

BWF Names Hitchings-Elion Fellows and Announces Major Program Change

They will probe the biology of how differences between males and females arise, study signaling proteins that help control genes involved in cell development, and explore a newly discovered mechanism by which plant cells respond to viral infection, among other projects.

As part of our 2000 award series, BWF has awarded Hitchings-Elion Fellowships to six U.S. and Canadian scientists who are early in their careers. The fellowships are intended to help postdoctoral researchers in the biomedical sciences and medically oriented behavioral sciences make the critical transition to becoming independent investigators.

Four of the fellows will receive \$332,500 over five years, to support two years of postdoctoral training in the United Kingdom or the Republic of Ireland, a transitional year either to complete training abroad or to return to North America for additional postdoctoral training, and two years to begin a faculty appointment at a U.S. or Canadian university.

The other two awardees already are serving as Hitchings-Elion Fellows, and BWF is extending the duration of their fellowships to five years from the previous limit of three years. These recipients will receive \$223,500 to support a transitional year of postdoctoral study and two years of faculty support at a North American university.

Beginning with the 2001 award series, BWF is merging this program into our Career Awards in the Biomedical Sciences program, a larger program that also supports career development of postdoctoral scientists and offers the opportunity to train in the United Kingdom or Ireland.

The career awards program will be dedicated to honor the namesakes of the Hitchings-Elion Fellowships: Dr. George H. Hitchings and Dr. Gertrude B. Elion, both of whom shared the 1988 Nobel Prize in Physiology or Medicine for a series of scientific breakthroughs that revolutionized the world of drug design. These pioneering scientists played major roles in BWF's history. Dr. Hitchings, who died in 1998, served as our president from 1974 to 1990, and Dr. Elion served on our Board of Directors from 1991 until her death in 1999.

Career awards provide support ranging from \$445,000 for four years to \$574,000 for six years to bridge advanced postdoctoral training and the first three years of faculty service. Approximately half of the awards will go to researchers with a Ph.D. degree

in one of the biomedical sciences, and half will go to those with an M.D. or M.D.-Ph.D.



Dr. Elion

degree. Candidates must have completed at least 12 months but not more than 48 months of postdoctoral research training by the application deadline, which for the next round of awards is October 1, 2000.

For information about career awards, visit BWF's website (<http://www.bwfund.org>) or contact Rolly Simpson, program associate, at (919) 991-5110 or by e-mail at rsimpson@bwfund.org.

Hitchings-Elion (Continued on page 6)

New Awards to Help Early-Career Scientists and Promote Support of Health Research

By Dr. Enriqueta C. Bond, BWF President

"When we can move toward both of these goals, and do so by fulfilling our desire to honor two scientists who helped make BWF what we are today, the stars are indeed in alignment."

BWF's new award programs honoring George H. Hitchings, Ph.D., and Gertrude B. Elion, D.Sc., represent something of a hat trick, accomplishing three goals at the same time.

A major part of BWF's mission is to support scientists who are early in their careers. We also seek to improve the general environment for research, in part by encouraging other funding organizations to support health research.

When we can move toward both of these goals, and do so by fulfilling our desire to honor two scientists who helped make BWF what we are today, the stars are indeed in alignment.

BWF has given \$500,000 to the Triangle Community Foundation (TCF), one of our philanthropic neighbors, to establish the Gertrude B. Elion Fund for Health Research. Dr. Elion, who died in early 1999, had served on BWF's Board of Directors since 1991.

In recognition of Dr. Elion's passion for fostering the research careers of students, particularly women, BWF created this fund to celebrate her legacy and to encourage other donors to invest in health research through community foundations.

In the first grant-making initiative within this new fund, BWF and TCF have created the Gertrude B. Elion Mentored Medical Student Research Award, designed to support female medical students who are interested in pursuing health-related research projects.

Health Research (Continued on page 2)



Dr. Hitchings

Health Research (Continued from page 1)

This annual honor will provide two awards of \$12,500 each to provide research opportunities in the medical field for women and to foster mentoring relationships between students and faculty. Candidates must be full-time female medical students, who have completed at least one year, at a medical school in North Carolina.

Dr. Elion was incredibly passionate about encouraging young minds to pursue the sciences. Hoping to share her experience and knowledge, she mentored third-year medical students on research projects and had an enormous impact on their futures in science. BWF wants to ensure that her spirit continues to touch the careers of women who find as much joy and satisfaction in pursuing health research as Trudy herself did.

BWF also is pleased to announce the first recipient of the George H. Hitchings New Investigator Award in Health Research: Michael D. Ehlers, M.D., Ph.D., an assistant professor of neurobiology at Duke University Medical Center.

This award is the first grant-making initiative within the George H. Hitchings Fund for Health Research and Science Education, which BWF established at the Triangle Community Foundation in 1998. Dr. Hitchings founded the TCF with the proceeds of his 1988 Nobel Prize in Physiology or Medicine—which he shared with Dr. Elion—and thus this award continues the bridge between our organizations.

Dr. Hitchings, who died in early 1998, had served as BWF's president from 1974 to 1990, and his leadership reinforced our belief in the essential link between basic research and practical applications in medicine. The award reflects a long-held conviction passed on to BWF by Dr. Hitchings: that a modest amount of money given at the right time to researchers early in their careers can have a catalytic effect on their scientific productivity and their careers.

Dr. Ehlers is using the \$12,500 award to study the role of a highly specialized class of proteins—called NMDA receptors—that nerve cells use in converting chemical signals to electrical signals when “talking” with each. This work may provide a key

to developing new therapies for stroke, epilepsy, schizophrenia, and other neurologic and psychiatric diseases.

Beginning this year, two awards of \$12,500 each will be made: one to a health scientist to support research, and one to a health scientist to support mentoring activities in training the next generation of health scientists. Candidates must hold a position at the assistant professor level or equivalent at a degree-granting institution in the Triangle area.

The application deadline for both award programs is March 24, 2000.

For information, contact the Triangle Community Foundation, P.O. Box 12834, Research Triangle Park, NC 27709; by telephone at (919) 549-9840; or online at www.trianglecf.org.

BWF believes that such investments at the local level—not that we discourage major investments at the national level, of course!—can lead to considerable payoffs in scientific research and health improvement. And community foundations, one of the fastest growing vehicles for philanthropy, have not traditionally invested in research—a notion we hope to change.

BWF Posts Record Year for Awards

In fiscal 1999, BWF approved more than \$47.3 million in new grants and paid out nearly \$26.4 million in grants, both totals greater than in any year in our 44-year history.

We supported approximately 600 active grants (new and continuing) at more than 200 academic and other nonprofit institutions across the United States and Canada. The vast majority of grants, approximately 85 percent, were awarded through BWF's specially designated competitive award programs, with most of the awards earmarked for individual scientists nominated by their institutions.

BWF's financial assets totaled \$669.6 million at August 31, 1999, the end of our fiscal year. This represents an increase of \$117.4 million, or 21.3 percent, from the previous fiscal year. This large increase in assets was due primarily to a strong rebound in worldwide equity markets from the market downturn in August 1998.

BWF's 1999 annual report, which will be available in mid-February, provides a detailed account of our grants and other activities.

Of particular note, the 26 Career Awards in the Basic Medical Sciences made in 1999 bring to 101 the total number of awards made since the program's inception in 1995. The program now is essentially at steady state, and with this increased critical mass comes the opportunity to assess outcomes.

Initial data—collected through annual surveys, awardee progress reports, and regular meetings with awardees and members of the program advisory committee—look favorable. For the 1995 and 1996 awardees, 93 percent and 100 percent, respectively, have received tenured faculty appointments—good news, since an important program goal is to help awardees achieve research independence and secure a faculty position.

AWARDS, BY MAJOR PROGRAM AREA

	Approved	Paid
Career Development of Scientists	\$20,011,943	\$9,743,782
Emerging Infectious Diseases	6,328,010	4,799,010
Therapeutic Sciences	9,984,725	5,782,425
Reproductive Science	1,655,500	690,750
Interfaces in Science	5,169,446	2,426,115
Science Education	2,808,409	2,011,306
Environment for Science	1,392,100	932,970
TOTAL	\$47,350,133*	\$26,386,358

** This total includes approximately \$8.7 million in canceled awards. In cases where the recipient changes institutions, BWF cancels the original grant and makes a new grant for the remainder of the award to the new institution.*

BWF Welcomes New Board Members

BWF has added several new members to our Board of Directors. In addition, David M. Kipnis, M.D., has been named the board's new chair.

Dr. Kipnis, who is Distinguished University Professor of Medicine at Washington University School of Medicine, has served on the board since 1994. He replaces Samuel L. Katz, M.D., of Duke University School of Medicine, who had served as chair since 1995.

The new board members are:

Gail H. Cassell, Ph.D.

Vice President, Infectious Diseases
Drug Discovery Research and Clinical Investigation
Lilly Research Laboratories
Eli Lilly and Company

Stephen D. Corman

Founder and former Chair
and Chief Executive Officer
PharmaLink Inc.

I. George Miller, M.D.

John F. Enders Professor of Pediatric Infectious Diseases
Professor of Epidemiology and Molecular Biophysics and Biochemistry
Yale University School of Medicine

Jean D. Wilson, M.D.

Charles Cameron Sprague Distinguished Professor of Biomedical Science
University of Texas Southwestern Medical Center-Dallas

Dr. Cassell received her undergraduate degree from the University of Alabama-



Dr. Cassell

Tuscaloosa and Ph.D. in microbiology from the University of Alabama-Birmingham. She is a member of the Institute of Medicine and a Fellow of the American Academy of Microbiology, and she is a past president of the American Society for Microbiology. She currently is a member of the Board of Advisors to the Director of the Centers for Disease Control and Prevention, and she

is a past member of the National Institutes of Health Director's Advisory Committee. Dr. Cassell joined Eli Lilly and Company in 1997, after serving as the Charles McCauley Professor and chair of the Department of Microbiology at the University of Alabama-Birmingham. Her research, for which she has won several national awards and an honorary degree, has focused primarily on mycoplasma. Dr. Cassell served on BWF's Career Awards in the Biomedical Sciences Advisory Committee from 1995 to 1999, chairing the committee for part of that period.

Mr. Corman is a graduate of Indiana University and a certified public accountant.



Mr. Corman

He has worked for Price Waterhouse and as chief financial officer and treasurer of Cooper U.S.A. Inc., which merged with the pharmaceutical firm Burroughs Wellcome Co. in 1975. Mr. Corman joined the company and was named vice president of finance in 1986 and chief financial officer in 1989. After Burroughs Wellcome Co. was acquired by Glaxo in 1995, he went on to found PharmaLink, and he remains a board member and consultant to the company. Mr. Corman served on BWF's board from 1990 to 1998, and he currently chairs the Investment Committee.

Dr. Miller received his undergraduate and medical degrees from Harvard University.

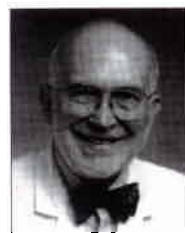


Dr. Miller

He is a member of the Institute of Medicine and a Fellow of the American Association for the Advancement of Science. He has served since 1969 on the faculty of Yale University School of Medicine, and he was a Howard Hughes Medical Institute Investigator at the school from 1972 to 1980. His research has focused on virology, and in particular on the cancer-causing human herpes viruses, the Epstein-Barr virus, and the Kaposi's sarcoma-associated herpes

virus. Dr. Miller served on BWF's Career Awards in the Biomedical Sciences Advisory Committee from 1994 to 1999.

Dr. Wilson received his undergraduate degree from the University of Texas-Austin



Dr. Wilson

and medical degree from the University of Texas Southwestern Medical School-Dallas. He is a member of the American Academy of Arts and Sciences, the National Academy of Sciences, and the Institute of Medicine, and he is a Fellow of the Royal College of Physicians, London. Dr. Wilson joined the faculty of the University of Texas Southwestern Medical School-Dallas in 1960, and he served as chief of the Division of Endocrinology in the Department of Internal Medicine from 1988 to 1995. His research has focused on the role of male hormones in sexual differentiation. Dr. Wilson served on BWF's Career Awards in the Biomedical Sciences Advisory Committee from 1994 to 1999.

New BWF Staff

Karyn Hede joins BWF as our communications officer. She brings with her a background in both science and communications, having earned master's degrees in genetics and journalism from the University of North Carolina-Chapel Hill.

Ms. Hede previously was a senior science writer at Duke University Medical Center. She also has written about science and medicine for a variety of national and international publications, including *Technology Review*, edited at the Massachusetts Institute of Technology; *Scientific American*; and the *Journal of NIH Research*, where she was a contributing writer.

Other new BWF staff members are Sammy Carabello, administrative support; Glenda H. Oxendine, administrative assistant/document processing; Betsy Stewart, secretary; and Jennifer Williams, accountant.

New Advisory Committee Members Appointed

BWF has named 11 scientists to the advisory committee for our new Innovation Awards in Functional Genomics program. Twelve new members also have been appointed to other program advisory committees.

These committees play a critical role in helping guide program development, as well as in selecting award recipients and monitoring their progress. The new members are:

INNOVATION AWARDS IN FUNCTIONAL GENOMICS

Russ B. Altman, M.D., Ph.D.
Associate Professor of Medicine
(and Computer Science, by courtesy)
Stanford Medical Informatics
Stanford University Medical Center

Aravinda Chakravarti, Ph.D.
James H. Jewell Professor of Genetics
Professor of Medicine
Case Western Reserve University

Allen Cowley Jr., Ph.D.
Professor and Chair
Department of Physiology
Medical College of Wisconsin

David R. Cox, M.D., Ph.D.
Professor of Genetics and Pediatrics
Codirector, Stanford Human Genome Center
Stanford University School of Medicine

Mark Fishman, M.D.
Professor of Medicine
Harvard Medical School
Chief of Cardiology
Massachusetts General Hospital

Terry Gaasterland, Ph.D.
Assistant Professor of Human Genetics
Rockefeller University

Philip Green, Ph.D.
Professor of Molecular Biotechnology
University of Washington

David Lipman, M.D.
Director
National Center for Biotechnology
Information

Victor A. McKusick, M.D. (Chair)
University Professor of Medical Genetics
Johns Hopkins University School of Medicine

Janet Rossant, Ph.D.
Joint Head, Program in Development
and Fetal Health
Samuel Lunenfeld Research Institute
University of Toronto Faculty of Medicine

Gary D. Stormo, Ph.D.
Professor of Genetics
Washington University School of Medicine

CAREER AWARDS IN THE BIOMEDICAL SCIENCES

Pamela J. Bjorkman, Ph.D.
Associate Professor of Structural Biology
Howard Hughes Medical Institute
Associate Investigator
California Institute of Technology

Stanley J. Korsmeyer, M.D.
Director, Program in Molecular Oncology
Dana-Farber Cancer Institute
Sidney Farber Professor of Pathology
and Professor of Medicine
Harvard Medical School

Martin M. Matzuk, M.D., Ph.D.
Stuart A. Wallace Professor of Pathology
Baylor College of Medicine

James M. Wilson, M.D., Ph.D.
Director, Institute for Human Gene Therapy
University of Pennsylvania Health System

MOLECULAR PARASITOLOGY/ MALARIA

Stephanie L. James, Ph.D.
Chief, Parasitology and International
Programs
National Institute of Allergy
and Infectious Diseases
National Institutes of Health

Chris Newbold, Ph.D.
Professor of Tropical Medicine
Institute of Molecular Medicine
University of Oxford

Kenneth D. Stuart, Ph.D.
Director
Seattle Biomedical Research Institute

CLINICAL SCIENTIST AWARDS IN TRANSLATIONAL RESEARCH

John E. Niederhuber, M.D.
Professor of Oncology and Surgery
Director, Comprehensive Cancer Center
University of Wisconsin Medical School

Craig B. Thompson, M.D.
Scientific Director, Leonard and Madlyn
Abramson Family Cancer Research
Institute
Professor of Medicine
University of Pennsylvania Medical Center

NEW INVESTIGATOR AWARDS IN THE PHARMACOLOGICAL OR TOXICOLOGICAL SCIENCES

Pharmacological Sciences Panel

Lorraine J. Gudas, Ph.D.
Revlon Pharmaceutical Professor
of Pharmacology and Toxicology
Chair, Department of Pharmacology
Weill Medical College of Cornell University

Toxicological Sciences Panel

Victor A. Levin, M.D.
Professor of Neuro-Oncology
Bernard W. Biedenharn Chair
in Cancer Research
University of Texas M. D. Anderson
Cancer Center

Committees (Continued on page 5)

Committees (Continued from page 4)**INTERFACES BETWEEN THE PHYSICAL/CHEMICAL/COMPUTATIONAL SCIENCES AND THE BIOLOGICAL SCIENCES****Douglas A. Lauffenburger, Ph.D.**

Codirector, Division of Bioengineering and Environmental Health
Professor of Chemical Engineering and Bioengineering
Massachusetts Institute of Technology

In other actions, several members have been newly appointed to chair or cochair their advisory committees.

Phil Gold, M.D., Ph.D., executive director of the Clinical Research Centre at Montreal General Hospital and the Douglas G. Cameron Professor of Medicine at McGill University, was named cochair of the Career Awards in the Biomedical Sciences committee.

John C. Boothroyd, Ph.D., professor and cochair of the Department of Microbiology and Immunology at Stanford University School of Medicine, was named chair of the Molecular Parasitology/Malaria committee.

Bruce A. Chabner, M.D., chief of hematology and oncology and clinical director of the Cancer Center at Massachusetts General Hospital, was named cochair of the Clinical Scientist Awards in Translational Research committee.

James Hudspeth, M.D., Ph.D., professor and head of the Laboratory of Sensory Neuroscience and a Howard Hughes Medical Institute Investigator at Rockefeller University, was named chair of the Interfaces between the Physical/Chemical/Computational Sciences and the Biological Sciences committee.

Program Application Deadlines

For 2001 award series, except as noted

Career Development of Scientists

Career Awards in the Biomedical Sciences	October 1, 2000
Life Sciences Research Fellowships	October 1, 2000
BWF Research Travel Grants	March 1/July 1/November 1 of each year

Emerging Infectious Diseases

Scholar Awards and New Investigator Awards in Molecular Parasitology	January 15, 2001
Scholar Awards and New Investigator Awards in Molecular Pathogenic Mycology	January 15, 2001
New Initiatives in Malaria Research	January 15, 2001

Therapeutic Sciences

Clinical Scientist Awards in Translational Research	September 1, 2000
New Investigator Awards in the Pharmacological or Toxicological Sciences	November 1, 2000

Reproductive Science

Career Awards in the Biomedical Sciences	October 1, 2000
Obstetrics and Gynecology Research Fellowships	October 1, 2000
Reproductive Scientist Development Program Research Grants	October 1, 2000

Interfaces in Science

Interfaces between the Physical/Chemical/Computational Sciences and the Biological Sciences (2000 award series)	April 10, 2000*
Innovation Awards in Functional Genomics	To be announced**

Science Education

Student Science Enrichment Program	October 15, 2000
BWF Visiting Professorships in the Basic Medical Sciences (2000-01 award series)	March 1, 2000
BWF Visiting Professorships in the Microbiological Sciences (2000-01 award series)	March 1, 2000

Environment for Science

Received all year

* It is anticipated that awards in this program will be made approximately every two years.

** BWF is evaluating this program to determine whether it will be continued beyond the 2000 award series.

Note: If a date falls on a weekend or holiday, the deadline is the next business day.

<http://www.bwfund.org>

Check out our new look! BWF's website has been redesigned. The site contains complete descriptions of our award programs and lists the most recent award recipients. You also can access BWF's annual reports, the latest directory of recipients of our competitive scientific awards, previous newsletters, and much more.

BWF Toxicology Scholars to Lecture at National Meeting

BWF's 1995 Toxicology Scholars, Ellen Li, M.D., Ph.D., and Curtis J. Omiecinski, Ph.D., will share the spotlight in the 14th annual Burroughs Wellcome Fund Toxicology Scholar Lectures, to be given March 21 and 22 at the Society of Toxicology's 2000 annual meeting, in Philadelphia.

BWF and the Society of Toxicology first announced the Scholar Award in Toxicology program in 1980, and there have been 23 scholars in the program—a cadre of key researchers who have helped shape the landscape of the toxicological sciences. The annual lectures, which were inaugurated in 1986, commemorate the completion of each scholar's term.

Dr. Li is a professor of medicine and associate professor of biochemistry and biophysics at Washington University School of Medicine. Her lecture is titled "Retinoid Binding Proteins and Retinoid Toxicity."

Vitamin A is a dietary nutrient that is indispensable for growth, reproduction, vision, and differentiation, and deficiency of the vitamin is a major cause of childhood morbidity and mortality worldwide. On the other hand, use of retinoids, or chemical analogs of vitamin A, to treat a number of skin diseases and cancers poses serious toxic side effects.

In her lecture, Dr. Li will describe her group's work on the structure and function of vitamin A or retinoid binding proteins, which are involved in vitamin A absorption, metabolism, and signaling. She will discuss studies of how these retinoid binding proteins specifically "grab" their ligands, or target compounds, as well as studies on genetically modified mice to determine the physiological role of these proteins in the absorption and metabolism of vitamin A.

Dr. Omiecinski is a professor of environmental health at the University of Washington School of Public Health and Community Medicine. His lecture is titled "Gene Induction by Phenobarbital and Cell Signaling in the Hepatocyte."

How the body "biotransforms" chemicals, including pharmaceuticals and pollutants, helps determine whether the agents produce beneficial or harmful effects. But many questions remain about the complex biochemistry and genetics of the biotransformation process.

In his lecture, Dr. Omiecinski will describe his group's work on the sedative drug phenobarbital, which is a prototypical inducing agent that stimulates biotransformation in the liver.

Among their studies, the researchers have developed a unique cell culture model, which uses specialized liver cells called hepatocytes, to probe how phenobarbital gains entry into the cell, how the drug transmits its signal to the nucleus, and how the genes of the cell are activated in response. They also are studying a genetically modified type of mouse to pinpoint which regions of the genome, or genetic blueprint, control the drug's inducing effects.

Highlights of the research conducted by many of BWF's award recipients in toxicology are described in a special report, *Probing the Interplay between Toxic Chemicals and Human Health: BWF's Toxicology Program, 1981-97*. Contact BWF to obtain copies.

Since 1998, BWF has been directing support in toxicology to our New Investigator Awards in the Pharmacological or Toxicological Sciences. These awards, which provide \$210,000 over three years, are intended to foster the development and productivity of scientists early in their careers who will bring new ways of thinking and new experimental approaches to their field. The application deadline for the 2001 award series is November 1, 2000.

The awards are open to U.S. and Canadian independent investigators who have an M.D. or Ph.D. degree and have been appointed within three years of the application deadline to a tenure-track position as an assistant professor or its equivalent. BWF encourages applications

from investigators working in established toxicology programs as well as from investigators in other fields who want to apply their expertise to toxicology research.

For more information, visit BWF's website (<http://www.bwfund.org>) or contact program associate Jean Kramarik (telephone 919/991-5122 or e-mail jkramarik@bwfund.org).



Dr. Omiecinski

Hitchings-Elion (Continued from page 1)

The 2000 Hitchings-Elion Fellows, along with their U.K. host institution and research project, are:

Tamara J. Caspary, Ph.D.
Medical Research Council
Identification and characterization of novel genes involved in mammalian sex determination

John W. R. Copeland, Ph.D.
Imperial Cancer Research Fund
Activation of SRF by actin remodeling proteins

Daniel Durocher, Ph.D.
University of Cambridge
Role of FHA domains during DNA damage signaling

Reuben S. Harris, Ph.D. (Extended award)
Medical Research Council
Delineation of the mechanism of immunoglobulin gene hypermutation

Alan J. Herr, Ph.D.
Sainsbury Laboratory
Probing the pathway of RNA-mediated defense with viral suppressor genes

Kenro Kusumi, Ph.D. (Extended award)
National Institute for Medical Research
Genetic analysis of *Delta-like 3* and *Notch* pathway regulation in vertebrate hindbrain and paraxial mesoderm segmentation



Dr. Li

BWF News Notes

BWF made 43 awards to U.S. and Canadian institutions to support visiting professorships during 1999-2000. The total includes 32 professorships in the basic medical sciences and 11 professorships in the microbiological sciences.

The professorships provide \$5,000. The professors spend up to five days at the host institutions, engaging in teaching and discussion with students and faculty; they also deliver a BWF Lecture on a subject pertinent to their discipline.

The professorships in the medical sciences are supported in partnership with the Federation of American Societies for Experimental Biology and the Canadian Federation of Biological Societies. The professorships in the microbiological sciences are supported in partnership with the American Society for Microbiology.

The deadline for applying for the next award series is March 1, 2000. Information about both professorships is available on BWF's website at <http://www.bwfund.org>.

- BWF awarded Life Sciences Research Fellowships to two researchers in 1999. BWF supports the awards, which provide \$120,000 over three years and are open to U.S. and Canadian postdoctoral scientists, in partnership with the Life Sciences Research Foundation (LSRF). The awardees and their projects are:

Chau V. Huynh, Ph.D.
Yale University School of Medicine
Intracellular interaction of *Leishmania amazonensis* with host histocompatibility complex (MHC) class II molecules

Peri Tate, Ph.D.
University of California-Berkeley
Heterochromatin proteins old and new

The deadline for applying for the next round of awards is October 1, 2000. For information, contact LSRF at (609) 258-3551 or visit its website at <http://lsrf.molbio.princeton.edu>.

- BWF made two awards in 1999 to support the career development of scientists working in reproductive science.

Salli I. Tazuke, M.D., a research associate at Stanford University Medical Center, received a Reproductive Scientist Development Program (RSDP) research training grant, which provides \$240,000 over three years. Her project is titled "Molecular analysis of early germ cell overgrowth and its function in germ line stem cell biology."

RSDP is a consortium supported by the National Institute of Child Health and Human Development, professional societies, and foundations. The program is intended to help U.S. obstetrician-gynecologists working in the basic reproductive sciences bridge the postdoctoral years and initial faculty appointment. RSDP supports the advanced postdoctoral years and BWF supports the first three faculty years.

The deadline for applying for the next round of awards is October 1, 2000. For information, contact RSDP at (415) 476-9047.

Karen H. Lu, M.D., a clinical fellow in gynecologic oncology at Harvard Medical School, received an Obstetrics and Gynecology Research Fellowship, which provides \$144,000 over three years. Her project is titled "Genetic alterations in ovarian cancers associated with germ line *BRCA1* mutations."

BWF supports this award, which is open to U.S. and Canadian postdoctoral obstetrician-gynecologists, in partnership with the American Association of Obstetricians and Gynecologists Foundation (AAOGF).

The deadline for applying for the next round of awards is October 1, 2000. For

information, contact Nora P. Smith of AAOGF at (804) 924-9921.

- Two recipients of Career Awards in the Biomedical Sciences had their research featured in *Science* and *Nature* during 1999.

Nenad Ban, Ph.D., a 1999 awardee and postdoctoral fellow at Yale University, was lead author of a research report highlighted on the cover of the August 26 issue of *Nature*. Dr. Ban and his colleagues described their construction of a detailed structural map of a critical portion of the ribosome, or the intercellular factory that builds new proteins, in the bacterium *Haloarcula marismortui*.

Peter D. Kwong, Ph.D., a 1998 awardee and postdoctoral fellow at Columbia University College of Physicians and Surgeons, was part of a group that, in both journals, reported work on deciphering the molecular trickery of HIV, the AIDS virus.

In the June 18 *Nature*, the group's report on charting the atomic structure of HIV's protein coat—work that may help in efforts to design a vaccine against the disease—was one of three AIDS-related research articles highlighted on the cover. In the June 19 *Science*, which was heavily devoted to AIDS research, Dr. Kwong and colleagues reported on their HIV-related work, and their findings also were highlighted in the "Research News" section of the journal.

In Memoriam: Daniel Nathans, M.D. (1928-1999)

Daniel Nathans, a member of BWF's Board of Directors since 1994, died on November 16, 1999. A highly respected scientist, Dr. Nathans shared the 1978 Nobel Prize in Physiology or Medicine for work using proteins called restriction enzymes to slice apart and analyze the genetic material DNA. His discoveries using these "biochemical scissors" are credited with



helping to launch the ongoing revolution in molecular biology and genetic engineering that is producing numerous advances in medicine and other fields.

"In his own quiet way, Daniel Nathans was a most influential member of our board," says BWF President Dr. Enriqueta C. Bond. "As but one example of his impact, Dan's visionary perception of the 'interconnectedness' of scientific disciplines was instrumental in leading BWF to develop our Interfaces between the Physical/Chemical/Computational Sciences and the Biological Sciences program."

Dr. Nathans was University Professor of Molecular Biology and Genetics and a Howard Hughes Medical Institute Senior Investigator at Johns Hopkins University School of Medicine, where he had served on the faculty for nearly four decades.

Deadlines Near for Popular Training Courses

Three training courses for biological scientists and medical researchers, held at the Marine Biological Laboratory and partially supported by BWF, have upcoming application deadlines. The courses, which are limited to 16 students, feature intensive laboratory work combined with a wide-ranging series of lectures and other activities.

"Frontiers in Reproduction: Molecular and Cellular Concepts and Applications" has a February 15 deadline. To be held May 21-July 1, the course is for advanced postdoctoral fellows and independent scientists and physicians early in their careers.

This course will provide comprehensive and sophisticated training in research strategies and state-of-the-art laboratory methods bearing on cellular, immunological, and molecular biological approaches to important problems in reproductive science. Led by a faculty of leading basic and clinical scientists drawn from the national and international reproductive health community, students will receive training in all aspects of reproductive science, including such areas as early development, implantation,

parturition, immunology, and the molecular basis of hormonal regulations.

"Biology of Parasitism: Modern Approaches" has a March 1 deadline. To be held June 8-August 11, the course is for advanced graduate students, postdoctoral fellows, and independent investigators who are seeking training in modern approaches to the study of protozoan and helminthic parasites.

This course will focus on the molecular basis of parasite function and the host-parasite interaction, with special emphasis given to the most recent and exciting developments in these areas. The laboratory work is intended to give participants the technical expertise necessary to pursue their own research efforts, while at the same time maintaining an element of the search for the unknown. Additional workshops will address such areas as bioinformatics and drug design, and a series of lectures will cover virtually all of the systems and areas of active research in modern parasitology.

"Molecular Mycology: Current Approaches to Fungal Pathogenesis" has an April 11 deadline. To be held August 7-25, the course is for advanced graduate students, postdoctoral fellows, and independent investigators who are seeking training in the application of molecular methodologies to problems posed by fungi that infect humans.

The main areas to be covered include an introduction to the medically important

fungi, molecular manipulation and analysis of these fungi, host-fungal interactions, and the application of molecular methods to the analysis of fungal disease.

Laboratory exercises will focus on *Candida*, *Aspergillus*, and *Cryptococcus*, covering such topics as gene cloning strategies, pathogenicity and host-response assays, and the microscopic identification of fungi. Panel discussions will focus on current research problems and on the development of new research models and techniques, and a lecture series will address a variety of pathogens and research areas.

The codirectors of this course all are affiliated with BWF. John E. Edwards, Ph.D., chief of the Division of Infectious Diseases at Harbor-UCLA Medical Center, and P. T. Magee, Ph.D., professor of genetics and cell biology at the University of Minnesota, are members of BWF's mycology program advisory committee. Aaron P. Mitchell, Ph.D., associate professor of microbiology at Columbia University College of Physicians and Surgeons, is a 1997 BWF Scholar in Molecular Pathogenic Mycology.

For application materials, contact Carol Hamel, admissions coordinator, Marine Biological Laboratory, 7 MBL Street, Woods Hole, MA 02543-1015. Information also is available by telephone (508/289-7401), by e-mail (admissions@mbi.edu), or on the World Wide Web (<http://www.mbl.edu>).

FOCUS

This newsletter is published quarterly by the Burroughs Wellcome Fund, an independent private foundation dedicated to advancing the medical sciences by supporting research and other scientific and educational activities.

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So What's New?

BWF wants to expand communications about the research conducted by the scientists we support.

We therefore encourage award recipients to notify BWF about papers you will publish, major lectures you will make, or patents you will receive, as well as about any other notable achievements that have resulted, totally or in part, from BWF-funded research. We would like to hear about such items as early as possible.

Also, if your institution's public information office has reported on your work, or if your work has been described in a local publication, please send us copies of the articles.

Spreading the word about your work, through FOCUS and other outlets, is one way BWF can help make the case for supporting basic medical research. We'd like your assistance in this important task. We will, of course, check with you before releasing any information.

Send the information to the FOCUS editor.