Joy Swanson

Web Bio

Information

Biography

Biographical Statement

Two disciplines, Food Science and Nutrition have captivated my interest and spurred my curiosity for most of my life. My educational journey brought me to the University of MN, BS Consumer Food Science; Oregon State University, MS Food Chemistry & Toxicology with minor in Biochemistry and Cornell University, Ph.D. Food Science with minors in Nutrition and Organic Chemistry and an NIH-Post-Doctoral Research Fellowship in the Dept of Biochemistry and Molecular and Cell Biology at Cornell University.

My research activities have contributed towards our understanding of the influence of dietary lipids on the plasticity of membrane, cellular and tissue lipid and fatty acid composition and the relationship between dietary lipids and membrane and tissue functionality and structure. This work has provided evidence for several dietary recommendations: reduction in saturated fats with replacement by unsaturated fats; awareness of the omega-6/omega-3 fatty acid ratio in the diet. My work in phospholipid bilayer model system provided a thermodynamic explanation of the possible formation of lipid rafts. My research activities continued as a Research Associate in the Division of Nutritional Sciences where my work has contributed to an expanding body of knowledge regarding how the human body absorbs, stores, metabolizes and finally eliminates fat soluble nutrients and factors which effect each stage; in particular, Vitamin A, E and beta-carotene. Importantly, this work has led to the discovery of a novel urinary excretion pathway for gamma-tocopherol (the first report of a fat soluble nutrient being eliminated via a water-soluble pathway in humans) and of a novel P450 hepatic enzyme responsible for the degradation of a fat soluble vitamin: Vitamin E, aptly named tocopherol omega hydroxylase. The pharmacokinetic data on the absorption efficiency and metabolic fate of beta-carotene has provided improved calculations for the conversion of beta-carotene, a pro-vitamin A nutrient, to Vitamin A equivalents.

Teaching activities within the Division of Nutritional Sciences have given me the pleasure to work alongside David Levitsky in NS 1150/1160, the opportunity to re-design several core DNS courses, NS 3320 and NS 3410/3420 and to develop the curriculum of new post-baccalaureate program courses. In NS 1150/1160 I improved the training and guidance given to the undergraduate teaching assistants (UGTA) who are critical members of the teaching team in NS 1150. In NS 3320, I re-structured the laboratory schedule and updated the laboratory manual to connect experiments with clinical relevance for our dietetic and nutrition majors. In NS 341-laboratory component, and NS 3420, I incorporated the training and guidance of UGTA used in NS 1150/1160 for the UGTA in the physiology & anatomy laboratory as well as updating clinical relevance of laboratory exercises. Within the post-baccalaureate program I have helped create as well as co-teach three new courses: NS 5100, NS 5200 and NS 5410/5411.

The expertise garnered in teaching and research within DNS has led to my transition as the Director of the Division's Post-Baccalaureate Certificate Program in Health Studies. As the Director of the post-baccalaureate program, enrollment has been exponential: year one, four students to twenty students in year four. Program curriculum has expanded in this same time frame; adding a hands-on Orthopaedic module, taught by a practicing Orthopaedic surgeon and matching post-baccalaureate students with local area physicians as Clinical Shadowing Externships. Within the post-baccalaureate program, I have created a pre-health advising unit which supports the post-baccalaureate students and alumni in the application process for professional school and for career employment.

Department Website Summary

Two disciplines, Food Science and Nutrition have captivated my interest and spurred my curiosity for most of my life. Currently my focus has been on Directing the Post-Bacc Program within DNS and developing a health focused curriculum and advising unit to support program students and graduates.

Teaching

Teaching and Advising Statement

It has been a real privilege to work alongside Cornell students who become UGTA, as they have helped me to develop a sensitive awareness to the needs of students and to the variety of ways students learn most effectively; they have such creative ideas for learning and are a bundle of energy. I enjoy teaching Cornell undergraduate to learn how to teach and it has been rewarding to watch how their teaching strengthens their own learning not just in the subject in which they are a teaching assistant in, but in all subjects; they become life-long learners.

To help students become life-long learners has also been my motivator as a lecturer. Cornell students are smart, quick thinkers and it has been a privilege to teach them nutrition, physiology & anatomy, professionalism and the connections between health and the humanities. Engaging students through media, case studies, role play, trips to the Johnson museum or the Plantations or hands-on dissections has been important in my teaching growth as this has given me a sense of the tactile importance in learning. Incorporating time for reflection in my classes, gives me an opportunity to gage how and how much the students have understood. As a teacher, it is my goal to help students find their learning style and that has guided the various pedagogy that I use in my classroom.

Professional

Current Professional Activities

Professional Memberships:

National Association of Advisors for the Health Professions - Northeast representative on the national membership committee.

Northeast Association of Advisors for the Health Professions - As co-chair of the Upstate New York Local Area Network of Health Professions Advisors. As co-chair assisted in the organization of a regional meeting of Advisors at SUNY Upstate Medical Ctr. in January 2014. The meeting focused on updates of current changes in the medical health professional application process, observation of how Albany Medical School conducts their interviews and of their clinical competency center.

American Chemical Society & Cornell Section of ACS - Chair the Cornell Section Outreach committee and member of the Executive Board.

Ithaca Campus:

HCAN - Health Careers Advisors Network: As Director of postbaccalaureate program provide program updates on curriculum, admission policies and advising, promote awareness of the program and program's missionto other campus health advisors.

Faculty Advisor - Expanding Your Horizons in Math, Science and Engineering Program: Provide leadership in program organization, fund raising and conference logistics.

Research

Extension

Current Extension Activities

Faculty advisor of the STEM program: Expanding Your Horizons in Math, Science & Engineering, provide leadership in the organization and implementation of the annual conference for this program. Over 300 girls with guardian attend each year to spend one day at Cornell learning about careers in math, science and engineering. In 2014 we expanded this program by 200 participants and expanded our recruiting to include more rural and under-resourced school districts.

Education

Education

1979, University of Minnesota, BSc. Food Science,
1982, Oregon State University, MSc. Food Science with minor in Biochemistry
1988, Cornell University, Ph.D. Food Sciene with minors in Nutrition & Chemistry

1988- 2001 NIH Post-Doctoral Trainee in Biochemistry & Molecular Biology

Courses

Courses Taught

NS 1160 Recitation Section for NS 1150 Nutrtion, Health and Society
NS 3420 Laboratory course in Human Physiology and Anatomy
NS 4030 Undergraduate Teaching Apprenticeship
NS 5100 Preparation for Professional Studies
NS 5200 Health & Humanities
NS 5410 Integrated Health Studies I
NS 5411 Integrated Health Studies II

NS 6000 Special Problems for Graduate Students

Websites

Related Websites

Post-Baccalaureate Program's webpage:

www.sce.cornell.edu/healthstudies

Linkages to this website are also found on DNS webpage.

Expanding Your Horizons in Math, Science & Engineering Program:

www.eyh.cornell.edu

Administration

Administrative Responsibilities

Director of the post-baccalaureate program administrative responsibilities include:

Curriculum development and updates,

Record maintenance of human cadaver specimen procurement and disposal, maintain compliance with licensure for procurement and storage of human cadaver specimens,

Budget allocation,

Program marketing - recruitment fairs, professional meetings, seminar presentations,

Conduct program evaluation and curriculum updates, data collection and statistical analysis of program graduate acceptances in health professional schools,

Preparation of program letter of recommendations for program graduates,

Development/updating of program website content,

Supervise program staff; provide curriculum advise and content topics to clinical co-directors.

Publications