

COMMITTEE ON FACULTY RESEARCH LECTURE
Annual Report 2014-2015

To: Academic Senate, Santa Cruz Division

The Committee on the Faculty Research Lecture enthusiastically nominates Susan Strome, Distinguished Professor of Molecular, Cell, and Developmental Biology (MCD Biology), as the Faculty Research Lecturer for the 2015-2016 academic year.

Professor Strome studies germ cells, which are the progenitors of sperm and eggs and of future generations of organisms. Germ cells have unique properties. Firstly, they are responsible for the transmission of genetic information to future generations. Secondly, they are capable of self-renewal generation after generation and thus are essentially immortal. Thirdly, after a sperm and egg unite to form an embryo, they are capable of generating all of the diverse cell types of the body. These last two properties make germ cells the most basic type of stem cell. A fundamental challenge in developmental biology has been the identification of mechanisms and genes that instruct a cell in the developing embryo to become a germ cell, as opposed to becoming a cell that contributes to the body (soma) of the organism. Throughout her long and productive career, Professor Strome has studied how germ cells arise in the embryo and how they maintain their ability to self-renew. Using nematodes as a model organism, she has identified genes that determine whether a cell becomes a germ cell or a body (somatic) cell. She also has identified genes that enable germ cells to renew themselves. In addition to making important contributions to the field of Developmental Biology, Professor Strome also has enhanced our understanding of Epigenetics. Epigenetic changes are caused by modification of gene packaging and expression rather than changes in the DNA sequence of genes themselves. Epigenetic marks on DNA include molecular tags that occur on DNA-binding proteins called histones. These tags affect whether particular genes are expressed or instead stay silent. In a set of elegant studies, Professor Strome showed how the daughter cells in nematode embryos “remember” the histone tags of their parents. Ultimately these findings may provide clues to how epigenetic information is transmitted from parent to child in humans.

Professor Strome has been very influential in the fields of Developmental and Cell Biology and Epigenetics. She has published 75 peer-reviewed research articles and 16 invited review articles. She has delivered over 120 invited seminars in the United States, Canada, Europe, and Japan. She has been an invited speaker at 60 conferences, including 16 conferences in the United States and abroad. She has co-organized 6 conferences, including 3 international meetings. She has held professional office in the American Society for Cell Biology and in the Society for Developmental Biology. She has served on the editorial and advisory boards of scientific journals and other publications. She has served on several grant review panels. In 2010 she was elected to the American Academy of Arts and Sciences.

Throughout her career Professor Strome also has been recognized as an excellent teacher. While a faculty member at the University of Indiana, she was honored with 3 teaching awards, and in 2013 she was bestowed an Excellence in Teaching Award here at UCSC. In addition to teaching undergraduates in a classroom setting, Professor Strome has mentored graduate students, undergraduates, and postdoctoral fellows in her research laboratory. In her capacity as Director of

the NIH Training Grant in MCD Biology, she has been proactive in introducing innovations to the department's graduate program.

Since her arrival at UCSC in 2007, Professor Strome has served her department and the University with creativity, energy, and zest. From 2007 to 2012 she served as Associate Director of the UCSC Institute for the Biology of Stem Cells. She is Chair of the MCD Biology Graduate Advisory Committee and, in 2013, was chair of the Committee on Admissions and Financial Aid (CAFA) Subcommittee to Develop a UCSC Honors Program. She has been a frequent guest speaker in various STEM programs and campus student organizations. She has recruited graduate students at the Society for the Advancement of Hispanics/Chicanos and Native Americans in Science (SACNAS) and Annual Biomedical Research Conference for Minority Students (ABRCMS) Conferences. She is on the Advisory Committee for the MCD Biology, Chemistry, Biomolecular Engineering, and Microbiology and Environmental Toxicology Postdoc Association, and for the Science and Justice Research Center.

In conclusion, Professor Strome is a remarkably productive and renowned researcher and teacher. She is highly deserving of the honor of presenting her innovative research to the University and the larger community as the 50th annual Faculty Lecturer.

Respectfully submitted;
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