

ALUMNI NEWSLETTER

May 1998

Volume II, Number I

*This is the first in a series of articles about
the Division of Medical Sciences Ph.D. programs.*

IMMUNOLOGY

A MULTIDISCIPLINARY PROGRAM AT DMS

The discipline of immunology arose from the classical fields of medical biology, including microbiology, genetics, pathology, clinical medicine, cell biology, and biochemistry. As such, it is a multidisciplinary field which requires broad training. Since its inception, the Immunology Program at Harvard has reflected the multidisciplinary origin of the field and has been a model of an integrated educational program, involving faculty from diverse disciplines in the Harvard medical and scientific communities and its affiliated hospitals and institutions. Thus, the goals of the Immunology Program are to provide an interdisciplinary program for students together and to bring together and consolidate faculty from diverse departments in both formal and informal settings to encourage collaboration.

THE HISTORY

The Immunology Program of the Division of Medical Sciences officially began in 1974 when the Division was granted authority by Harvard University to award a Ph.D. degree in immunology. This came about at the impetus of Dr. Albert Coons who had long emphasized the need for Harvard to grant an immunology degree. Coons became the first chairman of the Program and continued to direct it until his death in 1978. He organized the immunology faculty by holding meetings and seminars at a monthly dinner club at HMS. The early members included Alwin Pappenheimer, John Enders, Edgar Haber, John David, Fred Rosen, K. Frank Austen, Stuart Schlossman, Kurt Bloch, Byron Waksman, and Baruj Benacerraf—a distinguished group indeed. The program was initially supported by funds from the Division and these were subsequently supplemented by a National Institutes of Health (National Cancer Institute) training grant which continues to this day. The grant provides partial support for student stipends, tuition and seminars. The first graduate of the program was Susan L. Swain, who is currently Director of the Trudeau Institute in Saranac, NY.

The Program was taken over by Dr. Emil Unanue who remained as chairman until he left HMS in 1984. Unanue raised the funds for an endowment to start the Program-sponsored memorial lectureship at DMS, the Albert Coons Memorial Lecture. The most recent Coons lecturer was Dr. Douglas Fearon from the University of Cambridge Medical School, England in 1997. Dr. Baruj Benacerraf directed the program from 1984 to 1986, first as Chairman of the (con't. p.2)

ALUMNI NEWS

Michele S. Swanson, '91 Genetics was one of 60 young researchers named to receive a Presidential Early Career Award for Scientists and Engineers (PECASE), the highest honor bestowed by the United States government on outstanding scientists and engineers beginning their careers. The awards were presented in a White House ceremony on November 3, 1997.

The Presidential Awards were established by President Clinton in February 1996, and are intended to help meet the Administration's goals of producing the finest scientists and engineers for the twenty-first century and maintaining U.S. leadership across the frontiers of scientific research. The awards recognize young scholars research contributions, their promise, and their commitment to broader societal goals. "These gifted young professionals exemplify the best of our science and technology community and will help set the scientific pace for the U.S. and the world in the years ahead," the President said.

Dr. Swanson is currently an assistant professor in the Department of Cell Biology at the University of Michigan Medical School. (con't. p.2)

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MORE ALUMNI NEWS

Dr. Heike Pahl, '92 Genetics, returned to Germany after receiving her degree to work with Dr. Patrick Baeuerle in Munich and Freiburg. Last year she obtained a second Ph.D. degree, a Germany university degree called "Habilitation." Dr. Pahl was recently offered two tenured positions and credits Harvard, DMS, and the American education system in general for her early success. At age 31 she will probably be the youngest tenured professor in Germany. Heike continues to work on NF-kB and has combined her interests in molecular hematology and molecular biology with a medically-related topic, namely polycythemia vera, a disorder with which her mother was diagnosed. Heike would very much like to hear from other alumni who have used suppressive subtractive hybridization (either in the form of the clontech kit or self-made) to exchange technical tricks. She can be contacted at: Institute for Experimental Cancer Research Center for Tumor Biology P.O. Box 1120 79106 Freiburg Tel: ++49-761-206 1685 FAX: ++49-761-206 1599

ALUMNI WORKING GROUP UPDATE

At its April 1998 meeting, Dennis Vaccaro, '77 Physiology, was formally appointed Chair of the DMS Alumni working group. He is charged by the group with leading it in the development of a structure for a DMS alumni organization, resulting in the first election of officers and the formation of a national and international DMS alumni advisory council.

Has your job and/or address changed? Please let us know ASAP. See contact information on page 1.

IMMUNOLOGY (con't.) Department of Pathology and later as President of the Dana-Farber Cancer Institute. Benacerraf was responsible for facilitating the appointments of many young immunologists to the Harvard faculty.

Dr. Martin Dorf led the Immunology Program from 1986 to 1997, a period of phenomenal growth in the field of immunology and in the Program. He spearheaded this growth by nearly tripling the number of students, faculty, curriculum offerings, and financial support. The first foreign and minority students were admitted and clinicians were brought into the Program. An additional training grant was obtained from the National Institute of Allergy and Infectious Diseases which further expanded the Program. Inter-institutional ties were strengthened and formal seminar series were begun. Over the past decade student journal clubs were organized, poster sessions were established and web sites, recruiting weekends, career and alumni programs were begun. Industrial sponsorships were obtained and an endowed lectureship in honor of Dr. Benacerraf was built. The Program now boasts over 100 alumni and about 80% are employed in academic settings.

The basic premise of the Program continues to be that the curriculum should include a broad, and to the students, challenging, spectrum of disciplines. Students in the Immunology Program have been responsible for topics as far-ranging as the history of immunology, the development of the immune systems of lower vertebrates and the mathematical derivation of the Scatchard equations for analyzing receptor-ligand interactions. A dozen years ago molecular immunology was in its infancy. Only four cytokines had been identified, the T-cell receptor had just been cloned, and the molecular basis of immunoglobulin gene rearrangement had recently been defined. Immunology's relative immaturity as a science, combined with its multidisciplinary nature, made it likely that graduates would end up in other fields. The broad exposure to fundamental concepts and techniques from biochemistry, cell biology and genetics would make this possible. Furthermore, since this was one of only a few immunology programs in the country, students were explicitly trained as a vanguard that would take advantage of the opportunity to introduce immunological concepts and techniques into future research environments that could benefit from them. Thus, the two unique elements of that training, a strong background in the fundamental concepts of immunology itself and a philosophy of immunology as a multidisciplinary field, enables graduates to utilize a broad range of skills from molecular genetics to cell biology to antimicrobial drug discovery.

A NEW ERA

With the recent arrival of Dr. Hidde Ploegh as the new director of the Immunology Committee, new opportunities exist for further growth of the program. Dr. Ploegh moved from MIT in 1997 to join the Division as the Mallinkrodt Professor of Immunopathology. He brings a new era with a stated emphasis on building the basic science foundations of the Program. His own research focus is on the molecular immunology mechanisms by which viruses utilize the host cellular machinery involved in antigen presentation to (con't. p. 5)

E:Mail Newsnotes

Tell us what is new and interesting in your life. Send your story to:
dmsvca@warren.med.harvard.edu

Rudolph E. Tanzi, '90 Neuroscience writes "I am currently an Associate Professor of Neurology (Neuroscience) at Harvard (didn't move too far!) and I am Director of the Genetics and Aging Unit at Massachusetts General Hospital. My research interests remain the genetic basis of Alzheimer's disease and aging. I live in Hull, MA and avidly ski, scuba dive and play piano".

tanzi@helix.mgh.harvard.edu

Bill Holt, '81 Physiology recently left Cambridge NeuroScience where he spent the last 6 years in a number of management positions, most recently as Vice President of Drug Discovery Operations. He will be Chief Scientific Officer/Vice President of Research of a start-up pharmaceutical company focusing on drug targeting of membrane transport genes, proteins and processes to treat different diseases and disorders, based in southern California.

wholt@mediaone.net

Kimberly Wagner, '94 Biochemistry and Molecular Pharmacology is working in the New York office of The Boston Consulting Group, Inc., a management consulting firm. Currently she is a Case Leader and manages the day to day activities for client projects. She works mainly in R&D intensive industries like pharmaceuticals, consumer goods and information technology. She is interested in participating in the 'counsel'—let me know if you need/want my input. For your demographic analysis I can be described as a: 1994 grad, female, working as a management consultant, living in the greater NYC area.

Wagner.Kim@BCG.com

Loretta Nielsen, '86 Physiology joined the Tumor Biology Department at Schering-Plough Research Institute in New Jersey in 1989 after an embryology post-doc at UCSF in Dr. Roger Pedersen's lab. On April 1st she became a Principal Scientist. For the past three years her work has focused on tumor suppressor gene therapy for cancer. Schering-Plough's first gene therapy drug, a replication-deficient adenovirus which expresses the p53 tumor suppressor gene, is currently in phase I/II clinical trials worldwide for a variety of cancer indications.

LORETTA.NIELSEN@spcorp.com

John A. Assad, '91 Neurobiology held post doctoral positions at Baylor College of Medicine in Houston for 5 years and is now back at HMS as an assistant professor in the Dept. of Neurobiology. His lab works on neuronal mechanisms of visual perception and visual guidance in primate neocortex.

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Jeng-Shin Lee, '95 Virology is currently working as a post-doc in Dr. Richard Mulligan's lab at Children's Hospital, Boston. His work is focused on targeting resting cells with retroviral vectors. The Lee's first daughter, Audrey Yu-Pei Lee, was born on Jan 28, 1998.

jlee@rascal.med.harvard.edu

Alex Bortvin, '97 Genetics is currently a postdoc with David Page at the Whitehead Institute in Cambridge, MA studying germline development in mammals using a transgene approach in the mouse. I have some experience with web pages and could be of some help depending on schedule and time available.

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Dwayne D. Simmons, '86 CDB current research focus is on the mechanisms of development employed by cholinergic pathways in auditory portions of the brainstem and inner ear. In 1996, hereceived tenure in the Department of Physiological Science at UCLA. Beginning in May, 1998 he will be at the Central Institute for the Deaf, an affiliate of Washington University Medical School with joint appointments in the departments of Otolaryngology, Anatomy and Neurobiology and in the department of Speech and Hearing Science at the medical school.

simmons@lifesci.ucla.edu

David M. Frim, '88 Neuroscience is now an academic pediatric neurosurgeon after protracted post-graduate residency training. In addition to his clinical duties he is trying to put his DMS training to use in the lab with investigations of neurotrophic factor mediated neuroprotection. He is married to Tammy Claman and has two children, Daniel, 6, and Adam, 2.

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Steven King, '90 Pharmacology writes "Since 1993 I have been an assistant professor of Physiology and Biophysics at the University of Texas Medical Branch in Galveston, Texas. I teach "biochemistry and molecular biology of membranes" in the graduate school, and "pulmonary physiology" in the medical school. My laboratory focuses on structure/function relationships in bacterial GABA trans-(con't.)

E:Mail Newsnotes (con't.)

porters which may be simple models for GABA transporters from brain. I hope to graduate my first crop of Ph.D. students (two) in 1999. I am married with children (two girls 6 and 3 years), a cat, a dog, a house in the suburbs, and two cars in the garage. And for the record, I still use a Macintosh (but at least it's a clone)".

sking@utmb.edu

Anula Jayasuriya, '91 Microbiology After an internship in Pediatrics at Childrens' Hospital (Boston) she attended Harvard Business school. After working briefly as a management consultant for BCG (the Boston Consulting Group) she joined the pharmaceutical industry (Syntex and then Roche) and held a variety of positions, the most recent as a vice president in the Drug Development Organization of Roche. In the last year she has been working as a technology consultant to several Silicon Valley Venture Capital firms. She recently co-founded a start-up in the life sciences area and is in the process of raising funding. Anula married David Gilmour, a classmate from Harvard College and has a daughter, Shanika Gilmour who is completing Kindergarten. Her husband is an entrepreneur in Information Technology and they enjoy living in Silicon Valley.

anula@gilmour.net

Roberto Patarca-Montero, '87 Pathology is now both a scientist and a physician and split my time between clinical duties and as Scientific Director of the E.M. Papper Laboratory of Clinical Immunology at the University of Miami School of Medicine. He is working on immunotherapeutic approaches for AIDS and associated neoplasias and on the chronic fatigue syndrome. He is also the Editor of Critical Reviews in Oncogenesis and of the Journal of Chronic Fatigue Syndrome.

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Marc E. Rothenberg, '90, Immunology.

The incidence of allergic diseases is rapidly increasing and asthma, an allergic disease of the lungs, has now emerged as the chief diagnosis responsible for the hospitalization of children. Studies over the past decade have elegantly demonstrated that the pathogenesis of allergic diseases involves the development of chronic inflammation caused by the abnormal activation and infiltration of distinct immune cells (e.g. eosinophils) into various mucosal tissue. My laboratory is focused on elucidating the mechanisms of allergic responses with the goal of identifying novel pharmaceutical targets for the treatment of patients with allergic disorders. My laboratory has molecularly identified and biologically characterized several critical molecules that regulate allergic responses. These molecules include growth factors for inflammatory cells (e.g. interleukin-5) and novel white blood cell chemoattractants that belong to the chemokine family of cytokines (e.g. eotaxin). Current projects are (1) to test the importance of eotaxin in vivo using eotaxin transgenic and gene targeted mice that the laboratory has developed; (2) to biochemically characterize the signal transduction mechanism responsible for eosinophil activation; (3) to test the importance and blockade of these pathways in patients with inflammatory diseases such as allergies, malignancy, and AIDS, and (4) to identify genes that predispose to allergies.

Besides conducting these studies, I happily live with my wife Joy, and three daughters in Cincinnati, Ohio:

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Zach Hall, '66 Biochemistry writes "I have just moved back to UCSF from the NIH, where, for a little over three years, I was the Director of the National Institute of Neurological Disorders and Stroke. It is an exciting time to be at the NIH, and I thoroughly enjoyed my time there. At UCSF, I have assumed the position of Vice-Chancellor for Research, where one of my major responsibilities will be to help develop a new UCSF campus at Mission Bay. This is quite an exciting project which will eventually occupy over 2.5 million square feet on 43 acres. I am enjoying being back in San Francisco with my wife, who plays in the San Francisco Symphony, and being closer to Wyoming, where we have just built a vacation and possible retirement home."

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Robert L. Morris, '95, Cell and Developmental Biology. I have been pursuing a postdoc at the University of California at Davis. Work there identifying functions of motor proteins in early development has led to my current research on mechanisms of ciliogenesis. I will be combining this research with teaching as an Assistant Professor of Biology at Wheaton College in Norton, Massachusetts, starting 1 July 1998, after moving back to the Boston area with my wife Shari and our two happy and healthy daughters, Christina (3 yr), and Jessica (6 mo).

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IMMUNOLOGY (con't.) evade immune detection. Specifically, his interests lie in the mechanisms by which pathogens evade immune detection and in how cells use their major histocompatibility complex (MHC) proteins to present human and foreign antigens to patrolling immune cells. A recent review of his work can be found in *Science*: April 10, 1998 vol. 280, pp. 248-253.

In his academic capacity Dr. Ploegh plans to broaden the educational opportunities for students interested in the study of immunology at Harvard. A strong background in genetics, biochemistry and cell biology will be emphasized to provide a foundation for more focused study of special topics in immunology. Each student's curriculum will be tailored to his or her individual background. The immunology course offerings are being expanded to a set of 16 quarter-courses, each taught by two faculty members in their specialty subject areas. The immunology graduate committee is now composed of a core of 12 immunologists from throughout the Harvard Medical School community, including immunologists in the BBS program and in the School of Public Health. These immunologists will serve both as a resource to students and as a roster from which qualifying examiners are chosen. A sub-committee of 8 members will become part of the immunology program as faculty and/or student advisors. Future plans for the program include an annual retreat at which students and faculty will have an opportunity to present data, intermingle and get to know one another in new ways. Plans are also underway to find a new physical "home" for the Immunology Program that would include a small library, student lounge, seminar room and some office space. The combination of a faculty with diverse immunological interests in the Harvard Medical area with a program offering a strong educational background in immunology provides an exceptional opportunity for DMS students with an interest in immunology and has attracted a substantial number of outstanding degree candidates. There are currently 54 students enrolled in the Immunology Program.

Article written by Drs. Carolyn Kurtz, PhD '90, and Marjorie Lees, PhD '51, with assistance from Katherine Zuccala, Program Coordinator for Immunology.

MORE ALUMNI NEWS

Dr. Sheila Little, '78 Microbiology and Molecular Genetics joined the Molecular Biology division of Eli Lilly as a Scientist in 1980 to work on the expression of human recombinant genes in mammalian cells. Her work on the expression and construction of modified tissue-plasminogen activator and recombinant expression of activated protein C resulted in four issued patents. Sheila was promoted to Research Scientist in 1986 and joined the Neuroscience Research Division in 1991 where her work has focused on the processing of the beta-amyloid precursor protein. She has cloned

several potential APP processing enzymes and filed appropriate patents. She was promoted to Senior Research Scientist in 1993 and became chair of the Alzheimer's Action Group in 1995. She became a full Adjunct Professor of the University of Indiana in 1997.

Dr. Michael J. Newman, '82 Cell and Developmental Biology, after a postdoctoral fellowship at Cornell (Ithaca) and an Assistant Professorship at Brandeis, joined the Roche Institute of Molecular Biology as an Assistant member. From Roche he joined Sandoz (now Novartis) and

rose to become world wide head of Cancer Biology. After the merger with Ciba-Geigy to form Novartis, Michael was further promoted to Executive Director with responsibility not only for Cancer Biology research in USA, but for Oncology programs in Switzerland, Austria and Japan.

Dr. George Smith, '70. Microbiology currently Professor of Chemistry or Biochemistry at the University of Missouri in Columbia, Missouri was cited in "Research News" in the January 16, 1998, issue of the journal *Science*. An article on Cancer Research entitled: "Peptide-Guided Cancer Drugs Show promise in Mice." The investigators utilized a technique developed in the late 1980's by George Smith. The technique is called "Phage Display" and involves engineering bacterial viruses so that each displays a different random peptide on its surface. The variety of phages can be used to test whether the protein they bear will interact with a specific protein or a specific tissue. George accomplished his thesis in the laboratory of the late Dr. Edgar Haber, in the Microbiology Department that at the time housed Immunology. Ref: *Science* (1998) Vol. 279, page 323.

Dr. Robert H. Cagan '66 Biochemistry has recently retired from the position of Director: R & D Division of Colgate-Palmolive to establish a Consulting Service providing strategic leadership and fiscal oversight for companies and non-profit organizations. Robert has had a most distinguished career as a tenure professor at the University of Pennsylvania Medical School, the Veterans Administration Medical Center and for thirteen years with Colgate-Palmolive. His current location is 23 Lake Shore Drive, Lawrenceville, NJ 08648.

(The above Bios were written from interviews by Dr. Harold Amos)

DMS Alumni Symposium
CURRENT TOPICS IN BIOMEDICAL RESEARCH

Wednesday, June 3, 1998, from 3:00-5:00 PM

Building C, the Cannon Room.

David Albertini (Ph.D. 1975), Professor and Acting Chairman of Anatomy and Cellular Biology at the Tufts University School of Medicine, will be speaking about "Basic and Applied Approaches in the Management of Infertility."

Elizabeth Neuman Spar (Ph.D. 1992), Technical Specialist at Banner and Whitcoff, Ltd. will speak of the work she accomplished as a Research Associate in Medicine at the Dana Farber Cancer Institute, on "Pathophysiology of Breast Cancer: An Interaction Between Cyclin D1 and the Estrogen Receptor."

G. William Rebeck (Ph.D. 1991), Assistant Professor of Neurology at Massachusetts General Hospital and Harvard Medical School, will talk about the "Genetic Risk Factors in Alzheimer's Disease."

Reed Edwin Pyeritz, (M.D., Ph.D. 1972), Chair of the Department of Human Genetics at MCP-Hahnemann School of Medicine; Professor of Human Genetics, Medicine and Pediatrics; and Director of the Institute for Genetics at the Allegheny University of the Health Sciences in Pittsburgh and Philadelphia, will discuss "Marfan's Syndrome: Bedside to Bench and Back."

Please join us for this symposium!!

NEWS.....INFORMATION.....COMMENTS

Is there anything you would like to communicate to your fellow DMS alumnae/i?

We would be glad to edit and print it in the next newsletter this fall.

Please send your message by mail, fax, e-mail

This is your newsletter—participate in making it successful!!

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