Aging Exchange

News about the study of aging at Purdue University

Spring 2001

Symposium Examines the Biology of Aging

About 100 people gathered at Purdue University on Saturday, April 14, to probe the *Mechanisms and Consequences of Aging*. The symposium provided a broad perspective on contemporary issues in biogerontology. It featured 5 speakers and 18 posters presenting research findings on basic mechanisms of the aging process.

One of the highlights was a presentation by Leonard Hayflick, Ph.D., Professor of Medicine at the University of California at San Francisco, and one of the most influential scholars in the biology of aging. Hayflick is widely credited with first showing that "aging" is not the cause of cell death, but that the number of passages cells undergo is the key (*Experimental Cell Research,* 1961). With experiments on normal diploid human cells, he observed that regardless of the age of the donor, such cells could only proliferate in culture for a finite number of times—they have a limited *capacity* to divide and function. He discovered a limit on the number of cell doublings in vitro implying that there is a "clock" within cells governing longevity.

It should not be surprising, therefore, that Hayflick denounced recent claims that humans are capable of living well past 100 years. According to Hayflick, "superlongevity is simply not possible." He asserted that even if the most common causes of death—cancer, heart disease, and stroke—were eliminated, life expectancy would probably not increase more than 15 years.

The real cause of death, Hayflick argued, is a decline on a molecular level that makes people "increasingly vulnerable to disease."

Other speakers discussed other mechanisms, but basically agreed with Hayflick. Arlan Richardson, Ph.D., Professor and Director of the Aging, Research, and Education Center at the University of Texas San Antonio Health Sciences Center, focused on the molecular and cellular biology of aging and offered the same conclusion: "I think people are going to realize that just curing one disease after another isn't getting at the fundamental problem."

The search for the molecular decline and disorganization that accompanies aging is being carried out on a wide variety of animal species. David Waters, D.V.M., Ph.D., Associate Professor, Veterinary Clinical Sciences and Associate Director of the Gerontology at Purdue University, highlighted some of the work in his laboratory that examines these processes with pet dogs. While research is being conducted on species ranging from the small soil nematode *Caenorhabditis elegans* to humans, Waters argues that pet dogs represent a splendid model of mammalian aging, especially because they share living environments with their owners.

Gerontology Symposium Organizing Committee, Program Director and Speakers: Top row (l to r), Dorothy Morré, Harry Morrison, David Waters, Kenneth Ferraro; bottom row, Arlan Richardson, Robert Floyd, Leonard Hayflick, Frank Bellino

Two other speakers addressed those gathered. Robert Floyd, Ph.D., Head of the Free Radical Biology and Aging Research Program at the Oklahoma Medical Research Foundation, discussed the chemistry of aging. Floyd specifically discussed the neurotoxic action of nitric oxide in Alzheimer's disease and the mechanistic basis of reactive oxygen in carcinogenesis.

Frank Bellino, Ph.D., Deputy Director, Biology of Aging Program, National Institute on Aging, described opportunities and challenges facing the gerontology research community as well as specific funding mechanisms to pursue research at NIA. Although regular research awards (R01s) are the core of NIA funding, he encouraged investigators to consider other mechanisms ranging from pre-doctoral fellowships (T32, F31) to career development (K01, K02) and career leadership awards (K07).

The program committee for the symposium consisted of Waters, Dorothy Morré, Professor of Foods and Nutrition, and Harry Morrison, Dean of the School of Science and Professor of Chemistry. The symposium was designed primarily to stimulate interest in biogerontology among Purdue University faculty, but also drew participants from universities in surrounding states.

Promotions and Tenure

Promotions of five gerontology faculty associates were approved by the Board of Trustees on April 6. Faculty associates promoted to Professor are:

- **Shelley M. MacDermid**, Child Development and Family Studies
- **David J. Waters**, Veterinary Clinical Sciences

Faculty associates promoted to Associate Professor are:

- **Kevin M. Hannon**, Basic Medical Sciences
- **Kevin M. Sowinski**, Pharmacy Practice
- **Janet M. Wilmoth**, Sociology and Anthropology

James D. McGlothlin, Associate Professor in Health Sciences, was granted tenure without promotion.

Congratulations!

Awards

Three gerontology faculty associates were honored for their excellence in teaching at the Purdue University Honors Convocation on April 8. They are:

- **Nicholas G. Popovich**, Pharmacy Practice, Professor Henry W. Heine Award for Excellence in Teaching;
- **Janet M. Wilmoth**, Sociology and Anthropology, School of Liberal Arts Educational Excellence Award; and
- **Ruth N. Wukasch**, Nursing, Excellence in Teaching Award in the School of Nursing

Dawn Cooley, Veterinary Clinical Sciences graduate student, received an award for the Best Resident Abstract in Clinical Sciences at the Veterinary Cancer Society Meeting. Her presentation was "Influence of Gender and Gonadal Exposure on Risk for Appendicular Bone Sarcoma in Rottweilers."

Sharon DeVaney, Consumer Sciences and Retailing, was named the Mary Ellen Edmondson Educator of the Year by the Association of Financial Counseling and Planning Education.

Transitions

Peg Krach, Associate Professor of Nursing, is retiring. Congratulations, Peg, on a job well done. Long life and happiness!

Amy Neel, Assistant Professor of Audiology and Speech Sciences, is leaving Purdue to become Assistant Professor, Speech and Hearing Sciences at the University of New Mexico.

Joseph O'Leary, Professor of Forest Recreation, will be Professor and Head of the Department of Recreation, Park and Tourism Sciences at Texas A&M University on July 1.

Heeseung Roh Ryu, a Health, Kinesiology, and Leisure Studies Ph.D. graduate in 1999, is the proud mother of a baby girl, Emily, born in July, 2000.

Recent Grants

Wayne Campbell, Foods and Nutrition, S.F. Badylak, and **George McCabe**, Statistics, from National Institutes of Health, March 1, 2001 through February 28, 2002, "Dietary Protein Requirements of Elderly Men and Women."

Wayne Campbell, Foods and Nutrition, from National Institutes of Health, March 1, 2001 through June 30, 2001, "Weight Loss and Resistance Training in Older Women."

D.L. Andrews and **John Christian**, Veterinary Pathobiology, from Abbott Laboratories, June 4, 2000 through May 3, 2001, "Cell-Dyn 1200 Veterinary System's Canine and Feline Hematology Analysis."

Nancy Edwards, Ruth Wukasch, Nursing, and K.S. Yehle, from Helene Fuld Health Trust, September 15, 2000 through September 15, 2002, "Clinical Leadership Role-Modeling: Nursing Students and Faculty."

Kenneth Ferraro, Sociology and Anthropology, **Sharon DeVaney**, Consumer Sciences and Retailing, **Gerald Hyner**, Health, Kinesiology and Leisure Studies, **Paula Usita**, Child Development and Family Studies, and **Janet Wilmoth**, Sociology and Anthropology, from National Institute on Aging, March 1, 2001 through February 28, 2002, "Interdisciplinary Research on Life Course Inequality."

James Fleet, Foods and Nutrition, from National Institutes of Health, September 30, 2000 through August 31, 2001, "Calcium Absorption in Caco-2 Cells: Molecular Mechanism."

James Fleet, Foods and Nutrition, from VA Boston Health Care System, September 1, 2000 through August 31, 2001, "Genetics and Bone Density in Men."

James Fleet, Foods and Nutrition, from Boston Health Care System, October 1, 2000 through September 30, 2001, "Genetic Markers for Bone Mineral Density in Men."

James McGlothlin, Health Sciences, from Science Applications International Corp., June 21, 2000 through October 31, 2000, "A Pilot Study of a Cost Effective Office Ergonomics Program Using Ergotract Internet Software for the NASA Glenn Research Center."

R. Gazo, **James McGlothlin**, Health Sciences, and Y. Yih, from Forest Service, U.S., August 23, 2000 through October 31, 2001, "Ergonomic Solutions for the Wood Industry."

Michael Murray, Pharmacy Practice, from Brigham and Women's Hospital, September 29, 2000 through August 31, 2001, "Improving Safety by Computerizing Outpatient Prescribing."

Michael Murray and **Kevin Sowinski**, Pharmacy Practice, from Public Health Service, September 30,

2000 through August 31, 2001, "Improving Drug Use for Elderly Heart Failure Patients."

Amy Neel, Audiology and Speech Sciences, from American Speech-Language-Hearing Foundation, January 1, 2001 through December 31, 2001, "Use of Format Movement Detail in Vowel Identification."

Darlene Sedlock, Health Kinesiology and Leisure Studies, from Quaker Oats Company, October 11, 2000 through October 10, 2001, "Carbohydrate Loading and Supplementation in Women."

A. Smith, **George McCabe**, Statistics, C.M. Weber-Fox, and **Howard Zelaznik**, Health, Kinesiology and Leisure Studies, from National Institutes of Health, December 1, 2000 through November 30, 2001, "Physiological Correlates of Stuttering."

B.A. Watkins, P.R. Brown, J.R. Burgess, N.C. Carpita, S.S. Donkin, B.R. Hamaker, K.T. McNamara, S.E. Mills, J.E. Simon, R.K. Singh, J.J. Turek, and **David Waters**, Veterinary Clinical Sciences, from 21st Century Research and Technology Fund, August 4, 2000 through August 4, 2002, "A Center of Excellence: Enhancing Foods to Protect Health."

Connie Weaver, Foods and Nutrition, D. Elmore, R.D. Mattes, **George McCabe**, Statistics, D.J. Morré, **Dorothy Morré**, Foods and Nutrition, C.R. Santerre, and J.E. Simon, from Public Health Service, September 30, 2000 through July 31, 2001, "Botanicals for Age Related Disease."

Lisa Xu, Mechanical Engineering, from Indiana University, May 1, 2000 through April 30, 2001, "Quantification of the Rf Field in Thermoacoustic Computed Tomography of Breast Cancer."

THE PURDUE ADULT HEALTH & DEVELOPMENT PROGRAM (PAHDP)

HPER 490 S

Fall 2001, 2 credits

(2 credits)

Roseann M. Lyle, PhD (494-3158), Roger Seehafer, PhD (494-3159)

Text: D. Leviton, J. Kennedy, R. Woodruff & Kathy Like. *The AHDP Manual for Staffers*

The purposes of the course are to:

A. Train the student (staffer) to apply gerontological health and well-being theory and data by working with an older institutionalized or non-institutionalized adult (member) to positively affect the member's health and well-being.
B. Allow students to learn about aging, history and different cultures in a particular environment.
C. Serve as a catalyst bringing together older institutionalized and non-institutionalized adults, staffers, university community, and private and public sectors of the community to work towards common purposes (A and B above).
D. Contribute to social harmony and well-being by bringing people together of diverse backgrounds, ethnic/racial roots, health and well-being and socio-economic status, to enjoy one another while reducing the probability of violence.
E. Positively affect the health, sense of well-being, physical fitness, and health knowledge of the older adult "member" enabling him to gain greater control over his health and well-being.

The format of the AHDP

General:

Staffers will participate in a modified version of the University of Maryland program which will be called the Purdue AHDP. Staffers will learn about the AHDP philosophy, theory and methods and will work on an individual basis with an older adult for 8 consecutive weeks **(not including the week of Thanksgiving).**

Specific:

During the first half of the semester, staffers will meet two hours a week in class to discuss readings and be trained to work with their member (including paper work). Staffers will work at least one hour outside of class on project development, assigned reading, and other miscellaneous organizational details when warranted.

During the second half of the semester, staffers continue to meet one hour a week for debriefing with Group Leaders and to turn in IHF. Staffers will also meet one hour a week in a one-on-one situation with their member either at the Ismail Center, at a scheduled project activity, or in another activity of the member's choosing.

Graduate Courses in Gerontology at Purdue, Fall, 2001

Primary Content

CDFS	565	Multidisciplinary Perspectives on Aging (2-3 cr.), Prof. Wilmoth (also listed as HPER 590M, SOC 591A)	TTh 3:00-4:15
PSY	660	Cognitive Functioning in Older Adults (3 cr.), Prof. Cicirelli	Arrange

Related but not primary content

AUS	540	Augment. & Alter. Com. (3 cr.), Prof. Lloyd (also listed as EDPS 562)	TTh 4:30-5:45
BIOL	503	Introduction to Neurobiology (3 cr), Prof. Rane	MWF 12:30
BIOL	559	Endocrinology (3 cr.), Prof. Anderson	TTh 1:30-2:45
CDFS	605	Seminar in Family and the Life Course (3 cr.), Prof. Usita	W 3:30-6:20
CSR	631	Consumer Behavior Theories (3 cr.), Prof. Christiansen (also listed as PSY 585)	MWF 1:30
HPER	490S	Adult Health and Development Program (2 cr.), Profs. Lyle & Seehafer	TTh 8:30-9:20
SOC	681	Selected Prob. of Social Res.: Longitudinal Data Anal. (3 cr.), Prof. Ferraro	TTh 12:00-1:15

The *Aging Exchange* is developed by Ken Ferraro and Marilyn McCammack of the Gerontology Program. We welcome your suggestions for enhancing the *Aging Exchange* to better serve you. Please submit news items to Marilyn McCammack, Gerontology Program , Stone Hall [E-mail: gero@cfs.purdue.edu]. Visit Purdue's gerontology home page [http://omni.cc.purdue.edu/~geron/] **Volume 10, issue 2**

A thankful heart is not only the greatest virtue, but the parent of all the other virtues.
Cicero