

**Environmental NTRN, food systems sustainability, & health**

**Rationale:**

**INTERCONNECTION –FOOD/FOOD SYSTEMS/HEALTH/ENVIRONMENT**

**DGA: foundational to Public health- added in sustainability, 2015**

**Alignment CWRU STRATEGIC PLAN:**

**“ADVANCING INTERDISCIPLINARY INITIATIVES THAT ALIGN OUR EXPERTISE TO WORLD’S MOST PRESSING NEEDS”**

**“SCHOLARSHIP THAT DEEPENS OUR UNDERSTANDING”**

**VISION: “SUPPORT ADVANCEMENT OF THRIVING DISCIPLINES & NEW AREAS OF INTERDISCIPLINARY EXCELLENCE”**

**Support:**

**-Dr. Orman (chair “capacity is fine’ for intro environmental thinking)**

**- Dr. McCall-course instructor**

**-Dean SOM/ Dept. Chair**

**Resources: Existing**

**Intro Environ.Thinking (101);**

**340 (global food systems); 342; 201; 200; + elective**

**Electives: 328; 343; 341; 337; 300; 351**

**DESCRIPTION – New Minor Program – Nutrition Department: FINAL VERSION (Nov. 13, 2018)**

**College/School:** School of Medicine  
**Department:** Nutrition

**PROPOSED:**        major  
  X   minor  
       program  
       sequence  
       degree

**TITLE:** Environmental Nutrition, Food Systems Sustainability, and Health

Faculty Coordinator:

James H. Swain, PhD, RDN, LD, FAND

Associate Professor and Director DPD

(Environmental Nutrition, Food Systems Sustainability, and Health Minor Coordinator)

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Description and rationale for this new minor:

- 1) Environmental change impacts humans worldwide, with an influence lasting many generations into the future. An in depth understanding of the interplay between food systems – global food production, distribution, and selection – and environment and sustainability issues, as related to human nutrition, health, and well-being has never been more important. This new minor draws upon the specific expertise of faculty in the Nutrition Department and Environmental Studies. By completing this minor program, students will be better prepared to initiate, participate, and lead efforts aimed at resolving issues related to the environment, human health, and food systems sustainability.
- 2) This Environmental Nutrition, Food Systems Sustainability, and Health Minor will allow students to develop, examine, and apply knowledge in the related areas of food quality, feasible long-term global food systems, food science and chemistry, human nutrient requirements, and ethnic/cultural aspects of food production, selection, and preparation. A key concept will involve how environmental and sustainability issues directly affect the nutritive qualities of foods, thereby directly effecting human nutrition, health, and well-being.
- 3) Student will take courses covering aspects of human nutrition, food science/food chemistry, and environmental issues effecting food systems, with hands-on related culinary experience putting their knowledge into action.
- 4) There are no other minor programs like this at CWRU.

- 5) There are no other parallel minor programs available for undergraduate students within the regional Cleveland area.
- 6) Faculty Expertise: This new minor program is uniquely and strongly suited to provide students with the opportunity to receive instruction by experts in the fields of food science and nutrition, food systems sustainability, environmental studies, and health.
  - a. The coordinator for this new minor is Dr. James Swain – he is Associate Professor in Nutrition and has been Director of the Dietetics Program in the Department of Nutrition at Case Western Reserve University since 2003. Prior to joining the faculty at Case, Dr. Swain was a research scientist/post-doctoral fellow for the United States Department of Agriculture (USDA). He is a Registered Dietitian Nutritionist (RDN), licensed nationally and also by the State Medical Board of Ohio. Dr. Swain has also served a five-year term on the U.S. Food and Drug Administration’s (FDA) Food Advisory Committee.
  - b. Dr. Swain recently relinquished teaching on of his other courses which he has taught for many years – NTRN 365 – and thus, a new course (NTRN 340) represents one of his new “core, anchor” courses.
- 7) This Environmental Nutrition, Food Systems Sustainability, and Health Minor will meet the needs of undergraduate students interested in preparing for careers related to nutrition, food policy, sustainability, agriculture, wellness, public health – on local, national, and international levels. Graduates will also be better prepared for and more competitive in pursuing careers in community and government agencies, academia, and current and evolving industries involved in food production and consumer products.
- 8) This minor program will enhance the activities of both the College of Arts and Sciences, as well as the Nutrition Department, School of Medicine, because many students who consider coming to Case are interested in multiple majors and minors.

Resources and admission:

- 1) The Department of Nutrition and the Environmental Studies Program have sufficient resources, faculty, and staff in place to fully coordinate and conduct this new minor program. Further, all of the courses within this minor will be taught by faculty who are experts in these respective areas of focus.
- 2) To be admitted to the minor, students are asked to submit a Declaration of Minor form to the Department of Nutrition.

The mission of this new minor is to:

*Provide students with a foundation of knowledge in the study of the interplay between nutritional and food sciences, environmental issues, and food systems sustainability and health.*

## Curriculum Requirements:

This minor program requires completion of five courses, plus one 3 cr. hr. course elective (16 credit hours total).

### Requirements: Course Number – Title (cr. hrs.):\*

NTRN 340\*\* – Global Food Systems: Environmental Issues, Sustainability, and Health (3)

NTRN 342\*\*\* – Food Science (3)

NTRN 201 – Introduction to Nutrition (3)

NTRN 200 – Case Cooks *H* – Healthy Lifestyles (includes session on *Carbon-Neutral Nutrition*) (1)

ESTD 101 – Introduction to Environmental Thinking (3)

Plus, one elective from any of the following courses (3):

NTRN 328 – Child Nutrition, Development, and Health

NTRN 343 – Dietary Patterns

NTRN 341 – Food as Medicine

NTRN 337 – Nutrition Communication, Counseling, and Behavior Change

NTRN 300 – Healthy Lifestyles as Medicine

NTRN 351 – Food Service Systems Management

Required courses – offerings:

Fall course options = NTRN 200, 201, and 342, and elective

Spring course options = NTRN 340, ESTD 101 (and elective, if not prior)

*Depending on the student's overall schedule, this minor program may be completed in as little as two semesters or spread over two or more semesters.*

*\*No more than six credit-hours may double-count between this minor and another major or minor offered by the Department of Nutrition.*

*\*\*The new course application for this course has already been submitted. (There are no prerequisites for this course.)*

*\*\*\*The prerequisite for NTRN 342 will be changed from CHEM 106 to CHEM 105; including CHEM 111 or equivalent.*

### Course size limits:

Courses will be limited to 50 students per class.

### Attendance requirements:

Attendance is mandatory; students are expected to attend all classes regularly. Students will receive the final grade of F and asked to drop the course(s) if there are more than 3 unexcused (i.e. non-medical, emergency, etc.) absences per course. The instructor may also report excessive absences to the Office of Undergraduate Studies, along with notifying the student's dean in writing. (See more at: <http://bulletin.case.edu/undergraduatestudies/policies/>)

Letters of Support already obtained:

CAS Departments:

Peter L. McCall, PhD – Professor - Department of Earth, Environmental, and & Planetary Policy, Department of Biology, Director, Program in Environmental Studies.

Jim Van Orman, PhD – Chair, Department of Earth, Environmental, and Planetary Studies

School of Medicine (CWRU):

Pamela Davis, MD, PhD - Dean and Professor, School of Medicine

Hope Barkoukis, PhD, RD, LD, FAND – Chair, Department of Nutrition

**Program Development Proposal**  
*FINAL VERSION*

Department: Nutrition

Submission Date: Nov. 13, 2018

**I. Introduction**

Proposed title and degree designation:

Environmental Nutrition, Food Systems Sustainability, and Health – New Minor Program

Proposed effective semester and year:

Fall 2019

*(CAS/UG Studies Dean Dr. Jeffrey Wolcowitz noted that the final proposal is to be submitted to the FSCUE Curriculum Subcommittee, which will process it in the regular manner.)*

Rationale for degree designation:

Environmental change impacts humans worldwide, with an influence lasting many generations into the future. An in depth understanding of the interplay between food systems – global food production, distribution, and selection – and environment and sustainability issues, as related to human nutrition, health, and well-being has never been more important. This new minor draws upon the specific expertise of faculty in the Nutrition Department and Environmental Studies. By completing this minor program, students will be better prepared to initiate, participate, and lead efforts aimed at resolving issues related to the environment, human health, and food systems sustainability.

This new minor program is uniquely and strongly suited to provide students with the opportunity to receive instruction by experts in the fields of food science and nutrition, food systems sustainability, environmental studies, and health.

There are no other minor programs like this at CWRU. There are no other parallel minor programs available for undergraduate students within the regional Cleveland area.

Definition of the focus of the initiative:

This Environmental Nutrition, Food Systems Sustainability, and Health Minor will allow students to develop, examine, and apply knowledge in the related areas of food quality, feasible long-term global food systems, food science and chemistry, human nutrient requirements, and ethnic/cultural aspects of food production, selection, and preparation. A key concept will involve how environmental and sustainability issues directly affect

the nutritive qualities of foods, thereby directly effecting human nutrition, health, and well-being.

Brief description of the initiative's disciplinary purpose and significance:

Mission of this new minor program = *Provide students with a foundation of knowledge in the study of the interplay between nutritional and food sciences, environmental issues, and food systems sustainability and health.*

This Environmental Nutrition, Food Systems Sustainability, and Health Minor will meet the needs of undergraduate students interested in preparing for careers related to nutrition, food policy, sustainability, agriculture, wellness, public health – on local, national, and international levels. Graduates will also be better prepared for and more competitive in pursuing careers in community and government agencies, academia, and current and evolving industries involved in food production and consumer products.

## II. Proposed Curriculum

Description of proposed curriculum:

Student will take courses covering aspects of human nutrition, food science/food chemistry, and environmental issues effecting food systems, with hands-on related culinary experience putting their knowledge into action.

Outline of requirements and electives, including any anticipated courses\*:

This minor program requires completion of five courses, plus one 3 cr. hr. course elective (16 credit hours total).

Requirements: Course Number – Title (cr. hrs.)\*:

- NTRN 340\*\* – Global Food Systems: Environmental Issues, Sustainability, and Health (3)
- NTRN 342\*\*\* – Food Science (3)
- NTRN 201 – Introduction to Nutrition (3)
- NTRN 200 – Case Cooks *H* – Healthy Lifestyles (includes session on *Carbon-Neutral Nutrition*) (1)
- ESTD 101 – Introduction to Environmental Thinking (3)
- Plus, one elective from any of the following courses (3):
  - NTRN 328 – Child Nutrition, Development, and Health
  - NTRN 343 – Dietary Patterns
  - NTRN 341 – Food as Medicine
  - NTRN 337 – Nutrition Communication, Counseling, and Behavior Change
  - NTRN 300 – Healthy Lifestyles as Medicine
  - NTRN 351 – Food Service Systems Management

Required courses – offerings:

Fall course options = NTRN 200, 201, and 342, and elective

Spring course options = NTRN 340, ESTD 101 (and elective, if not prior)

Depending on the student's overall schedule, this minor program may be completed in as little as two semesters, but in the majority of cases we anticipate work on this minor to be spread over two or more semesters.

Enrollment is not expected to be an issue for any of the above courses – see sections III and V below.

*Please note:*

*\*No more than six credit-hours may double-count between this minor and another major or minor offered by the Department of Nutrition.*

*\*\*The new course application for this course has already been submitted. (There are no prerequisites for this course.)*

*\*\*\*The prerequisite for NTRN 342 will be changed from CHEM 106 to CHEM 105; including CHEM 111 or equivalent.*

### **III. Faculty and Department Information**

Faculty Sponsor: James H. Swain, PhD, RDN, LD, FAND, Associate Professor and Director, Dietetics Program

Faculty Coordinator:

James H. Swain, PhD, RDN, LD, FAND

Associate Professor and Director DPD

(Environmental Nutrition, Food Systems Sustainability, and Health Minor Coordinator)

Office Tel: (216) 368-8554

Email: [james.swain@case.edu](mailto:james.swain@case.edu)

Department: Nutrition

For a group proposal, list other faculty sponsors and their departments:

Not applicable

List any other CAS departments, CWRU schools, or administrative offices involved:

Letters of Support already obtained – see attached:

CAS Departments:

Peter L. McCall, PhD – Professor - Department of Earth, Environmental, and & Planetary Policy, Department of Biology, Director, Program in Environmental Studies.



Jim Van Orman, PhD – Chair, Department of Earth, Environmental, and Planetary Studies

Letters of Support – already obtained - continued  
School of Medicine (CWRU):

Pamela Davis, MD, PhD - Dean and Professor, School of Medicine  
Hope Barkoukis, PhD, RD, LD, FAND – Chair, Department of Nutrition

Describe the administrative arrangements for the initiative:

The Department of Nutrition and the Environmental Studies Program have sufficient resources, faculty, and staff in place to fully coordinate and conduct this new minor program. (Please see section V for specific information on anticipated enrollment estimates.) A review of course enrollments show that there will be space within each of the courses offered by the Department of Nutrition for this new minor. Based on a review of ESTD 101 enrollment from 2012 through Spring 2018, there was only one year wherein this course reached its maximum capacity. As mentioned in section V, since the anticipated number of students in this new minor program is not expected to represent more than 5-10 percent of the course's max enrollment, and also since students will be spreading their work on this new minor, in most cases, across two years, and since each faculty, including for ESTD 101, having access to CWRU's instructor permission to add – to allow for an increase above the max, if needed, rarely – we do not anticipate enrollment to be an issue.

Further, all of the courses within this minor will be taught by faculty who are experts in these respective areas of focus.

How is the proposed initiative important to the CAS and the involved CAS departments?

This minor program will enhance the activities of both the College of Arts and Sciences, as well as the Nutrition Department, School of Medicine, and the Department of Earth, Environmental, and Planetary Sciences because many students who consider coming to Case are interested in multiple majors and minors.

What is the relationship between the proposed initiative and the involved CAS departments' current programs?

There are no other current similar programs.

What is the relationship between the proposed initiative and the involved CWRU schools' (non-CAS) current programs (undergraduate and/or graduate)?

This new minor program is an opportunity for our undergraduate students to expand their scope of expertise within an interdisciplinary framework. This new minor program between

the Department of Nutrition and Environmental Studies – situated within the School of Medicine and the College of Arts and Sciences, respectively - will complement other nutrition majors and minors (i.e. the Nutrition BA and BS, the Nutritional Biochemistry and Metabolism BA and BS, as well as the basic minor in nutrition, and sports nutrition per se) in that it's establishment will serve to provide a breadth of minor topics, reflecting a global consideration of food systems on human nutrition and health.

#### **IV. Evidence of Need for the Proposed Curricular Initiative**

Describe similar programs in the region or state addressing this need and potential duplication of programs.

There are ten Ohio colleges that offer an undergraduate degree in related to nutrition, but none offer a minor. Of these ten, only Ohio University offers an undergraduate concentration in a similar area (i.e. "Environment Concentration), but no minor. Akron offers an undergraduate major in entitled, "Food and Environment"; however, their program does not include any courses on the environment. Upon review of its courses, it appears to be a major more so in food and business.

There are no other minor programs like this at CWRU. There are no other parallel minor programs available for undergraduate students within the regional Cleveland area.

What are the employment opportunities for graduates?

By completing this minor program, students will be better prepared to initiate, participate, and lead efforts aimed at resolving issues related to the environment, human health, and food systems sustainability. This new minor program will therefore meet the needs of undergraduate students interested in preparing for careers related to nutrition, food policy, sustainability, agriculture, wellness, public health – on local, national, and international levels. Graduates will also be better prepared for and more competitive in pursuing careers in community and government agencies, academia, and current and evolving industries involved in food production and consumer products.

What are the national and international competitive programs and their resources?

The resources of other such, similar programs – nationally or internationally – are not clearly identified to the public or those outside the universities. However, here are some examples, including the resources which could be found: University of California, Davis has three related tracks, not necessarily food and nutrition focused; University of Minnesota has a "food Systems" track, but resources are unclear; the University of Michigan has a related minor. There are similar, yet not fully the same, minor programs at the University of Illinois, the University of Oregon, and Tufts University (i.e. related to food systems and nutrition)

## **V. Projected Enrollment**

Define expected national and international enrollment targets over a five-year period:

Whereas it is beyond the scope of our role to forecast precise national and international related enrollment targets, during the past 8 years, there have only been 17 students who have done a minor within the Nutrition Department. Although we anticipate that this new minor program will be of interest to students, there is strong indication that this will not represent an undue burden on any particular course(s) because the student interest is very likely to be spread over a number of years. Thus, expressed numerically, over the next five years, we expect to reach a total enrollment target of 15. We look to add 2-3 new students each year. Further, in regards to course capacities and course enrollment histories, the students in this minor are not expected to represent more than 5-10% of any course's total enrollment in any semester. If within any semester a course maximum is reached, the faculty will have the option to permit the student to enroll in a course via the established instructor permission request via CWRU's SIS system.

Describe special efforts to enroll and retain underrepresented groups in the given discipline(s):

Our Department's enrollment is already based on efforts to attract and maintain a diverse student population. Students in the Department of Nutrition and Environmental studies are a diverse population. Both recruitment and advising activities are designed and developed to attract and inform a wide variety of prospective students, from a diversity of ethnic, cultural, racial, gender, and viewpoints. Our Departments' have a strong history of successfully enrolling and maintaining such diversity and our successful alumni come from a diversity of groups from all over the world. Our Departments' electronic and print materials are accessible to the public at large and our recruitment efforts include meeting with students and families from underrepresented groups. Our advising also considers the needs of all such groups.

## **VI. Resources Required**

Describe the availability and adequacy of the faculty, staff, facilities, and other resources for the initiative:

The Department of Nutrition and the Environmental Studies Program have sufficient resources, faculty, and staff in place to fully coordinate and conduct this new minor program. Further, all of the courses within this minor will be taught by faculty who are experts in these respective areas of focus.

Further, this new minor program is uniquely and strongly suited to provide students with the opportunity to receive instruction by experts in the fields of food science and nutrition, food systems sustainability, environmental studies, and health. The coordinator (Faculty Sponsor) for this new minor program is Dr. James Swain – he is Associate Professor in Nutrition and has been Director of the Dietetics Program in the Department

of Nutrition at Case Western Reserve University since 2003. Prior to joining the faculty at Case, Dr. Swain was a research scientist/post-doctoral fellow for the United States Department of Agriculture (USDA). He is a Registered Dietitian Nutritionist (RDN), licensed nationally and also by the State Medical Board of Ohio. Dr. Swain has also served a five-year term on the U.S. Food and Drug Administration's (FDA) Food Advisory Committee.

Describe the need for additional faculty, staff, facilities, or other resources and the plans to meet this need:

None. (No additional resources needed; also, see response to prior question).

## **VII. Expense and Revenue**

Project expenses to launch initiative and description of ongoing expenses and expected revenue:

None – no additional expenses; also, see response in prior section.

In regards to tuition return, the return would be based on enrollment and, although there is significant student interest and demand for this new minor program topic area, this currently may not be predicted fully. Our tuition revenue return would be included as usual – that, University-wide arrangement that 85% of tuition follows courses.

Provide evidence of institutional commitment and capacity to meet these expenses.

There are no revenue requirements from CAS, except for our usual tuition return – that, University-wide arrangement that 85% of tuition follows courses.

At the department level (Department of Nutrition), the faculty sponsor (Dr. James Swain) is already a full-time faculty and this new minor will be integrated into his position. He will also be teaching two of the courses within this minor program; perhaps, three depending on the specific elective selection by the student.

## **VIII. Other Expenses and Revenue Questions**

Is the initiative designed to be revenue generating? Define the expected revenue beyond the cost of expenses.

This new minor program is designed to position us to provide all students innovative and cutting-edge educational offerings. At this stage, it is not possible to fully predict revenue. Our usual tuition return revenue would be included as usual.

Describe the need and justification for tuition waivers or stipends:

Not applicable.

Describe expense or revenue sharing with other CWRU schools and/or administrative offices:

This new minor program will be operated under the current standard tuition return approach between the CAS and School of Medicine (SOM), which is that the University-wide arrangement that 85% of tuition follows courses.

Identify likely sources and assess the near- and long-term likelihood of raising funds to support the initiative in such categories as external and internal grants and philanthropy.

Not applicable.

## **IX. Library Resources**

Describe the initial assessment of adequacy of library resources:

This new minor program is comprised of courses within which the faculty instructor will guide students in regards to searching for and obtaining supporting information and documents. The vast majority of information will be obtained via online journals, information packets provided by faculty, and in some course via textbooks (i.e. obtained through the CWRU bookstore or e-access via publishers, as students select), and other electronic resources. Students will be provided with reference reading materials by the faculty instructors and be guided as to appropriate primary and secondary sources of literature for use in classes. An exploration of current resources indicates that current references in print and available electronically via basic and advanced search approaches are present and sufficient. Our faculty are experts in their respective fields and teach to their expertise. They will also be providing information packets for students in their courses.

Date at which program proposal was submitted to the library for its review:

9/18/2018 (completed 10/10/2018).

*(Note: Jessica Decaro and Shannon Butcheck completed the library review process for this new minor program application on Oct. 10, 2018 – see attached.)*

## **X. Relationship of Proposal to Strategic Plans**

How does the proposed curricular initiative relate to the priorities of the CAS strategic Plan?

This new curricular initiative fits into the CAS strategic plan in that the CAS plan includes development and sustaining new initiatives. It is also multidisciplinary, innovative, and creative – additional inclusions and hallmarks of the CAS strategic plan as well.

Graduates of this new minor program initiative will be empowered to create a positive impact at many different societal levels – both at the community, national, and global levels. These are also hallmarks of the CAS strategic plan.

For reference - specifically, on page 7 (Goal 4) of the CAS strategic plan document, there is mention of supporting innovative curricular partnerships across the university (i.e. in this case, our new minor program – involves the Department of Nutrition and the Department of Earth, Environmental, and & Planetary Sciences). Further, page 14 of the CAS strategic plan document states that the CAS (CWRU- University) is interested in developing interdisciplinary initiatives that are attractive locally, nationally, and internationally – to prospective students.

How does the proposed curricular initiative relate to the priorities of the CWRU strategic plan?

There are two key ways in which this new minor program does this:

- 1) Advancing interdisciplinary initiatives
- 2) Dedication to the core values of teaching, education, and [positive] impact. **This new minor** represents an innovative approach to education spanning two interdisciplinary priorities identified in CWRU'S Strategic Plan for 2013-2018: “Health and Sustainable Value.” Through this program, students will be challenged to become thought leaders in addressing the most pressing issues related to long-term sustainable food systems, especially productive and procurement, as well as human nutrition and health.