Proposal for a Minor in Physical Activity and Nutrition Science

Submitted by:

Department of Health & Human Physiology
Professor Kevin Kregel, DEO

17 March 2013

Draft by Prof. Kelly Cole

Introduction

The purpose of this document is to propose a new Minor in Physical Activity and Nutrition within the Department of Health and Human Physiology in the College of Liberal Arts & Sciences at The University of Iowa, and to request the elimination of the minor in Health Promotion. The minor in Physical Activity and Nutrition is designed in conjunction with the Obesity Research and Education Initiative to provide a specialized group of courses that unify the concepts underlying the causes, consequences, and treatment/prevention of obesity that spans physical activity, nutrition, physiology, psychology, and human disease. The learning outcomes will be understanding fundamental concepts of physiology, physical activity, and nutrition as they apply to obesity, understanding diseases and conditions that are sequelae to obesity, and understanding the basis for interventions to treat and prevent obesity. Students attaining the minor will be prepared to apply this information in areas such as clinical health professions, public health policy, personal coaching and fitness, health psychology, health promotion, and others.

The request to eliminate the minor in Health Promotion is motivated by the limited access to classes in health promotion for non-majors. The available upper-level classes are of limited size and they typically close each semester.

Background

Obesity is widespread in North America and in many developed countries, and comes with considerable financial cost to society, and to the health and longevity of obese individuals. It is associated with substantially increased risk of cardiovascular disease, many cancers, and diabetes, to name but a few diseases and conditions. The causes and treatment/prevention of obesity is complex, spanning the psychology of behavior, nutrition, and physical activity, with the latter two strongly linked to an ever-increasing knowledge of human physiology as it relates to the multi-system mechanisms regulating the balance of energy intake and energy expenditure.

The explosive increase in the incidence of obesity in every state of the nation over the past 30 years has been resistant to intervention and public health policy, despite the well-known consequences of long-standing obesity. As such, there is demand for scientists, health professionals, legislators, and leaders who have an understanding of the causes, consequences, and treatment/prevention of obesity. This understanding demands a multi-disciplinary approach to education, which the Department of Health & Human Physiology is well positioned to deliver.

The Department of Health & Human Physiology at UI has strong and long-standing research and educational programs in human physiology, health promotion/education, and the psychology of health behavior and behavioral change. A solid complement of courses exists in the department that addresses foundational and advanced concepts relevant to obesity. Moreover, the Department is strongly aligned with the research and educational missions of the Obesity Research and Education Initiative (OREI) at the UI (a cluster hiring initiative through the Provost's office), with several faculty members serving in administrative roles on the OREI, or as recent hires by this initiative. The proposed minor is in part motivated by the mission of the OREI to facilitate cutting-edge research related to obesity, and increase educational opportunities and outreach.

The introductory courses 027:039 (HHP:2200) Physical Activity and Health and 027:040 (HHP:2310) Nutrition and Health are required of all students majoring in any of three tracks in the Health and Human Physiology Bachelor of Arts degree. These courses provide a firm foundation in the relationship between physical activity and health/disease, and nutrition and

health/disease. A third required course in obesity 027:128 (HHP:3050) Obesity: Causes, Consequences, Prevention and Treatment builds upon knowledge of physical activity and nutrition and exposes the student to the more advanced issues surrounding the condition of human obesity. The elective courses allow the student to focus more on physiology, nutrition, disease, and the psychology of health and behavioral change. This minor would broaden students' knowledge and prepare them for virtually all clinical health professions, for programs in the College of Public Health and for graduate programs in physiology and psychology.

PROPOSED MINOR

This proposed minor will offer a group of courses that already exist and that are taught in the health and human physiology curriculum.

The minor consists of:

a) Three core courses.
b) Two intermediate-to-advanced courses that allow focused concentration of various facets of obesity and its treatment/prevention

THE PROPOSED CURRICULUM

PHYSICAL ACTIVITY AND NUTRITION MINOR

All students must complete three required classes and two 100-level electives (15 s.h.).

All of these:

027:039 (HHP:2200) Physical Activity and Health	3 s.h.
027:040 (HHP:2310) Nutrition and Health	3 s.h.
027:128 (HHP:3050) Obesity: Causes, Consequences, Prevention, and Treatment	3 s.h.

Two of these:

027:120 (HHP:3000) Equity Issues in the Health Sciences	3 s.h.
027:130 (HHP:3500) Human Physiology	3 s.h.
027:135 (HHP:4340) Global Health and Global Food	3 s.h.
027:140 (HHP:3400) Fundamentals of Exercise Physiology	3 s.h.
or	
027:141 (HHP:4410) Exercise Physiology	3 s.h.
027:174 (HHP:3650) Advanced Sport and Exercise Psychology	3 s.h.
027:175 (HHP:3655) Emotional and Psychological Aspects of Health	3 s.h.
027:131 (HHP:3030) Coaching for Health and Wellness	3 s.h.
027:133 (HHP:4310) Sport and Exercise Nutrition	3 s.h.
027:147 (HHP:3440) Physical Activity and Healthy Communities	3 s.h.

027:143 (HHP:4440) Physiology of Nutrition	3 s.h.
027:151 (HHP:4390) Understanding Human Disease	3 s.h.

Course descriptions, with prerequisites and semester hours

027:039 (HHP:2200) Physical Activity and Health 3 s.h.

Physical activity determinants in society; school, workplace, community-based health promotion interventions to improve activity levels. GE: Values, Society, and Diversity.

027:040 (HHP:2310) Nutrition and Health 3 s.h.

Physiology, biochemistry of human nutrition; appropriate food sources; qualitative and quantitative evaluation of diets using standard references. GE: Natural Sciences without Lab.

027:128 (HHP:3050) Obesity: Causes, Consequences, Prevention

In-depth overview of biological, behavioral, and societal causes and consequences of obesity epidemic; potential solutions from primary and secondary prevention standpoints; causes of obesity, available treatments, and global impact that obesity epidemic presents to society. (pre-requisites 027:039 (HHP:2280) and 027:040 (HHP:2310)

027:120 (HHP:3000) Equity Issues in the Health Sciences 3 s.h.

Examination of equity issues in the health sciences, including a review of the historical challenges that led to Human Subjects Review Boards, FDA oversight of drug development and clinical trials, inclusion of women in research; effect of situational ethics in the workplace; potential danger of making assumptions about clients/patients; importance of developing an inclusive communication style; assessing the effectiveness of family-friendly employment policies in providing equitable opportunities for career advancement for both women and men. Recommendations: junior or senior standing. Same as 145:120 (INTD:3020).

027:130 (HHP:3500) Human Physiology 3 s.h.

Organ system approach to physiology, with focus on normal function of the human body; information on all levels of integration, from submolecular to whole organism, with emphasis on how the intact organism functions.

027:135 (HHP:4340) Global Health and Global Food 3 s.h.

Practices, patterns, and policies that contribute to the epidemics of obesity, diabetes, and heart disease in wealthy populations; environmental degradation, hunger, and malnutrition among impoverished populations; strategies to meet food and agricultural needs for the world; local/global aspects or perspectives on food/health concerns for Iowa and the international community. Same as 152:135 (GHS:4340).

027:140 (HHP:3400) Fundamentals of Exercise Physiology 3 s.h.

Effects of acute and chronic exercise on different physiological systems (energy, respiratory, circulatory, endocrine); fitness evaluation, weight-control strategies, training programs; preparation for ACSM Fitness Instructor Certification. Offered fall semesters and summer sessions. Prerequisites: 027:050 (HHP:1300) or 027:130 (HHP:3500). Recommendations: at least one prior human physiology course.

027:141 (HHP:4410) Exercise Physiology 3 s.h.

Mechanisms responsible for the acute and chronic effects of exercise on the different organ systems of the body. Offered fall semesters. Prerequisites: 027:050 (HHP:1300) or 027:130 (HHP:3500).

027:174 (HHP:3650) Advanced Sport and Exercise Psychology 3 s.h.

Application of sport and exercise psychological theory; theoretical and practical experience using psychological skills training for sport and exercise. Prerequisites: 027:039 (HHP:2200) and 027:076 (HHP:2500).

027:175 (HHP:3655) Emotional and Psychological Aspects of Health 3 s.h.

Interfaces among emotional, psychological, and physical aspects of health; examination of how individuals with healthy psychological profiles engage in health behaviors; health-related implications of negative emotional and psychological states; strategies for promoting healthy psychological patterns; designed for health promotion, health studies students, and others interested in health-related careers. Prerequisites: 027:039 (HHP:2200).

027:131 (HHP:3030) Coaching for Health and Wellness 3 s.h.

Opportunities to expand knowledge and develop skills to help individuals change behavior and meet health-related goals; general health and wellness principles; principles and techniques for change; experience providing health-coaching services to clients. Prerequisites: 027:039 (HHP:2200) and 027:040 (HHP:2310). Same as 145:130 (INTD:3030).

027:133 (HHP:4310) Sport and Exercise Nutrition 3 s.h.

Relationship between nutrition, fitness and sport performance; basic nutrition, physiology, chemistry, psychology, food preparation. Prerequisites: 027:039 (HHP:2200) and 027:040 (HHP:2310).

027:147 (HHP:3440) Physical Activity and Healthy Communities 3 s.h.

Development, implementation, evaluation of effective health communication interventions; identification of health education resources for targeted groups. Prerequisites: 027:039 (HHP:2200) and 027:040 (HHP:2310).

027:143 (HHP:4440) Physiology of Nutrition 3 s.h.

Metabolic and biological aspects of human energy production, relationship to energy

consumption; systems or integrative approach.

027:151 (HHP:4390) Understanding Human Disease 3 s.h.

Introduction to process of human disease at cell, organ, and whole body level throughout the lifespan; pathophysiological changes occurring with disease, including risk factors, disease development, and overall effects of disease on the body; cancer, diabetes, obesity, cardiovascular, neurodegenerative diseases, and aging. Prerequisites: 027:050 (HHP:1300) or 027:130 (HHP:3500).

Please note the following:

- Students must maintain a g.p.a. of at least 2.00 in the minor. Courses for the minor may not be taken pass/nonpass.
- 3 s.h. of transfer credit will be accepted while at least 12 s.h. must be taken at The University of Iowa.
- All courses are taught every year, with two of the core courses and several of the intermediate/advanced courses taught both semesters and summer.
- The Physical Activity and Nutrition minor is designed for non-Health & Human Physiology majors (and non-Human Physiology majors), since students in these majors are required to take several of these courses, or have access to these courses as electives leading to the major degree.
- This program does not add new costs. No new faculty personnel are needed now or in the next 5 years.
- If approved, the minor would be implemented in Fall 2013.