events for the implementation of the proposed program.*

Chronology of activities:

In March 1998, in a report on a USDA-coordinated review of the FSHN Department, team member Dr. Barry Shane, Chair, Department of Nutritional Sciences at UC-Berkeley, noted, "despite the relatively small number of nutrition faculty, they have made a major impact and have a very strong program with high national visibility." Further in the report, "The possibility of campus-wide graduate groups, as opposed to departmental graduate programs, might be explored as

graduate groups, as opposed to departmental graduate programs, might be explored as a mechanism for developing stronger graduate programs and increase the likelihood of extramural funding.”

In May 2002, the Presidential Task Force on the Future of the University of Florida completed a report. Among the recommendations was one that emphasized expanding graduate education at the doctoral level, and another to promote interdisciplinary research in the biological sciences. That report merged well with informal discussions that had been ongoing by the Nutritional Sciences faculty of the Food Science and Human Nutrition Department. These merge well with the earlier external review, which suggested that the departmental graduate program should be expanded and strengthened. Feedback has been obtained from alumni of the NS graduate program. The latter indicated that the FSHN graduate program was actually two programs operating as one. This was correct, since there are no mutual courses, admissions to the two concentrations are administered by the two respective faculties within the department, and the NS concentration includes extensive course work in Biochemistry and Molecular Biology (BCH) and other life sciences.

In September 2003, creation of interdepartmental graduate programs was discussed at the IFAS Faculty Advisory Committee meeting attended by IFAS Vice President Michael Martin. NS was used as an example for such a new program.

In November 2004, Dr. Jimmy Cheek, who, at that time, was Dean of the College of Agricultural and Life Sciences, met at his request with Dr. Robert Cousins, Director of the Center for Nutritional Sciences, to stress his desire to support creation of an interdisciplinary graduate program in NS following along the lines of the programs in Plant Molecular and Cell Biology and Animal Molecular and Cell Biology.

In December 2004, the Nutritional Sciences faculty of the FSHN department voted to establish a separate graduate program as a natural migration from the concentration to enhance the scope of the NS program and to attract the best graduate students.

In December 2004, informal discussions were held with Dr. Kenneth Gerhardt, Interim Dean of the Graduate School.

In January 2005, Dr. Charles Sims, Chair of the FSHN department, appointed a committee composed of R. Cousins, Chair; J. Gregory; B. Langkamp-Henken; and M. Knutson with the charge to develop the Doctoral Degree Program.

Timetable for implementation of program:

Approval Unit	Date
Program Director	Fall 2005
CALS Curriculum Committee	Spring 2006
Dean, CALS	Spring 2006
Graduate Council	Fall2006
University Curriculum Committee	Spring 2007
UF Faculty Senate	Spring 2007
Academic Affairs	TBD
University Administration	TBD
Board of Trustees	TBD
Notification of Florida Board of Education and UF Approval	TBD
First Students Admitted	August2007

III. Program Quality - Reviews and Accreditation

If there have been program reviews, accreditation visits, or internal reviews in the discipline pertinent to the proposed program, or related disciplines, provide all the recommendations and summarize the institution's progress in implementing the recommendations.

Doctoral programs of UF have not been reviewed recently by external agencies. The National Research Council of the National Academies had planned a new review of doctoral programs in the U.S, but that has been delayed until 2006. Of note is that, in the new NRC review, Nutritional Sciences will be reviewed as a distinct graduate degree discipline. It is planned to have the proposed program in place by the start of that review. The University of Florida is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award associate, bachelor's, master's, doctoral, specialist, engineer, and professional degrees.

IV. Curriculum

A. For all programs, provide a sequenced course of study and list the expected specific learning outcomes and the total number of credit hours for the degree. Degree programs in the science and technology disciplines must discuss how industry-driven competencies were identified and incorporated into the curriculum, as required in FS 1001.02 (6). Also indicate the number of credit hours for the required core courses, other courses, dissertation hours and the total hours for the degree.

The program of study will rely on existing courses offered at UF by current faculty members. The curriculum and general requirements (e.g., admission standards, structure of supervisory committee, admission to candidacy, and dissertation and final exam policies) for the proposed degree in Nutritional Sciences will be similar to the concentration in Nutritional Sciences for the doctoral degree presently awarded in Food Science and Human Nutrition. The doctoral degree in NS is a research degree that focuses on basic research. Doctoral students will spend about five years beyond a bachelor's degree or at least three years beyond a master's degree in a combined program of formal coursework and dissertation research. Students will be involved in research throughout their entire doctoral program.

The Supervisory Committee for doctoral programs shall consist of a minimum of four members selected from the graduate faculty. At least three members must be from faculty of the Interdisciplinary Program in Nutritional Sciences and one member from a different program. A minimum of 90 credits beyond the bachelor's degree or 60 beyond a Master's degree is required for the Ph.D. degree. At least a portion of the last 60 credits would be in formal coursework (not research). Students entering the doctoral program with a completed M.S. degree or appropriate graduate work may transfer up to 30 credit hours; transfer of credit will be subject to existing graduate school policies. Candidates for the doctoral degree must complete at least 3 years in residence at the University of Florida campus.

The qualifying examination is required of all candidates for the PhD, and can only be taken while the student is appropriately registered. It is a single examination consisting of two parts, written and oral. It will be developed and administered by the supervisory committee. The examination requirements will be consistent with Graduate Council policy as stated in the UF Graduate catalog. The student is considered to have satisfactorily passed the qualifying exam when the decision of the supervisory committee is unanimously affirmed. If the examination is unsatisfactory, the supervisory committee may permit a second examination or deny the student continued registration in the program.

General Required Core Courses

Catalog #	Course Title	Credits
BCH 6206	Advanced Metabolism	3
FOS 6915	Research Planning	2
HUN 6812C	Analytical Techniques in Nutritional Biochemistry	1
HUN 6938	Nutritional Sciences Seminar	1 each year; max 4
STA 6166	Statistical Methods in Research I (or approved equivalent)	3

Plus at least 6 of the following:

Catalog #	Course Title	Credits
HUN 5246	Current Issues in Dietary Supplements	2
HUN 5441	Metabolic Response to Enteral and Parenteral Nutrition	2
HUN 5447	Nutrition and Immunity	3
HUN 6245	Advanced Human Nutrition	3
HUN 6301	Nutritional Aspects of Lipid Metabolism	3
HUN 6305	Nutritional Aspects of Carbohydrates	3
HUN 6321	Proteins and Amino Acids in Nutrition	4
HUN 6331	Vitamins in Human Nutrition <u>or</u>	3
ANS 6449	Vitamins	3
HUN 6356	Minerals in Nutrition <u>or</u>	3
ANS 6723	Mineral Nutrition and Metabolism	3
HUN 6939	Advanced Clinical Nutrition	2

In addition to the general core courses described above, students are required to meet credit requirements through additional course work as determined by the Supervisory Committee. Selection of those courses is based on individual scientific interests and future career goals.

The following courses are recommended:

Catalog #	Course Title	Credits
ANS 6718	Nutritional Physiology of Domestic Animals <u>or</u>	3
VME 5244	Physiology: Organ Systems	4
BCH 5413	Mammalian Molecular Biology and Genetics	3
GMS 6140	Principles of Immunology	3

Selected elective courses (based on student interest and goals) include:

Catalog #	Course Title	Credits
ANG 5467	Culture and Nutrition	3
ANS 5446	Animal Nutrition	3
ANS 6458	Advanced Methods in Nutrition Technology	3
ANS 6717	Energy Metabolism	3
ANS 6767	Molecular Endocrinology	3
BCH 6415	Advanced Molecular & Cell Biology	3
CAP 5510	Bioinformatics	3
CHM 6670	Inorganic Biochemistry	3
GEY 6646	Issues and Concepts in Gerontology	3
GMS 6011	Mouse Genetics	1
GMS 6012	Human Genetics	1
GMS 6015	Human Genetics II	1
GMS 6400C	Principles of Physiology	6
GMS 6403	Advanced Endocrinology	4
GMS 6800	Fundamentals of Epidemiology	3
GMS 6814	Molecular and Genetic Epidemiology	2
HSC 6507	Epidemiology	3
PET 6355C	Physiological Bases of Exercise and Sport Sciences	3
PET 7368	Exercise Metabolism	3
STA 6167	Statistical Methods in Research II	3
VME 6602	General Toxicology	3

Additionally, students are required to present a 40-minute seminar once each year, except for the first year of study, and enroll in Nutritional Sciences Seminar course (HUN 6938) during the semester of each presentation. The annual seminars will be on general topics approved by the Major Professor and Seminar Coordinator, and are considered as teaching experience. The final seminar will be a presentation of dissertation research results.

B. Describe the admission standards and graduation requirements for the program.

Direct admission to our NS doctoral program requires a GRE score of at least 1000 (Verbal plus Quantitative), and an undergraduate Grade Point Average (GPA) of 3.0 (4.0 =A) over the last 60 credits (junior and senior years). A 3.0 average in science courses is essential. Under unusual circumstances and with justification, a slightly lower GRE or GPA may be the basis for conditional admittance. In addition, international students must submit an acceptable score on the Test of English as a Foreign Language score (TOEFL).

Applicants must be full-time students, be in good academic standing, complete a Form 2 Course Work plan, and establish a Supervisory Committee comprised of at least three faculty from the Interdisciplinary Program and one outside faculty member. Additionally, doctoral students are to pass a qualifying exam administered by the respective committee, complete research and proposed coursework, and complete and defend a doctoral dissertation in order to graduate within the NS doctoral program.

- C. *List the accreditation agencies and learned societies that would be concerned with corresponding bachelor's or master's programs associated with the proposed program. Are the programs accredited? If not, why?*

Doctoral programs are generally not accredited by professional societies. This doctoral program in Nutritional Sciences would be a graduate program listed by the American Society for Nutrition. The University of Florida is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award doctoral degrees.

- D. *Provide a one or two sentence description of each required or elective course.*

Required and highly recommended courses include:

BCH 6206 – Advanced Metabolism. The reactions of intermediary metabolism with emphasis on their integrations, mechanisms, and control. Examples from current literature extensively discussed.

FOS 6915 – Research Planning.) *Required of first-year graduate students.* Planning and initiating research, experimental techniques, analysis of data, reporting of results.

HUN 6812C – Analytical Techniques in Nutritional Biochemistry. Biochemical analyses of tissues and fluids, radio-tracer methodology, metabolic studies, tissue handling, and formulation of experimental animal diets.

HUN 5246 – Current Issues in Dietary Supplements. Federal laws and regulations covering definition, marketing, and labeling of dietary supplements. Discussion of specific vitamins, minerals, herbs, and ergogenic aids. Review of scientific literature and public information.

HUN 5441 – Metabolic Response to Enteral and Parenteral Nutrition. Response of the body's organ systems to nutritional support by the enteral and parenteral routes, with emphasis on physiological and biochemical adaptations.

HUN 5447 – Nutrition and Immunity. The role of nutrition in immunity. Effect of nutrients, foods, and dietary supplements on regulation of immune system.

HUN 6245 – Advanced Human Nutrition. Ingestion, digestion, absorption, transport, metabolism, and excretion of nutrients; metabolic and neuroendocrine controls.

HUN 6301 – Nutritional Aspects of Lipid Metabolism. Role of lipids in nutrition, with emphasis on energy metabolism and derangements in chronic diseases.

HUN 6305 – Nutritional Aspects of Carbohydrates. Characteristics, absorption, and metabolism of common carbohydrates in the food chain; carbohydrate metabolism and its regulation; carbohydrate metabolism in disease.

HUN 6321 – Proteins and Amino Acids in Nutrition. Digestion, absorption, and degradation; emphasis on turnover, requirements, assessment of quality, and effects of deficiencies, toxicities, and physiological stresses.

HUN 6331 – Vitamins in Human Nutrition. Biochemical and physiological functions; nutrient requirements and interactions; response to deficiencies and excesses; or

ANS 6449 – Vitamins. Historical development, properties, assays, and physiological effects.

HUN 6356 – Minerals in Nutrition. Biochemical and physiological aspects of mineral absorption, metabolism, and function; or

ANS 6723 – Mineral Nutrition and Metabolism. Physiological effects of macro- and micro-elements, mineral interrelationships.

HUN 6938 – Nutritional Sciences Seminar. Presentation of reports on research in nutrition.

HUN 6939 – Advanced Clinical Nutrition. Application of normal and therapeutic nutrition principles to specific clinical topics based on cases from health center environment.
STA 6166 – Statistical Methods in Research I. Analysis of variance for basic experimental designs.

Optional courses include:

ANS 6458 – Advanced Methods in Nutrition Technology. Demonstrations and limited performance of procedures used in nutrition research.
BCH 5413 – Mammalian Molecular Biology and Genetics. Biochemical and genetic approaches to understanding vertebrate and particularly mammalian molecular biology, moving from basic processes of replication, transcription, and protein synthesis to signal transduction, cell cycle, cancer, genomics, and developmental genetics.
BCH 6415 – Advanced Molecular and Cell Biology. Molecular biology of pro- and eukaryotic organisms, emphasis on understanding selected aspects of molecular regulation of gene expression.
ANS 6718 – Nutritional Physiology of Domestic Animals. Integration of endocrine, biochemical, molecular control of nutritional processes in domestic animals; or
VME 5244 – Physiology: Organ Systems. Physiology of nervous, muscle, blood, cardiovascular, respiratory, renal, gastrointestinal, and endocrine systems.
GMS 6140 – Principles of Immunology. Biological and biochemical aspects of hosts' resistance and immunity; the chemical and physiochemical properties of the proteins of immune reactions.

Selected elective courses (based on interest and goals):

ANG 5467 – Culture and Nutrition. The theory, methodology, and substantive material of nutritional anthropology. Emphasis on cross-cultural bio-behavioral patterns.
ANS 5446 – Animal Nutrition. Carbohydrates, fats, proteins, minerals, and vitamins, and their functions in the animal body.
ANS 6717 – Energy Metabolism.
ANS 6767 – Molecular Endocrinology. Molecular basis of hormone action and regulation, and emerging techniques in endocrine system study; emphasis on molecular mechanisms of growth, development, and reproduction.
CAP 5510—Bioinformatics. Basic concepts of molecular biology and computer science.
CHM 6670 – Inorganic Biochemistry. Role of elements in biology. Modern spectroscopic and physical methods for study of Group I and II metals, metalloenzymes, metal ion transport and storage, functions of nonmetals in biochemical systems, and biomedical/biotechnical applications of metals.
GEY 6646 – Issues and Concepts in Gerontology. A multi-disciplinary, team-taught survey of the field.
GMS 6011 – Mouse Genetics. Theoretical framework for understanding fundamentals of mouse genetics and use of mouse model for study of human disease as well as advanced technical tools used for research and their application to novel problems.
GMS 6012 – Human Genetics. Theoretical framework for understanding fundamentals of human genetics as well as advanced technical tools used for research.

- GMS 6015—Human Genetics II. Theoretical framework, emphasizing functional genomics and bioinformatics as well as advanced technical tools used for research and development in these areas.
- GMS 6400C – Principles of Physiology. Physiology of mammalian organ systems, with special reference to the human.
- GMS 6403 – Advanced Endocrinology. Readings, discussions, and lectures on recent advances in endocrinology.
- GMS 6800 – Fundamentals of Epidemiology. Introduction to epidemiology principles and methods for students majoring in any aspect of health.
- GMS 6814 – Molecular and Genetic Epidemiology. Description of use of human genetics and molecular biology in studying host susceptibility to disease. Mendelian and non-Mendelian genetics.
- HSC 6507 – Epidemiology. Procedures used in study of origin, distribution, and control of chronic and communicable diseases; emphasis on role of health education interventions in disease control.
- PET 6355C – Physiological Bases of Exercise and Sport Sciences. Application of fundamental concepts of human physiology to programs of physical education and sports. Recent research developments in sports physiology.
- PET 7368 – Exercise Metabolism. Principles of metabolic regulation during exercise; effects of chronic exercise on muscle metabolism.
- STA 6167 – Statistical Methods in Research II. Analysis of covariance and general linear model. Factorial, nested, split-plot, and incomplete block designs. Analysis of count data.
- VME 6602 – General Toxicology. General principles of toxicology and mechanisms by which toxic effects occur in target organs and tissues.

E. Describe briefly the anticipated delivery system for the proposed program as it may relate to resources e.g., traditional delivery on main campus; traditional delivery at branches or centers; or nontraditional instruction such as instructional technology (distance learning), self-paced instruction, and external degrees. Include an assessment of the potential for delivery of the proposed program through collaboration with other universities, both public and private. Cite specific queries made of other institutions with respect to the feasibility of shared courses utilizing distance learning technologies, and joint-use facilities for research or internships.

This program will be offered to full-time students at the main campus of the University of Florida using existing faculty from various colleges and departments. Only graduate faculty will be eligible to serve on the student's supervisory committee. The residency requirement policy for UF will be followed, and students will be enrolled full-time for a minimum of three years. However, in the future as need arises, the Graduate Council may be asked to consider proposals to confer this degree jointly with other institutions, including international universities.

V. Assessment of Current and Anticipated Faculty

- A. *Use DCU Table One to provide information about each existing faculty member who is expected to participate in the proposed program by the fifth year. Append to the table the number of master's theses directed, number of doctoral dissertations directed, and the number and type of professional publications for each faculty member.*

DCU Table One lists the Graduate Faculty who will participate in the NS doctoral program, and will serve as Chairs or Members of Supervisory Committees of students. External members of these committees will be chosen from the over 2800 graduate faculty members not affiliated with the NS program. Table C shows the graduate committee activity for each NS faculty member and their research publication record.

- B. *Also, use DCU Table One to indicate whether additional faculty will be needed to initiate the program, their faculty code (i.e., A, B, C, D, or E as detailed in the lower portion of Table One), their areas of specialization, their proposed ranks, and when they would be hired. Provide in narrative the rationale for this plan; if there is no need for additional faculty, explain.*

No additional faculty are required to implement this new doctoral degree program. Some faculty have been hired since the NS graduate concentration was initiated in 1993. The robust growth of the undergraduate NS major (to over 700 students) may result in additional faculty hires, but these will not be specifically for this graduate program, and have not been included in this table. Such additional faculty would, however, have credentials commensurate to be on the Graduate Faculty.

- C. *Use DCU Table One to estimate each existing and additional faculty member's workload (in percent person-years) that would be devoted to the proposed program by the fifth year of implementation, assuming that the program is approved. (Note: this total will carry over to DCU Table Four's fifth year summary of faculty positions.)*

Data on faculty time expenditures show faculty members spend, on average, four hours per week with each doctoral student they advise as Chair of the Supervisory Committee and research dissertation advisor (10% effort per student). It is anticipated that, by the fifth year of the program, fourteen doctoral students will be enrolled. If we assume that ten faculty members are serving as Chairs of these Supervisory Committees, the costs involved are \$126,000 in faculty salary. This is based on an average annual salary of \$90,000, excluding benefits. Those costs would be absorbed by the department of each of those faculty members.

D. In the case of PhD programs, use DCU Table Two to compare the number of faculty, research productivity and projected number of students to at least three peer programs, two of which must be outside Florida. For those disciplines that are included in the National Research Council (NRC) Research-Doctorate Programs in the United States and the National Science Foundation (NSF), please utilize the data from these two sources. NRC data is available on CD ROM and the NSF data is available on-line at www.nsf.gov/sbe/srs/profiles/. For disciplines that are not included in these two sources, please utilize alternate sources to provide comparable data. Universities may choose to provide additional peer data comparisons that are not available from NRC or NSF, such as percent of graduate students supported by contracts and grants, and total contracts and grants for the most recent year.

Neither the National Research Council nor the National Science Foundation includes Nutritional Sciences among the taxonomy used for ranking of graduate programs. Consequently, the information is not available for the peer comparison requested. Using data for another biological science, physiology, DCU Table Two shows the comparisons of UF to peer institutions (University of Michigan, University of California-Berkeley, and Ohio State University).

The NRC, in their next assessment of doctoral programs, was to, for the first time, list Nutritional Sciences (Nutrition) as a separate field in the Life Sciences. Unfortunately, the NRC study has been delayed, and collection of data will not commence until July 2006. Hopefully, if this proposal is approved, the University of Florida will be listed in the next NRC report as an institution having a Ph.D. program in Nutritional Sciences.

The interdisciplinary Nutritional Sciences graduate programs of three peer institutions are shown in Table A. These represent well-established programs. The data were obtained directly from each program, as the National Research Council does not have such information available.

Table A. Similar Interdisciplinary Programs in Nutritional Sciences

Institution	Degree Name	Description	Date Started	Total Graduates
University of Illinois at Urbana-Champaign	Nutritional Sciences	The Division of Nutritional Sciences has 54 faculty and is organized on an interdepartmental, intercollege and intercampus basis. The curriculum focuses on biochemistry and metabolism, enabling the students to play an active role in translating observations resulting from genomic and molecular approaches to whole-body metabolism.	1968	~150 PhD
University of Wisconsin-Madison	Nutritional Sciences	The Interdepartmental Graduate Program in Nutritional Sciences includes 42 faculty members. This program includes the faculty members of the Nutritional Sciences Department. It also cuts across departmental and College lines so that investigators in other departments who have an interest in nutrition research actively participate in the program and serve as advisors for graduate students seeking a degree in nutrition. Students in this interdepartmental program will choose to focus their training in one of three emphasis groups: Biochemical and Molecular Nutrition, Human Nutrition, Animal Nutrition.	1989	~60 PhD
Pennsylvania State University	Graduate Program within the Department of Nutritional Sciences	Consisting of 37 faculty, the Integrative Biosciences Program in Nutrition Sciences aims to promote excellence in graduate education in nutrition by capitalizing on the expertise existing within the biological, biomedical, behavioral and social sciences at Penn State. A student may pursue a Ph.D. degree in nutrition while studying under the direction of any member of the graduate group.	2000	~30 PhD

VI. Assessment of Current and Anticipated Resources

A. *In narrative form, assess current facilities and resources available for the proposed program in the following categories:*

1. *Library volumes (Provide the total number of volumes available in this discipline and related fields.)*

UF library statistics for 2004-2005 indicate the UF library system has over 4,000,000 catalogued volumes. Of particular relevance to this new graduate degree program are the 350,000 volumes in the Health Science Library, and the 679,000 volumes in the Marston Science Library. Library expenditures for 2004-2005 were \$10,167,169.

2. *Serials (Provide the total number available in this discipline and related fields, and list those major journals which are available at your institution.)*

The total number of journal subscriptions is 5,000. From electronic collections, it is possible to review full text articles from about 30,000 journals.

3. *Describe classroom, teaching laboratory, research laboratory, office, and any other type of space, which is necessary and currently available for the proposed program*

Facilities available to students in the Nutritional Sciences graduate program will be derived from the multiple academic units participating. This will include laboratory facilities of the NS faculty, classrooms, computer facilities, research animal facilities, the Clinical Research Center, and core laboratories of the Interdisciplinary Center for Biotechnology Research (ICBR), Genetics Institute, and Brain Institute. Table B gives the total square footage available in the colleges of faculty in involved in this new program. No new space is required to implement this new degree program.

Table B. Space available for UF and selected colleges

	UF Total	CALS	Medicine	CVM	CLAS
Classrooms	368,103	8,723	3,122	29,042	10,094
Teaching labs	477,796	38,995	6,400	Incl above	80,424
Research labs	2,104,688	480,385	243,455	49,307	267,378
Offices	2,601,741	238,173	349,736	45,682	273,938
Support space	2,244,174	48,073	10,448	27,199	405

4. *Equipment, focusing primarily on instructional and research requirements*

Laboratories of NS interdisciplinary faculty have state-of-the-art research equipment needed for contemporary biological research. This includes advanced equipment for genomic analysis, mass spectrometry for stable isotope metabolic studies, quantitative polymerase chain reaction, fluorescence microscopy, cell culture for human and animal cells. Core laboratories of the various Institutes and ICBR further expand opportunities for graduate students in this program. No additional equipment is needed to initiate this degree program.

5. *Fellowships, scholarships, and graduate assistantships (List the number and amount allocated to the academic unit in question for the past year.)*

Students admitted to the NS doctoral program will be eligible for Presidential Fellowships, Alumni Fellowships, and Research Assistantships based on past record of achievement. NS students recruited to this program will be eligible to be considered for the Davis Graduate Nutrition Enhancement Awards, which provide an extra stipend of \$5,000 per year. These supplements are awarded on a competitive basis by a faculty committee. This interdisciplinary doctoral program would be able to compete for Training Grants in Nutritional Sciences that are awarded by the NIH. It is anticipated that all doctoral students in this program would receive assistantship or fellowship support.

6. *Internship sites if appropriate*

Internships are not part of the educational requirements for this program. Some students may elect to do postdoctoral training upon completion of the Ph.D.

- B. *Describe additional facilities and resources required for the initiation of the proposed program (e.g., library volumes, serials, space, assistantships, specialized equipment, other expenses, OPS time, etc.). If a new capital expenditure for instructional or research space is required, indicate where this item appears on the university's capital outlay priority list. The provision of new resources will need to be reflected in the budget table (DCU Table Four), and the source of funding indicated. DCU Table Four only includes I&R costs. If non-I&R costs, such as indirect costs affecting libraries and student services, are expected to increase as a result of the program, describe and estimate those expenses in narrative form. It is expected that high enrollment programs in particular would necessitate increased costs in non- I&R activities.*

All of the resources necessary to offer the Ph.D. in Nutritional Sciences are currently available.

ACCOUNTABILITY

VII. Assessment of Need and Demand

- A. *What national, state, or local data support the need for more people to be prepared in this program at this level? (This may include national, state, or local plans or reports that support the need for this program; demand for the proposed program which has emanated from a perceived need by agencies or industries in your service area; and summaries of prospective student inquiries.) Indicate potential employment options for graduates for the program. If similar programs (either private or public) exist in the state, provide data that support the need for an additional program. Summarize the outcome of communication with such programs.*

National and state demand for people in this program by agencies, academia, and industry

Recipients of Ph.D. degrees in the area of Nutritional Sciences are educated to enter diverse careers. These can range from research on nutrient utilization at the molecular level to public policy issues related to nutrition, such as obesity. The public has a keen interest in nutrition and health promotion that generates billions of dollars in nutrition-related commercial activity. Doctoral recipients in NS, because of the heavy emphasis on biochemistry and molecular biology, frequently enter the biotechnology field. Many others enter the academic area for teaching/research careers or serve as Extension Service faculty. Nutrition-related product development is a major activity of many food/pharmaceutical companies, and these research activities are frequently administered by scientists with doctoral degrees in NS. The National Cancer Institute has a major campaign to understand the role of nutrition in cancer risk/prevention. Ph.D.-level scientists are needed to understand the nature of such relationships. Recognizing these needs, the NIH offers peer-evaluated Training Grants for graduate students in NS.

Summary of student inquiries

Faculty of this proposed Interdisciplinary graduate program get numerous requests for information about graduate education in NS. Queries are increasingly routed via the Internet. Consequently, it is important to have appropriate, all-inclusive websites that define the significant strength UF has for graduate education in the NS field. Currently, this diverse strength is not immediately obvious because no central doctoral program is emphasized. A separate NS doctoral program would correct that problem.

Potential employment options for graduates

The employment outlook for students with Ph.D. degrees in NS continues to be excellent. Recent degree recipients have gone into postdoctoral research (NIH and NASA), nutrition research in the food industry, and academia (teaching/research). Among the employers are Hill's Pet Foods, University of Connecticut, Kemin Foods, California State at Pomona, Mayo Clinic, Wyeth Laboratories, Ross Products Division of Abbott Labs, and University of North Florida. The American Society for Nutritional Sciences maintains a detailed description of career and employment opportunities.

- B. *Use DCU Table Three-B to indicate the number of students (headcount and FTE) you expect to major in the proposed program during each of the first five years of implementation, categorizing them according to their primary sources. In the narrative following Table Three, the rationale for*

enrollment projections should be provided and the estimated headcount to FTE ratio explained. If, initially, students within the institution are expected to change majors to enroll in the proposed program, describe the shifts from disciplines, which will likely occur.

It is anticipated that the number of graduate students majoring in Nutritional Sciences at the University of Florida will increase and, therefore, increase the total head count of doctoral students on campus as a result of approval of this new program. Of the top-tier universities, UC-Berkeley, Cornell, U. Illinois, Penn State, U. Wisconsin, and UC-Davis all award doctoral degrees in Nutritional Sciences from Interdisciplinary Programs. Advancing the NS graduate program from a concentration to a degree program will place UF on the same playing field with these institutions, and allow us to attract more bright young students to the campus. Independent degree program status will also help to elevate the national visibility of the program.

Students enrolled in the program will be supported by either fellowships or assistantships, and are required to register for 9 credit hours per semester during the academic year, and 6 credit hours during summer, for a total of 24 hours per year. Students on fellowships will be enrolled at a slightly higher level, with 12 credit hours per semester during the academic year, and 8 credit hours over the summer, for a total of 32 credit hours per year. Therefore, the average graduate student equals 0.87 FTE.

No additional faculty will be needed if the program is approved, as the concentration is already in place. We do not expect to experience a shift of students to this program from existing programs, since this concentration has been available for over 10 years and shifts have not occurred.

- C. *For all programs, indicate what steps will be taken to achieve a diverse student body in this program. Please create a place for signature at the end of section (VII) (C) and have your university's Equal Opportunity officer read, sign, and date this section of the proposal.*

The new degree in Nutritional Sciences will be part of CALS, and will follow the same standard practices and procedures as expected of all programs at the University of Florida to ensure its full availability to the diverse student body at UF.

Mr. Larry Ellis, Equal Opportunity Office

Date

VIII. Budget

- A. *Assuming no special appropriation for initiation of the program, how would resources within the institution be shifted to support the new program?*

There are no new costs associated with establishing this new graduate program. Salaries and benefits are provided through the line appointments of the departments of faculty participating in the program. No additional faculty appointments specific to this graduate program are anticipated. Resources needed for student research and graduate assistantships will be provided by faculty through research assistantships or Alumni Fellowships. Additional institutional resources will not be needed for this new program. It is anticipated that the new program will result in an increase in

graduate students enrolled. An interdisciplinary NS program as proposed may actually facilitate generation of extramural training grant funds.

- B. *Use DCU Table Four to display dollar estimates of both current and new resources for the proposed program for the first and the fifth years of the program. In narrative form, identify the source of both current and any new resources to be devoted to the proposed program. If other programs will be negatively impacted by a reallocation of resources for the proposed program, identify the program and provide a justification.*

The values shown in DCU Table Four were derived from estimates of time faculty will devote to this graduate program. These expenses will be absorbed by the home departments of the participating faculty in this interdisciplinary program. It is anticipated that the net result of establishing this new program will be an increase in students enrolled at UF. It is not expected that this new program will be detrimental to existing programs.

- C. *Describe what steps have been taken to obtain information regarding resources available outside the institution (businesses, industrial organizations, governmental entities, etc.). Delineate the external resources that appear to be available to support the proposed program.*

A number of institutes of the NIH offer funds for training grants in nutritional science to provide tuition and stipends for graduate students. The University received one of these in the past. It was an interdepartmental nutritional sciences training effort between CALS and COM. The increased size of the participating faculty and the quality of the applicant pool should further enhance success in obtaining such funds. As more external resources need to be diverted to pay tuition of supported students, we need to move to an interdisciplinary program to be in the best position to attract extramural funds for student support.

- D. *Specifically address the potential negative impacts that implementation of the proposed program will have on related undergraduate programs (i.e., shift in faculty effort, reallocation of instructional resources, reduced enrollment rates, greater use of adjunct faculty and teaching assistants) and explain what steps will be taken to mitigate any such impacts. Also discuss the potential positive impacts that the proposed program might have on related undergraduate programs (i.e., increased undergraduate research opportunities, improved quality of instruction associated with cutting edge research, improved labs and library resources).*

The approval of the proposed Nutritional Sciences doctoral program is not expected to have a negative impact on undergraduate programs at UF. In fact, the undergraduate NS major has over 700 students. These students, well educated in basic sciences, form one pool of potential graduate students, and will provide students interested in NS with another career option. The interdisciplinary nature of the proposed NS program will improve research and instructional activities for undergraduates in the NS major through interaction with graduate students in the field.

- E. *Describe any other projected impacts on related programs, such as required courses in other departments.*

The courses that are part of the curriculum for this program are existing, and will not be impacted by the additional student numbers generated after the program is approved.

IX. Productivity

Provide evidence that the academic unit(s) associated with this new degree have been productive in teaching, research, and service. Such evidence may include trends over time for average course load, FTE productivity, student headcounts in major or service courses, degrees granted, external funding attracted; as well as qualitative indicators of excellence.

The Nutritional Sciences Concentration of the Food Science and Human Nutrition Department has a track record of 19 Ph.D. degrees awarded since its inception in 1993, as shown in Table C. During that period of time, many students have received national and local awards for their dissertation research in NS. Ph.D. recipients from this concentration have excelled in the job market, with positions in industry, government, and academia. Among the employers are Hill's Pet Foods, University of Connecticut, Kemin Foods, California State at Pomona, Mayo Clinic, Wyeth Laboratories, Ross Products Division of Abbott Labs, and University of North Florida. The faculty associated with the NS program are nationally and internationally recognized, and have an impressive list of achievements and awards, including a member of the National Academy of Sciences, commensurate with top-tier institutions. The NS faculty has a rich history of training postdoctoral research scientists. While these subfaculty do not teach formal lectures, their research expertise enriches the educational experience of graduate students with whom they interact. It is anticipated that public interest in diet and health promotion, and the evolving links between diet and disease, will provide a robust array of career opportunities for doctoral recipients in Nutritional Sciences.

The NS participating faculty have an excellent record of external funding, including research grants from the National Institutes of Health and United States Department of Agriculture. Graduate student research is published in excellent peer-reviewed journals; including *Proceedings of the National Academy of Sciences*, *Journal of Biological Chemistry*, *Journal of Nutrition*, *American Journal of Physiology*, and *American Journal of Clinical Nutrition*. Numerous students have co-authored review articles with their mentors.

Table C. Nutritional Sciences Faculty Productivity

Faculty				Master's Degree Committees			Ph.D. Degree Committees				Publications
Name	College	Rank	Status	Chair	Co-Chair	Member	Chair	Co-Chair	Member	External	
Badinga, Lokenga	CALS	Associate Professor	Tenured	4	0	6	2	0	9	1	Journal: 46 Book chapters: 1
Bailey, Lynn	CALS	Professor	Tenured	25	11	32	6	0	9	3	Journal: 97 Book chapters: 27
Bobroff, Linda	CALS	Professor	Tenured	18	1	13	0	0	1	4	Journal: 9 Book chapters: 2
Bourm, Peggy	CALS	Professor	Tenured	19	2	18	1	0	5	4	Journal: 46 Book chapters: 8
Cousins, Robert	CALS	Professor	Tenured	21	1	6	20	0	13	8	Journal: 158 Book chapters: 44
Frost, Susan	COM	Professor	Tenured	2	0	2	5	0	24	11	Journal: 35 Book chapters: 3
Gregory, Jesse	CALS	Professor	Tenured	18	2	34	4	0	30	4	Journal: 169 Book chapters: 27
Hill, Richard	CVM	Associate Professor	Tenured	1	1	0	0	0	0	1	Journal: 41 Book chapters: 2
Kauwell, Gail	CALS	Professor	Tenured	13	2	21	0	0	5	1	Journal: 27 Book chapters: 4
Kilberg, Michael	COM	Professor	Tenured	0	0	6	18	0	38	8	Journal: 110 Book chapters: 8 Books edited: 1
Knutson, Mitchell	CALS	Assistant Professor	Untenured	0	0	1	0	0	2	1	Journal: 11 Book chapters: 0
Langkamp-Henken, Bobbi	CALS	Associate Professor	Tenured	18	1	10	2	0	5	1	Journal: 41 Book chapters: 6
Leeuwenburgh, Christiaan	COM	Associate Professor	Tenured	12	0	5	3	0	9	2	Journal: 70 Book chapters: 6
Litherland, Sally	COM	Assistant Professor	Untenured	0	0	2	0	0	4	1	Journal: 18 Book chapters: 0
McDowell, Lee	CALS	Professor	Tenured	24	2	27	14	0	10	5	Journal: 297 Book chapters: 137 Books: 11
Miles, Richard	CALS	Professor	Tenured	12	0	21	2	1	27	3	Journal: 138 Book chapters: 3
Neu, Josef	COM	Professor	Tenured	0	0	8	0	0	3	0	Journal: 96 Book chapters: 11 Books edited: 4
Novak, Donald	COM	Chief, Ped. G.I.	Tenured	0	0	0	0	0	1	1	Journal: 47 Book chapters: 7
Percival, Susan	CALS	Professor	Tenured	16	0	19	4	1	7	5	Journal: 52 Book chapters: 3
Rowland, Neil	CLAS	Professor	Tenured	14	3	13	9	1	20	4	Journal: 245 Book chapters: 17
Samuelson, Don	CVM	Professor	Tenured	4	1	5	5	2	5	3	Journal: 121 Book chapters: 4
Sitren, Harry	CALS	Professor	Tenured	6	0	12	2	0	5	0	Journal: 51 Book chapters: 0
Stacpoole, Peter	COM	Professor	Tenured	1	0	1	0	0	1	4	Journal: 119 Book chapters: 2
Turner, R. Elaine	CALS	Associate Professor	Tenured	4	1	13	0	1	1	1	Journal: 12 Book chapters: 89

**DCU TABLE ONE
FACULTY PARTICIPATION IN PROPOSED DEGREE PROGRAM BY FIFTH YEAR**

Faculty CODE	Faculty Name or "New Hire"	Academic Discipline/Specialty	Rank	(For Existing Faculty Only)		Initial Date for Participation in Proposed Program	5 th Year Workload in Proposed Program (Portion of Person-year)
				Contract Status <small>(Tenure status or non-tenured)</small>	Highest Degree Held		
A	Badinga, Lokenga	Animal Nutrition	Assoc. Prof.	Tenured	Ph.D.	2005	0.10
A	Bailey, Lynn	Human Nutrition	Prof.	Tenured	Ph.D.	2005	0.10
A	Bobroff, Linda	Nutrition Education	Prof.	Tenured	Ph.D.	2005	0.05
A	Borum Peggy	Biochemistry and Metabolism	Prof.	Tenured	Ph.D.	2005	0.05
A	Cousins, Robert	Nutrition/Biochemistry	Prof.	Tenured	Ph.D.	2005	0.10
A	Frost, Susan	Biochemistry	Prof.	Tenured	Ph.D.	2005	0.05
A	Gregory, Jesse	Nutritional Biochemistry	Prof.	Tenured	Ph.D.	2005	0.10
A	Hill, Richard	Veterinary Nutrition	Assoc. Prof.	Tenured	D.V.M./PhD	2005	0.05
A	Kauwell, Gail	Human Nutrition	Prof.	Tenured	Ph.D.	2005	0.10
A	Kilberg, Michael	Biochemistry	Prof.	Tenured	Ph.D.	2005	0.05
A	Knutson, Mitchell	Nutritional Biochemistry	Asst. Prof.	Untenured	Ph.D.	2005	0.10
A	Langkamp-Henken, Bobbi	Human Nutrition	Assoc. Prof.	Tenured	Ph.D.	2005	0.10
A	Leeuwenburgh, Christiaan	Aging Physiology	Assoc. Prof.	Tenured	Ph.D.	2005	0.05
A	Litherland, Sally	Diabetes/Immunology	Asst. Prof.	Untenured	Ph.D.	2005	0.05
A	McDowell, Lee	Animal Nutrition	Prof.	Tenured	Ph.D.	2005	0.10
A	Miles, Richard	Poultry/Fish Nutrition	Prof.	Tenured	Ph.D.	2005	0.10
A	Novak, Donald	Pediatric Gastroenterology	Chief	Tenured	M.D.	2005	0.05
A	Neu, Josef	Pediatric Nutrition	Prof.	Tenured	M.D.	2005	0.05
A	Percival, Susan	Human Nutrition	Prof.	Tenured	Ph.D.	2005	0.10
A	Rowland, Neil E.	Psychology/Food Intake	Prof.	Tenured	Ph.D.	2005	0.05
A	Samuelson, Don	Veterinary Nutrition	Prof.	Tenured	Ph.D.	2005	0.05
A	Sitren, Harry	Human Nutrition	Prof.	Tenured	Ph.D.	2005	0.10
A	Stacpoole, Peter	Clinical Nutrition	Prof.	Tenured	M.D./Ph.D.	2005	0.05
A	Turner, R. Elaine	Human Nutrition	Assoc. Prof.	Tenured	Ph.D.	2005	0.05

Faculty CODE	Corresponding Faculty Position Category in TABLE 3 for the Fifth Year	Proposed Source of Funding for Faculty	TOTAL 5 th Year Workload by Budget Classification
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A	Current General Revenue	Existing Faculty – Regular Line	\$168,919
B	Current General Revenue	New Faculty – To be Hired on Existing Vacant Line	
C	New General Revenue	New Faculty – To be Hired on a New Line	
D	Contracts and Grants	Existing Faculty – Funded on Contracts and Grants	
E	Contracts and Grants	New Faculty – To Be Hired on Contracts and Grants	

Overall Total for 5th Year			\$168,919
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DCU TABLE TWO PEER COMPARISON DATA

Select at least three peer programs, two of which must be outside Florida, offering the proposed Ph.D. In identifying peers select programs in the same or similar field which are comparable to yours, perhaps located in institutions with missions analogous to yours, except that they already offer a Ph.D. Specify your criteria for selecting the peers. Utilizing data from the National Research Council (NRC) and National Science Foundation (NSF), provide comparative data for the department that will house the new program or core faculty who will participate in the new program, and comparative data for the projected student headcount. If the discipline proposed is not included in these sources, obtain comparable data from other sources. *Universities may choose to provide additional data comparisons that are not available from NRC or NSF, such as percent of graduate students supported by contracts and grants, and total contracts and grants for the most recent year.*

PHYSIOLOGY

NRC DATA	Univ. Florida	Univ. Michigan	U. California-Berkeley	Ohio State
Total Program Faculty	22	21	15	29
% Supported	68	86	87	79
% with Publications	100	95	93	93
Publications/Faculty	16.6	12.3	11.7	7.5
Total Graduate Students	17	34	48	67

LIFE SCIENCES R&D

NSF DATA	Univ. Florida	Univ. Michigan	U. California-Berkeley	Ohio State
R&D Expenditures (most recent three years in NSF data)	\$718,869,000	\$995,252,000	\$555,001,000	\$606,656,000
Year 1 Total	\$220,588,000	\$305,904,000	\$219,128,000	\$194,937,000
Year 2 Total	\$238,143,000	\$325,083,000	\$165,525,000	\$197,406,000
Year 3 Total	\$260,138,000	\$364,265,000	\$170,348,000	\$214,313,000

DEFINITIONS

- Total Faculty:** Total headcount of ranked faculty (professor, associate or assistant professor) participating in the program; full-time or part-time.
- % Supported:** Percentage of Total Program Faculty with external research support. If not using NRC data, specify time period and sources. For visual and performing arts faculty, include any external grants, commissions, and performance fees.
- % with Publications:** Percentage of Total Program Faculty publishing refereed journal articles. If not using NRC data specify time period. If this is a discipline in which books, music or other creative activity are a more important indicator of scholarly activity, you may include them, but justify doing so.
- Publications/Faculty:** The ratio of the total number of program publications to the number of Total Program Faculty. If not using NRC data, specify time period.
- Total Students:** The number of full and part-time graduate students enrolled. For the proposed program list projected headcount in the fifth year. Specify the year for peer data.
- R&D Expenditures:** Separately budgeted R&D current fund expenditures designed to produce specific research outcomes and either funded by an agency external to an academic institution or separately budgeted by an internal unit of the institution.

Revised 7/28/03

**DCU TABLE THREE-B
NUMBER OF ANTICIPATED MAJORS FROM POTENTIAL SOURCES***

GRADUATE DEGREE PROGRAM										
ACADEMIC YEAR	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
Source of Students (Non-Duplicated Count in Any Given Year)	HC	FTE	HC	FTE	HC	FTE	HC	FTE	HC	FTE
Individuals drawn from agencies/industries in your service area (e.g., older returning students)	1	0.87	1	0.87	1	0.87	1	0.87	2	1.74
Students who transfer from other graduate programs within the university	1	0.87	1	0.87	1	0.87	1	0.87	1	0.87
Individuals who have recently graduated from preceding degree programs at this university**										
Individuals who graduated from preceding degree programs at other Florida public universities										
Individuals who graduated from preceding degree programs at non-public Florida institutions										
Additional in-state residents**	1	0.87	2	1.74	2	1.74	2	1.74	2	1.74
Additional out-of-state residents**	2	1.74	2	1.74	4	3.48	5	4.35	5	4.35
Additional foreign residents**	1	0.87	2	1.74	2	1.74	3	2.61	4	3.48
Other (Explain)**										
TOTAL	6	5.22	8	6.96	10	8.70	12	10.44	14	12.18

* List projected yearly cumulative ENROLLMENTS instead of admissions.

Revised 8/8/03

** Do not include individuals counted in any PRIOR category in a given COLUMN.

*** If numbers appear in this category, they should go DOWN in later years.

DCU TABLE FOUR COSTS FOR PROPOSED PROGRAM

INSTRUCTION & RESEARCH	FIRST YEAR				FIFTH YEAR			
	General Revenue		Contracts & Grants	Summary	General Revenue		Contracts & Grants	Summary
	Current	New			Current	New		

POSITIONS (Person-years)								
Faculty	1.75	0		1.75	1.75	0		1.75
A & P								
USPS								
TOTAL	1.75	0		1.75	1.75	0		1.75

* Cells should relate directly to faculty numbers in Table 2

SALARY RATE								
Faculty	\$113,750			\$113,750	\$125,125			\$125,125
A & P								
USPS								
TOTAL	\$113,750			\$113,750	\$125,125			\$125,125

I & R EXPENSES								
Salaries and Benefits	\$153,563			\$153,563	\$168,919			\$168,919
Other Personnel Services								
Expenses								
Operating Capital Outlay								
Electronic Data Processing								
Library Resources								
Special Categories								
TOTAL I & R	\$153,563			\$153,563	\$168,919			\$168,919

Revised 5/6/03