A Proposal for a 2013 Summer HSSP JBS

Title: Food, Lifestyle and Health

Proposed by: Elaine Lai, Ph.D., Biology

Duration: 8 weeks, e.g., May 28 to July 19, 2013

Curriculum: First course: BISC 4B Food, Nutrition and Health (no prerequisite), taught by E. Lai (syllabus will be revised from a summer school course to a JBS course). This course has been offered every summer since 2008. Please see Proposal Rationale below for solutions in case an applicant has taken BISC 4B or BIOL 55B (Diet and Health, which is an advanced level nutrition course). E. Lai is scheduled to teach BIOL 55B in spring 2013. Applicants should be discouraged to enroll in BIOL 55B in the spring semester prior to this HSSP JBS.

Second course: BIOL xx or xxx Diabetes, taught by E. Lai
This is a new course waiting to be provided with a course number to be submitted for approval. It may have a prerequisite of BIOL 15B, or BIOL 22B, or permission of the instructor after the Curriculum Committee of the Biology Department considers my request. E. Lai has previewed Peter Conrad about cross-listing.

Third course: HSSP 120j: Health Care Landscapes (course will be revised to reflect the theme of this JBS food, nutrition and health) hopefully taught by Rebekah Zincavage. This course was offered only once, in 2010 JBS.

PROGRAM OVERVIEW:

The rapid growth in the prevalence of both obesity and type 2 diabetes, particularly among children, has emerged as one of the major health concerns of the twenty first century. Global prevalence of type 2 diabetes is rising steadily and rates of obesity continue to swell at an alarming pace. Nearly 26 million people, 8.3% of the population in the US, have diabetes. If current trends continue 1 out of every 3 adults will have diabetes by 2050. The increase in the prevalence of diabetes is closely correlated to the growing obesity epidemic; currently more than one third of U.S. adults are obese. This emergent public health epidemic has taken an alarming human and societal toll. Diabetes has not only grown at an unprecedented rate, it has lead to alarmingly high monetary costs – exceeding $200 billion in the US alone. About 95% of diagnosed diabetes cases are type 2 Diabetes. Yet this severe chronic illness often can be prevented by lifestyle intervention.

We will delve into the diabetes epidemic as an embodiment of various social, biological, behavioral, and environmental factors. Our journey into this multi-dimensional and
timely public health issue will span biological, social, historical, economic, nutritional, health and policy domains. What is the connection between food and health? In what ways is obesity closely linked to type 2 diabetes? What exactly is diabetes and what is its socioeconomic impact? How have we as a society responded to this growing public health issue? What are the policy implications and how do we understand them? What are some effective strategies for combating this growing health concern at the individual level?

Our exploration will entail inquiry into the science of nutrition, weekly hands-on food labs where students will participate in menu planning, food shopping, cooking as well as food sampling, and first hand insight into the ways in which our current health care system addresses citizens’ health care issues. Students will learn the physiology of how diet and exercise can curb the rising prevalence of diabetes and the role of prevention in the care of chronic health conditions and students will also visit health care facilities across the greater Boston area addressing this condition. Throughout students will gain knowledge and skills applicable to a wide array of present health and health care issues preparing them for a career in the contemporary health care sector.

PROPOSAL RATIONALE:

The proposed HSSP JBS semester is planned to be offered as an eight-week semester in summer 2013. Three courses will be taught in accordance with the interdisciplinary approach of HSSP providing students with a hands-on learning opportunity focused on the overarching theme of diet, diabetes and health care policy. Students will gain an understanding of a current public health issue – diabetes – by exploring the scientific, societal and policy perspectives of this epidemic.

The first course (BISC 4B) will focus on a scientific understanding of nutrients and nutrition. Nutrition is the science of food and its role in health and disease. Students will learn about the biology of the human body and how it works. Emphasis will be given to the digestive system. Students will study what happens to the food they eat. In other words, they will master the details of how macronutrients (proteins, carbohydrates and fats) and micronutrients (vitamins and minerals) are digested and absorbed in the human body. The importance of water will be discussed. This science-based way of learning will establish a firm foundation for students to understand how food can influence one’s wellbeing. A basic knowledge of nutrition will help one make intelligent food choices and therefore provide one way to developing and maintaining a state of health that is optimal for each individual. Good nutrition goes hand in hand with regular exercise; therefore the benefits of physical activities will also be discussed. I will focus on the responsibility of food choices on one’s own health, and on the prevention of diseases including diabetes.

Students who previously have taken BISC 4B or BIOL 55B would be asked to become TAs who are required to attend each class, run review sessions and outside class-
discussion groups to help the new students learn nutrition, and then write a term paper at
the end of the semester to reflect on their teaching-assistant experience and how they
have advanced their knowledge on the subject of nutrition, health and illness. They are
expected to provide ideas to the instructor as to how to make this course more interesting
and appealing to students’ desires as to what they want to get out from the topic of
nutrition that would be of help to them in their diet and health now and in their future.
These students would receive four credits for the efforts stated above.

The second course offered in this HSSP JBS will be a new course on DIABETES. In my
new course proposal, I include a new food lab which will be offered for the first time on
campus. The food lab will serve two purposes. First, it will provide an opportunity to
teach cooking techniques or enhance cooking skills of the students. The second is to
provide an interesting way to engage students to aspects of the science of food behind the
various food ingredients, as to which food group they belong and what nutrients they
contain, and what roles these nutrients play in our bodies; in other words, becoming
aware of what we eat. This food lab will also complement the BISC 4B nutrition course.
All of this is a hands-on way to connect diet and nutrition with food choices and
preparation. Student will gain knowledge and skills adaptable to a variety of
contemporary health care issues.

In my course proposal, I emphasize the need of this course for students to become aware
of and have an opportunity to study the worrisome rising prevalence of diabetes in our
country as well as globally. I believe a food lab would help to bring out the importance of
food and nutrition in the management of and prevention of type 2 diabetes.

The third course, HSSP 120j: Health Care Landscapes, is an experientially-based course
designed to provide an overview of and an insight in to the current health care
landscape(s) and how this system addresses citizens’ health care issues. In conjunction
with the first two courses described above, the health care issue of diabetes will serve as a
lens for our inquiry in to the health care landscape more broadly. Students will be
introduced to a range of theoretical perspectives used to understand and analyze the
organization of health care and consider how, from a macro perspective, we as a society
address (or not) this growing health care issue. Through direct in-person learning
activities we will reflect on the ways in which the provision, distribution, and
organization of health care are structured and the manifold interactions of varied system
components.

This course also enables students to consider and apply methodological approaches
relevant to the empirical study of health care such as organizational, evaluation and field
research methods. We will scrutinize how health care is mediated by socio-political
factors such as race, class, age, geography, and citizenship status on multiple levels as
well as the role of policy, health status and values in the organization of health care
delivery. To elucidate these connections and, at times, tensions, we will participate in
theoretically informed hands-on research exercises. Upon completion of the course,
students will have gained the ability to see how these experiences are both unique and
part of broader patterns. We will contemplate continuity, change, and complexity as we
consider how systems of health care delivery are situated within a context of local, national, and global inequalities and struggles for justice.

Other activities to be offered in this HSSP JBS may include one or more of the following: a field trip to tour the world-renown Joslin Diabetes Center in Boston, volunteering at a local soup kitchen by working cooperatively to menu plan health conscious meals, a lecture by our resident nutritionist or a diabetes researcher, workshops with relevant public health officials, a site visit to the Aramark Dining Service’s kitchen and field trips to health centers.

HSSP 120j entails weekly site visits to a variety of Boston area health care venues.

The overall format of this HSSP JBS will be divided up into the following sections:

1. Inquiry: Students will do literature research on cultural diets, diabetes rates in the chosen cultural groups, write papers and give PowerPoint presentations in the newly proposed DIABETES course. Students will be divided into several groups and teamwork is encouraged.
2. Self-assessment: students will measure and record their food intake at the beginning of the course and use a software program to help them target certain goals (such as weight loss), then make dietary change during the semester and assess their outcomes at the end of the semester.
3. Practical teamwork in planning and cooking a meal at the end of the course to illustrate the relationship between cultural diet and diabetes rates.
4. Observe a variety of Boston area health care settings, specifically those applicable to the delivery of care, prevention, advocacy, research, and training relevant to diabetes to consider the contributions and complexities of these diverse entities.
5. Foster ability to analyze health care delivery systems, resources, and settings from multiple perspectives—theoretically (e.g. competing notions of distributive justice, systems perspective, and assets framework), structurally (e.g. neighborhood, community, state and federal level), and methodologically (e.g. inductive and deductive based approaches).
6. Build foundational research skills to identify, assess, and conceptualize distinct community health care resources as well as competency in methods necessary for undertaking research within health care systems and health service organizations.
7. Develop the knowledge, and curiosity to cultivate an ability to engage critically with contemporary debates about the changing nature of the US health care landscape.
8. Exhibit professional behavior through team development process, interactions with community members as well as individuals from health care organizations to gain skills in preparation for HSSP Internship.