

The Postdoctoral and Graduate Student Program

Anna Marie Skalka, Ph.D., *Senior Member, Program Director*

Maureen E. Murphy, Ph.D., *Member, Program Co-Director*

Randy Strich,*a Ph.D., *Member, Program Co-Director*

Margaret H. Eienkel, *Administrative Coordinator*

The Postdoctoral and Graduate Student Office supports the program of training young investigators in the basic sciences at Fox Chase Cancer Center. Its functions include:

- recruiting applicants for graduate and postdoctoral research training,
- evaluating candidates for institutional support,
- guiding and assisting approved candidates in the preparation of applications for fellowships,
- directing the operation of the NIH training grants, and
- coordinating and implementing the training plan for graduate students and postdoctoral fellows.

The Postdoctoral Research Program

This program promotes postdoctoral research training in laboratories engaged in basic research at Fox Chase. Applicants are recruited by distribution of program information on our homepage (<http://www.fccc.edu/postdoc>), by advertisement in scientific journals, by distribution of brochures, by listings with placement services of professional societies or universities, and through staff contacts, as at scientific meetings. Those interested in applying are encouraged to make direct contact with members of our training faculty.

Candidates who have identified an interested sponsor and who have furnished a resumé, abstract of their doctoral thesis, three letters of recommendation, academic transcripts, and a list of publications, are invited to Fox Chase for an interview. The applicant presents an informal seminar and is interviewed by the potential sponsor, members of the review committee, and other members of our staff including post-doctoral fellows.

Support for eligible candidates may come from a variety of sources, which include funds from the sponsors' research grants, training grants from the NCI, and the NIAID, as well as externally funded fellowships. In addition, Fox Chase offers Center-endowed fellowships that are made possible by private donors as well as by funds raised by the Board of Associates.

During the past year, 120 postdoctorals have participated in research at the Center. Of these, 90 were supported by investigators' research grants, 18 were supported by training grants, 7 held externally-funded fellowships, and 5 were recipients of Center-endowed fellowships.

Members of the postdoctoral review committee are drawn from all Center divisions. The committee membership consisted of A. Bellacosa, A. Di Cristofano, R. Dunbrack, M. Murphy, *Chair (present)*, J. Peterson, D. Wiest, and R. Strich, *Chair (previous)*.

In 2004, *The Scientist* magazine conducted a national survey by posting a Web-based questionnaire and invited its readership to respond to their "Best Places to Work for Postdocs Survey." Fox Chase Cancer Center is justly proud to have been voted No.1 of the 15 top U.S. institutions listed in their survey.

Students

During the past year, 33 graduate students at the Center carried out thesis research under the supervision of staff members who hold adjunct faculty appointments at Thomas Jefferson University, Lehigh University, University of Pennsylvania, and Temple University, and members who participate in the Fox Chase-Russian State Medical University Sister Institute Program. Generally, these students have completed the major course work requirements for the doctoral degree and are engaged in full-time research. Center laboratories also provide opportunities for science training for undergraduate students. In 2003, Fox Chase initiated a graduate school alliance with Drexel University College of Medicine, and in 2004, the first graduate students from the Programs in Biochemistry, and in Molecular and Cellular Biology, performed laboratory rotations with members of our faculty that hold joint appointments in the Department

of Biochemistry at Drexel University College of Medicine. In addition to these graduate students, another 28 undergraduate summer assistants were supported from other funds.

Training

The Postdoctoral Seminar Presentation Series, organized by David Wiest, Ph.D., provides the postdoctoral community an opportunity to interact scientifically with other fellows and hone their presentation skills. These presentations provide an excellent venue for the exchange of ideas and experimental techniques among the postdoctoral community. Wiest chairs these sessions and schedules postdoctoral fellows to present their research to their peer audience, which provides critical feedback on content and style.

Our first Trainee-organized Symposium, organized and implemented by the postdoctoral fellows supported by our Training Grant in Cancer Research, was held on April 26, 2005. The topic for this symposium was Protein Conformational Diseases. The Keynote Lecture entitled, "Prion protein conversions and TSE diseases," was presented by Byron Caughey, Ph.D., of NIAID, NIH, Rocky Mountain Laboratories. This was followed by Patrick Loll, Ph.D., of Drexel University, who presented "Ataxin-3: A polyglutamine disease protein;" Diane Merry, Ph.D., of Thomas Jefferson University, who presented, "The molecular pathogenesis of polyglutamine disease;" Benoit Giasson, Ph.D., of the University of Pennsylvania, who presented "Properties of tau- and alpha-synuclein in neurodegenerative disease;" and Heinrich Roder, Ph.D., of Fox Chase Cancer Center, who presented, "Biophysical studies of prion protein folding and fibril formation."

Our Tenth Annual Postdoctoral and Graduate Student Research Conference, held on Friday, June 3, 2005, was hosted by Dominique Broccoli, Ph.D., Kerry Campbell, Ph.D., and Edna Cukierman, Ph.D. Fox Chase postdocs presented their work either as oral presentations or poster sessions. This event was open to all postdoctoral fellows in the Philadelphia region. The keynote presentation entitled, "Role of DNA Damage Detection and Repair in Maintaining Genomic Stability," was given by André Nussenzweig, Ph.D., Senior Investigator in the Experimental Immunology Branch at the National Cancer Institute. Careers in Science presentations were given by Janet E. Reed, Ph.D., J.D., Patent Lawyer, Woodcock Washburn, L.L.P.; Richard Pelroy, Ph.D., Program Director, National Cancer Institute; and David T. Molowa, Ph.D., Managing Director, UBS Securities L.L.C.

A Colloquium on Immunology, organized by David Wiest, Ph.D., is offered to trainees and consists of weekly journal club meetings of postdoctoral fellows, research associates and faculty interested in current topics in immunology. Participants take turns in presenting and critiquing papers of interest from leading journals. Papers are circulated a week prior to each meeting to allow participants time to preview the contents.

The Virology Research Meetings, organized by Glenn Rall, Ph.D., are held weekly throughout the year to provide a semi-formal opportunity for each of the participants to present their ongoing research and obtain constructive feedback. The regular participants include faculty members, postdoctoral fellows and graduate students from the laboratories in the Virology Working Group, as well as other interested participants.

A Colloquium on Cancer Prevention and Control is run by Paul Engstrom, M.D. In this series, post-doctoral trainees participate in the weekly Population Science Seminar. Program scientists present research plans and results for discussion and critique by the seminar attendees. In addition, postdoctoral trainees participate in specialized Working Groups in epidemiology, human genetics, biostatistics, chemoprevention research, and family risk support.

A Colloquium on Molecular, Cellular and Developmental Biology is organized and run by Robert Perry, Ph.D. In this journal club series, speakers are drawn from both faculty and trainees, representing most of the laboratory-based science programs at the Institute. The content and significance of a group of related scientific articles, on a topic selected by the presenter, are discussed and critically analyzed.

A Colloquium on Structural Biology is organized by Eileen Jaffe, Ph.D. Participants critically review the literature on structural biology, including cellular ultrastructure, protein structure and dynamics, enzyme active sites and enzyme mechanisms, nucleic acid structures, and protein folding dynamics.

In-house, Scientific Research Seminars are organized by Anna Marie Skalka, Ph.D. This weekly seminar series consists of one member of a Fox Chase research team (typically the Principal Investigator) presenting an update on ongoing studies and/or plans for future research directions in his or her laboratory

program. On average, each laboratory has an opportunity to make one presentation each year. This series allows Fox Chase investigators to keep abreast of their colleagues' interests and achievements and provides fruitful avenues for collaboration.

A Distinguished Lecture Series, organized by Anna Marie Skalka, Ph.D., allows individual Working Groups, as well as the postdoctoral community, to select internationally-recognized leaders in science in their fields of interest to visit Fox Chase, meet with interested scientists, and present a seminar on their latest research findings.

Training in the Ethical Conduct of Research is provided on a bi-yearly basis to members of the post-doctoral and graduate student community at Fox Chase, organized by Maureen Murphy, Ph.D. This one-day course is required for all postdoctoral and graduate trainees at the Center. Trainees view and discuss a series of "Scientific Integrity Videos," available from the American Association for the Advancement of Science, which challenge the viewer with scientific integrity issues that arise in science, such as authorship, data sharing, and acceptable practice in image manipulation. Trainees are also invited to discuss any issues not addressed in the video program. All participants receive a certificate upon completion of this program.

A Workshop in Grants Writing is organized and run by Erica Golemis, Ph.D. In this six-week intensive workshop, fellows write portions of grants and scientific manuscripts, and these efforts are discussed and critiqued by their colleagues in a roundtable discussion format. This course is currently offered every spring.

A lecture on Treatment of Research Animals is provided by Anthony Lerro, B.S., LATG, Assistant Director of the Fox Chase Cancer Center Laboratory Animal Research Facility. Instruction on the care and use of laboratory animals is given to everyone at Fox Chase before they are permitted to use research animals at the Center. The instructions include seminars that detail all of the rules and regulations regarding the use of research animals at the Center. The purpose of the animal protocol approved by the Institutional Care and Use Committee is explained. All researchers using research animals are given training on an individual basis to help them learn the techniques that they will need to work humanely with the animals.

NCI Training Grant

(Participants: Fox Chase Cancer Center Faculty)

Diana Alvarez Arias, Ph.D., University of Louisville, 2004. Appointed with K. Campbell for research on "*Regulation of KIR inhibitory function by phosphorylation.*"

Ethan David Cohen, Ph.D., University of Pennsylvania, 2004. Appointed with T. Hamilton for research on "*The role of WNT signaling in ovarian cancer,*" until September 2005. D. Cohen is presently a Postdoctoral Associate at the University of Pennsylvania, Philadelphia, PA.

Sean Deacon, Ph.D., University of Illinois at Urbana-Champaign, 2005. Appointed with J. Peterson/J. Chernoff for research on "*Investigation of the function and regulation of the actin cytoskeleton in membrane trafficking.*"

Jared D. Evans, Ph.D., State University of New York, 2005. Appointed with C. Seeger for research on "*West Nile Virus inhibition of interferon signaling.*"

Gary S. Fortin, Ph.D., Columbia University, 2004. Appointed with V. Guacci/T. Yen for research on "*Genome Stability: from DNA repair to cohesion,*" until January 2005. G. Fortin is presently a Scientist at RheoGene, Inc., Norristown, PA.

Matthew G. Hartman, Ph.D., The Ohio State University, 2005. Appointed with D. Wiest for research on "*Examination of a role for L22 ribosomal protein in T-cell development and function.*"

Jamel E. Johnson, Ph.D., Case Western Reserve University, 2004. Appointed with D. Broccoli for research on "*Characterization of telomerase-independent telomere maintenance mechanisms.*"

Sarah H. Lawrence, Ph.D., Pennsylvania State University, 2005. Appointed with E.K. Jaffe for research on "*Hexameric PBGS as a bioterrorism defense.*"

Hyung-Ok Lee, Ph.D., Temple University, 1999. Appointed with M. Shin for research on "*The role of endothelin receptor-B (EdnrB) during melanocyte and enteric neuron development,*" until March 2004 when H-O. Lee transferred her training to the laboratory of J. Cheng for research on "*FAP and its substrates in tumor progression.*"

Ying Li, Ph.D., University of Washington, 2000. Appointed with J. Burch for research on "*Analysis of a transcriptional combinatorial code for the cardiac conduction system,*" until April 2005. Y. Li is presently a Scientist at Genewiz Inc., North Brunswick, NJ.

Dina Matheos, Ph.D., Princeton University, 2003. Appointed with T. Yen for research on “*The role of Cdc27 in mitotic checkpoint regulation of the APC/C*,” until June 2005. D. Matheos is presently a Ruth Kirschstein NRSA Postdoctoral Fellow in the Yen Laboratory at Fox Chase Cancer Center, Philadelphia, PA.

Joe Ramcharan, Ph.D., Penn State University, 2001. Appointed with A. Skalka for research on “*The role of ATM and HR in retroviral DNA integration*.”

Raymond Wesley Rose III, Ph.D., University of Pennsylvania, 2003. Appointed with G. Rall for research on “*Mechanisms of non-cytolytic clearance of measles virus from the central nervous system*,” until July 2005. R. Rose is presently a Ruth Kirschstein NRSA Postdoctoral Fellow in the Rall Laboratory at Fox Chase Cancer Center, Philadelphia, PA.

Hui Qin Wang, M.D., Bin-Zhou Medical College, China, 1989, **Ph.D.**, North Carolina State University, 2000. Appointed with J. Testa for research on “*Inhibition of Akt and Fatty Acid synthase as therapeutic strategies in ovarian cancer and pancreatic cancer*,” until October 2005. H. Wang is presently a Postdoctoral Associate in the Testa Laboratory, Fox Chase Cancer Center, Philadelphia, PA.

NIAID Immunology Training Grant

(Participants: Immunology Faculty)

John K. Daley, Ph.D., Lehigh University, 1998. Appointed with G. Rall for research on “*Cytokine-mediated clearance of RNA virus infections from neurons*,” until January 2005. J. Daley is presently an Instructor at Northampton County Community College, Bethlehem, PA.

Loretha M. Carlisle-Moore, Ph.D., State University of Stony Brook, NY, 2005. Appointed with D. Wiest for research on “*Regulation of thymocyte differentiation by early growth response genes*.”

Alexander W. MacFarlane, IV, Ph.D., Temple University, 2003. Appointed with K. Campbell for research on “*Characterization of B cell adaptor for phosphatidylinositol-3-kinase*.”

Benjamin Rowley, Ph.D., Temple University, 2003. Appointed with R. Hardy for research on “*Function of immunoglobulin light chain in development of V_H11 B cells*.”

Lawrence Greenwald Fellowship

Li-Jun Wen, M.D., Beijing Medical University, China, 1995. Appointed with K. Hayakawa for research on “*Cellular origin and the role of self antigen in B-CLL development*.”

Board of Associates Fellowship

Magdalena Karbowniczek, M.D., Pomeranian Medical University, Poland, 1993; **Ph.D.**, Pomeranian Medical University, Poland, 1998. Appointed as 2004 Plain & Fancy Fellow with E.P. Henske for research on “*Angiogenesis in TSC tumors*.”

Fox Chase Cancer Center Endowed Fellowships

Rugang Zhang, Ph.D., Chinese Academy of Sciences, Shanghai, China, 2002. Appointed to the W. J. Avery Fellowship with P. Adams for research on “*Regulation of senescence by chromatin structure*.”

Dharmaraj Samuel, Ph.D., National Tsing Hua University, Taiwan, 2000. Appointed to the William J. Avery Fellowship with H. Roder for research on “*NMR structure determination of the Apple 4 (A4) domain of factor XI, a disulfide-rich protein domain involved in regulation of blood coagulation*.”

Lei Tang, Ph.D., North Dakota State University, 2004. Appointed to the Board of Directors Fellowship with E. Jaffe for research on “*Spectroscopic and kinetic studies of FixL, a heme-based oxygen-sensing protein from Sinorhizobium meliloti: Implications for signal transduction mechanism*.”

Individual External Fellowships

Dina Matheos, Ph.D., Princeton University, 2003. Awarded a two-year Ruth L. Kirschstein National Research Service Award Fellowship from the National Cancer Institute, National Institutes of Health to work with T. Yen for research on “*The role of Cdc27 in mitotic regulation of the APC/C*.”

Eva C. Pietsch, Ph.D., Wake Forest University, 2002. Awarded a two-year Ruth L. Kirschstein National Research Service Award Fellowship from the National Institute of General Medical Sciences, National Institutes of Health to work with M. Murphy for research on “*p53-mSin3a transrepression – mechanism and consequences.*”

Raymond Wesley Rose III, Ph.D., University of Pennsylvania, 2003. Awarded a two-year Ruth L. Kirschstein National Research Service Award Fellowship from the National Institute of Neurological Disorders and Stroke, National Institutes of Health to work with G. Rall for research on “*Mechanisms of non-cytolytic viral clearance from the CNS.*”

Chi Tarn, Ph.D., Purdue University, 1999. Awarded a one-year Ruth L. Kirschstein National Research Service Award Fellowship from the National Institute of Allergy and Infectious Diseases, National Institutes of Health to work with A. Godwin for research on “*Gastrointestinal stromal tumors (GIST) study: Correlative studies using specimens from multi-institutional prevention and treatment trials,*” until July 2005. C. Tarn is presently a Research Associate in the laboratory of A. Godwin at Fox Chase Cancer Center, Philadelphia, PA.

Takashi Sekiya, Ph.D., University of Tokyo, 2004. Awarded a one-year fellowship from Uehara Memorial Foundation to work with K. Zaret for research on “*Research on the epigenetics of liver development.*”

Wuestefeld Torsten, Ph.D., Medical School, Hanover, Germany, 2002. Awarded a two-year fellowship from the Deutsche Forschungsgemeinschaft (DFG) to work with K. Zaret for research on “*Research on the function of the transcription factors HNF3alpha and GATA-4 in chromatin during liver development.*”

Ornella Zollo, Ph.D., University “La Sapienza” Rome, Italy, 2000. Awarded a two-year American-Italian Cancer Foundation Fellowship to work with D. Ruggero for research on “*Role of the initiation factor of translation (eIF4E) in control of programmed cell death and cancer.*”

* Personnel left Fox Chase

^a R. Strich: *Present address*—UMDNJ, School of Osteopathic Medicine, Department of Molecular Biology, Stratford, NJ 08084