The 9th National Research Symposium of the NIH Centers for AIDS Research

HIV/AIDS Research 2005: FROM INNOVATION TO INTERVENTION

Thursday, Nov. 17, 2005
8:00 a.m. to 5:15 p.m.
Dunlop Auditorium, Stemmler Hall
Penn School of Medicine
3450 Hamilton Walk
Philadelphia, PA 19104
November 17, 2005

We are pleased to welcome you to the 9th National Research Symposium of the NIH Centers for AIDS Research, hosted by the Penn Center for AIDS Research.

The National Institutes of Health established Centers for AIDS Research (CFARs) for the purpose of creating an interdisciplinary environment that encourages collaborative efforts among HIV/AIDS investigators in basic, clinical, behavioral, and social sciences. This interactive environment is fostered through the establishment of shared resource core facilities that provide expertise, resources, and services that are not otherwise available, and by a developmental grants program that enables CFARs to encourage emerging scientific opportunities and to support promising junior investigators. CFARs also sponsor training and educational initiatives, promote translational research, and strive to establish research and outreach programs that address those international and domestic populations hardest hit by the AIDS epidemic.

Currently, there are 20 CFARs throughout the United States. Senior researchers from all of the Centers come together each year to attend a National Research Symposium that highlights recent progress and ongoing challenges in HIV/AIDS. This year’s symposium entitled, “HIV/AIDS Research 2005: From Innovation to Intervention”, covers a range of cutting-edge topics presented by some of the most prominent investigators in the field. The Penn CFAR is very pleased to host this exciting program, and we hope that the activities of this day will both highlight new advances and strengthen our resolve to work together to address the challenges this epidemic continues to pose throughout the world.

The Penn CFAR includes over 160 HIV/AIDS investigators at the University of Pennsylvania, The Children’s Hospital of Philadelphia, and the Wistar Institute, and supports research programs in viral pathogenesis, clinical, immunology & vaccine, and behavioral & social sciences.

We wish to thank the NIH Office of AIDS Research and the University of Pennsylvania School of Medicine for their generous support of this event, and the University of Alabama at Birmingham CFAR for obtaining NIH funds to enable trainees from each CFAR to attend this meeting. We want to acknowledge the efforts of the Penn CFAR Community Advisory Board for their help in planning this event, and we want to express our gratitude to the pharmaceutical companies listed in the program for their support and their contributions.

We hope this Symposium leads to future collaborations among HIV/AIDS investigators throughout the National CFAR network. It is only through partnerships, collaborations, dialogue, and integration of our collective resources that we will meet the formidable challenge of understanding, treating and preventing AIDS.

Sincerely,

James A. Hoxie, M.D Francisco González-Scarano, M.D.
Director, Penn Center for AIDS Research Co-Director, Penn Center for AIDS Research
7:30 a.m.  Breakfast

8:15 a.m.  Welcome  
Dr. James Hoxie  
Director of the Penn Center for AIDS Research  
Dr. Arthur Rubenstein  
Dean of the University of Pennsylvania School of Medicine

8:30 a.m.  Chair, Dr. Philip Johnson  
Chief Scientific Officer, The Children’s Hospital of Philadelphia

8:35 a.m.  Dr. Gary J. Nabel  
Director of the Vaccine Research Center, NIH  
The Critical Path to an AIDS Vaccine

8:55 a.m.  Dr. Barton F. Haynes  
Professor of Medicine and Immunology and Director of the Vaccine Institute, Duke University  
Research Plans for the Center for HIV/AIDS Vaccine Immunology (CHAVI)

9:20 a.m.  Chair, Mr. J. Edward Murray  
Vice Chair of the Community Advisory Board, Penn CFAR  
Ms. Julie A. Furj, M.S.W.  
Coordinator of the Community Advisory Board, Penn CFAR  
U.S. Urban Epidemic and "The Community"

9:35 a.m.  Mr. Steven F. Wakefield  
Director of Community Education, HIV Vaccine Trials Network, Fred Hutchinson Cancer Research Center  
46% Is Not Acceptable: How did We Get Here?

10:00 a.m.  Break

10:15 a.m.  Chair, Dr. Harvey Friedman  
Director of the Penn CFAR International Core and Chief of the Division of ID  
The PENN-Botswana Program, Combining Patient Care and Clinical Research

10:25 a.m.  Dr. Peter Kilmarx  
Director of the BOTUSA and Program Officer of the CDC, PEPFAR  
The Epidemiology of HIV/AIDS and Related Conditions in Botswana, and the Role of the U.S. President’s Emergency Plan for AIDS Relief

10:50 a.m.  Dr. Mark W. Kiine  
Director of Baylor’s International Pediatric AIDS Initiative, AIDS International Training/Research Program and CDC Global AIDS Technical Assistance Project  
Expanding Access of Children to HIV/AIDS Care and Treatment: The Botswana-Baylor Children's Center of Excellence Model

11:15 a.m.  Dr. Richard G. Marlink  
Professor of Immunology and Infectious Diseases, Harvard School of Public Health  

11:40 a.m.  Dr. Tendani Gaolathe  
Co-Director, Infectious Disease Care Clinic, Princess Marina Hospital, Botswana  
Managing Anti-retroviral Treatment Failure - IDCC Experience
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<th>Time</th>
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<td>Dr. Gerald Friedland</td>
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<td>Director, Johns Hopkins Center for Tuberculosis Research</td>
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<td>Controlling HIV-related TB</td>
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<td>Professor and Head, Department of Infectious Diseases, Guy's, King's and St.</td>
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<td>Thomas' School of Medicine, King's College London</td>
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<td>Professor of Microbiology, University of Pennsylvania</td>
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<td>Professor of Biochemistry, Department of Molecular Biology, University of Utah</td>
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<td>Dr. Peter Kwong</td>
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<td>Chief of the Structural Biology Section, Vaccine Research Center, NIH</td>
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<td>The HIV Envelope: Recent Advances in Structural Understanding</td>
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<td>Dr. Louis J. Picker</td>
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<td>Associate Director of the Vaccine and Gene Therapy Institute, Oregon and Health Sciences University</td>
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<td>Professor, Department of Pathology and Laboratory Medicine, University of Wisconsin-Madison Medical School</td>
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<td>Cellular Immune Responses in Elite Controllers of AIDS Virus Replication: Implications for Vaccine Development</td>
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<td>Director, Penn CFAR Immunology Core, Professor of Path and Lab Medicine, University of Pennsylvania</td>
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**Frederic Bushman, Ph.D.**

Dr. Bushman is a Professor of Microbiology at the University of Pennsylvania. Research in Dr. Bushman’s laboratory focuses on understanding the transfer of genetic information between cells and organisms. Phenomena as diverse as viral replication, variegation in plants, construction of the vertebrate immune system, and evolution of whole genomes are all mediated in large measure by reactions that transfer and rearrange DNA sequences.

The majority of the research in Dr. Bushman's laboratory centers on replication of the human immunodeficiency virus (HIV). In order to grow, HIV must integrate a DNA copy of its genes into human DNA. Consequently, HIV replication is an example of a process that permanently alters the genome of the host cell. HIV is also the cause of a world-wide epidemic afflicting an estimated 40 million people.

Another research area in Dr. Bushman’s laboratory focuses on HIV integration. This reaction serves as a model for understanding many of the DNA breaking and joining reactions that mediate DNA transfer between organisms. The HIV-encoded integrase enzyme that mediates integration is also the only one of the three HIV enzymes that has not been targeted by clinically useful inhibitors. As a result, work in Dr. Bushman’s laboratory is aimed at the dual goal of understanding mechanism and developing clinically useful inhibitors. Other studies in Dr. Bushman’s laboratory center on cellular systems that block viral replication, such as the RNA interference and interferon systems, and replication of additional viral groups such as poxviruses.

**Richard E. Chaisson, M.D.**

Dr. Chaisson is Professor of Medicine, Epidemiology and International Health and serves as Director of the Center for Tuberculosis Research at the Johns Hopkins University in Baltimore. From 1988-1998, he was Director of the Johns Hopkins AIDS Service, and co-founded the Johns Hopkins HIV Clinic cohort, an observational study that has been the source of more than 130 scientific publications on the outcomes of HIV disease and its treatment. In 1998, he founded the Johns Hopkins Center for Tuberculosis Research, a multidisciplinary research and training center with more than $100 million in grants for the study of TB from bench to bedside.

Dr. Chaisson’s research interests focus on tuberculosis and HIV infection, including global epidemiology and control, prevention, clinical trials, and public health interventions. He is currently principal investigator of 11 research grants, and is principal investigator of the Consortium to Respond Effectively to the AIDS/TB Epidemic (CREATE), an international research consortium funded by the Bill and Melinda Gates Foundation to assess the impact of novel strategies for controlling HIV-related TB. He has published over 300 scientific papers and book chapters.
Gerald Friedland, M.D.

Dr. Friedland is the Director of the AIDS Program and Professor of Medicine and Epidemiology and Public Health at Yale University School of Medicine and Yale-New Haven Hospital in New Haven, Connecticut. He is a specialist in infectious diseases and has been actively involved in the organization and provision of HIV clinical care and clinical and epidemiologic research since 1981.

Dr. Friedland’s research interests have focused on the transmission, natural history and clinical manifestations of HIV infection, particularly in vulnerable populations and in clinical trials of new antiretroviral and opportunistic infection therapies, including those for tuberculosis. He has been the principal investigator of the New England Program for AIDS Clinical Trials (ProACT), a component of the NIH-sponsored Community Program for Clinical Research on AIDS (CPCRA) and has designed a number of national protocols on antiretroviral therapy and protocols specifically to address therapeutic issues among injecting drug users. In addition, he has helped develop programs at the local, national, and international level to educate health care providers in HIV clinical care. More recently, Dr. Friedland has been working to develop operational research protocols and programs to provide antiretroviral therapy in South Africa including the integration of HIV and TB treatments and care. He is an honorary Visiting Professor at the Nelson R. Mandela School of Medicine in Durban, South Africa.

Julie A. Furj, M.S.W.

Ms. Furj is the Coordinator for the Community Advisory Board of the Penn Center for AIDS Research (Penn CFAR). Before taking this position, Ms. Furj served as a case manager for three years at Project HOME’s Women of Change, a frontline shelter where she worked with severely mentally ill (SMI), homeless, and drug and alcohol-addicted women, connecting them to a variety of services such as health care, therapy, housing, and income.

In 2000, Ms. Furj began her work as an advocate for persons with chronic mental illness and HIV/AIDS. She joined the Penn Center for AIDS Research in 2003 and worked to facilitate the newly-formed Community Advisory Board (CAB) of the Penn CFAR. Under Ms. Furj’s initiative, the CFAR CAB has been involved in “The Examination of the Distribution of HIV/AIDS Services in Philadelphia”, its first-ever research project which has been presented at various conferences including the 2004 International AIDS Conference in Bangkok, Thailand; The National Conference on AIDS in Philadelphia; and HIV/AIDS: The Social Work Response in Chicago, IL. Ms. Furj has also been involved in the creation and implementation of the CFAR CAB Annual Red Ribbon Awards that are given in recognition of exceptional contributions in clinical, research, and community work in the area of HIV/AIDS.
**Tendani Gaolathe, M.D.**

Dr. Gaolathe grew up in the city of Gaborone, not far from the Princess Marina Hospital in Botswana. Little did she know that when she grew up, she would become the Co-Director of the Infectious Disease Care Clinic there. Early experiences that influenced Dr. Gaolathe’s decision to become a physician included time spent living in a Bushmen settlement in the heart of the Kalahari Desert. In the settlement, there were no doctors available to provide routine medical care for the people. The nearest clinic was 42 km (about 26 miles) away and the residents had to rely on a visiting nurse who would come once a month to handle medical needs and emergencies.

Dr. Gaolathe graduated from George Washington University in D.C. and proceeded to St. Georges University in Grenada. Upon graduation in 1996, she worked as a medical officer in the Princess Marina Hospital and later returned to the U.S. in 1998 for a residency in Internal Medicine at St. Michael’s Medical Center in Newark, New Jersey. In January of 2002, Botswana’s first anti-retroviral clinic opened at the Princess Marina Hospital and Dr. Gaolathe was appointed Co-Director of the clinic. The clinic has grown considerably in four years and Dr. Gaolathe is proud that over 14,000 patients have been treated during that time.

Dr. Gaolathe serves as Director of the BHP-PEPFAR Master Trainer Corps. She also works as an advisor to many AIDS-related organizations, is Patron to the Botswana Medical Students’ Association, and is the Assistant Physician to the President of Botswana.

**Barton F. Haynes, M.D.**

Dr. Haynes is the Frederic M. Hanes Professor of Medicine and Immunology at Duke University Medical Center. Trained in Internal Medicine, Infectious Disease and Allergy and Clinical Immunology, he currently serves as Director of the Duke Human Vaccine Institute. He has studied HIV-1 and HIV-1 vaccine development for over 15 years and recently was named Director of the NIAID Center for HIV/AIDS Vaccine Immunology.

An authority on human immunity, the human thymus, and T cell function, Dr. Haynes is an internationally known vaccinologist and retrovirologist. Over the past 15 years, he has led the effort at Duke to develop a practical and effective HIV vaccine. His scientific accomplishments in human immunology include the discovery and elucidation of the biology of important human immune system molecules, and definition of the earliest stages of human thymus development. In the area of retroviral research, Dr. Haynes described the role of HTLV-I in causing arthritis syndrome. He was the first investigator at an academic institution in the U.S. to develop a candidate HIV vaccine at the bench and to take it through the FDA into phase I human clinical trials.

In his 25 years at Duke University Medical Center, he has served as Chief of the Division of Rheumatology, Allergy and Clinical Immunology, and Chair of the Department of Medicine.
Carl H. June, M.D.

Dr. June is a Professor of Pathology and Laboratory Medicine at the University of Pennsylvania. He is a 1975 graduate of the Naval Academy in Annapolis, and graduated from Baylor College of Medicine in Houston in 1979. He did graduate training in Immunology at the World Health Organization in Geneva, Switzerland from 1978-79, and post-doctoral training in transplantation biology at the Fred Hutchinson Cancer Research Center in Seattle from 1983 – 1986. He was a faculty member in the Departments of Medicine and Cell and Molecular Biology at the Uniformed Services University for the Health Sciences in Bethesda from 1987 to 1998. Dr. June is board certified in Internal Medicine and Medical Oncology.

Since coming to Penn in 1999, Dr. June has established a facility to produce experimental cell-based therapies. Currently, Dr. June is the Director of Translational Research Programs at Penn’s Abramson Family Cancer Research Institute, and is involved with several clinical trials that are testing various forms of cell-based therapies for cancer and HIV infection. In addition, Dr. June is the leader of a program project to develop lentiviral vectors for therapy of chronic HIV infection, and directs the Immunology Shared Resource Core for the University of Pennsylvania Center for AIDS Research.

Peter Kilmarx, M.D.

Dr. Kilmarx has conducted research in Asia on sexual transmission of HIV and other sexually transmitted infections among populations of sex workers, pregnant women, women in family planning clinics, and youth. He has conducted several phase I and phase II clinical trials of vaginal microbicides in Asia and Africa.

From 2002-2005, Dr. Kilmarx was the Director of the Center for Disease Control (CDC) country program in Botswana, known as the BOTUSA Project which is a collaboration of the Botswana Government and the U.S. Centers for Disease Control and Prevention. This project provides technical assistance, consultation, and funding, and conducts research with the Botswana government and other local and international partners for prevention, treatment, care and support, and surveillance of HIV/AIDS, tuberculosis, and related conditions. Currently, Dr. Kilmarx is the acting chief of the CDC Global AIDS Program’s Surveillance and Infrastructure Development Branch in Atlanta.

Dr. Kilmarx is a co-investigator of two large clinical trials in Botswana, one to evaluate continuous isoniazid preventive therapy for tuberculosis in people with HIV infection, and another to evaluate daily oral tenofovir for chemoprophylaxis of HIV infection.
Mark W. Kline, M.D.

Dr. Kline is a Professor of Pediatrics at Baylor College of Medicine. He is a long-time pediatric HIV/AIDS clinical investigator and is board certified in pediatrics and infectious diseases. He is Past-Chair of the Primary Therapy Research Agenda Committee of the NIH-funded Pediatric AIDS Clinical Trials Group and the Committee on Pediatric AIDS of the American Academy of Pediatrics. He is Director of several programs at Baylor including: the International Pediatric AIDS Initiative, the AIDS International Training and Research Program, and Baylor’s CDC Global AIDS Technical Assistance Program. In addition, Dr. Kline is Chief of Retrovirology at Baylor College of Medicine.

Dr. Kline directs the Baylor International Pediatric AIDS Initiative’s collaborative HIV/AIDS clinical research programs in Romania and Africa. Over the past four years, this group has established centers of excellence for pediatric HIV/AIDS care and treatment and clinical research in Romania, Botswana, Uganda, Lesotho, Swaziland, Malawi and Burkina Faso.

Dr. Kline has authored over 200 scientific papers and textbook chapters. He has given over 220 national and international presentations on topics in pediatric infectious diseases.

Peter Kwong, Ph.D.

Dr. Kwong is the Chief of the Structural Biology Section of the Vaccine Research Center (VRC) at the National Institutes of Health in Bethesda, MD. He has been a pioneer in elucidating the crystal structures of CD4-bound HIV-1 gp120 and recently, gp120 containing its V3 hypervariable loop.

His laboratory applies structural biology in the hope of designing an effective HIV vaccine. The overall goal is to reveal the actual structures of the HIV molecules that confound the humoral immune system in HIV-infected people, namely, the envelope glycoproteins gp120 and gp41. The visualization of gp120 at atomic resolution has enabled numerous overlapping mechanisms of immune evasion to be identified. These include conformational change, steric occlusion, islands of variation, and a carbohydrate cloak, all of which serve to disguise the gp120 surface from immune detection. These findings have helped to explain why it so difficult to elicit neutralizing antibodies against HIV. Although structure-based approaches have revolutionized drug design, vaccine design has in the past, placed almost no reliance on structural information. In part, this is because the interactions of antigens with the immune system are much more complex than drug/target interactions. Given the availability of the atomic structure of gp120, the failure of natural gp120 to elicit a protective immune response, and a large receptor binding region on the surface of gp120 itself, Dr. Kwong’s laboratory has proposed a novel approach that combines a functional and structural understanding of the HIV envelope with the design immunogens that are disabled in the ability to evade humoral immunity. It is hoped that these modified immunogens will have the ability to elicit a broadly neutralizing antibody response. This approach, if successful against HIV, has the potential of being useful against a variety of other pathogenic viruses.
Richard G. Marlink, M.D.

Dr. Marlink is a Professor of the Department of Immunology and Infectious Diseases at the Harvard School of Public Health. He is a medical oncologist and also serves as Scientific Director of Care and Treatment of the Elizabeth Glaser Pediatric AIDS Foundation. In this capacity, he helps direct care and treatment programs and targeted evaluation in eight countries in Sub-Saharan Africa and PMTCT expanded efforts in 19 countries and 600 sites in the developing world.

Dr. Marlink is the Research and Executive Director of the Harvard School of Public Health AIDS Initiative. He has directed HIV/AIDS-related clinical and laboratory training, infrastructure development and research in Botswana, Brazil, Puerto Rico, Senegal, South Africa, Tanzania, and Thailand since 1985. He helped to create the groundbreaking Botswana-Harvard AIDS Institute Partnership for HIV Research and Education, officially established in 1996. Under his direction, the Partnership launched the KITSO AIDS Training Program, which helps train Botswana’s health care providers to care for those affected by HIV/AIDS. This is now Botswana’s national AIDS training program. Dr. Marlink is also the principal investigator of the Tshepo Study, Botswana’s first large-scale antiretroviral treatment study and he is on the Board of Directors of the African Comprehensive HIV/AIDS Partnerships, a public-private partnership between the Government of Botswana, the Merck Company Foundation and the Bill and Melinda Gates Foundation.

As a co-investigator in a variety of other clinical studies, Dr. Marlink is involved in studies related to: the genomic and immunologic analysis of Clade C HIV-1; the prevention of mother-to-child transmission of HIV during breastfeeding; the cost-effectiveness of health interventions in Africa; and the relationship between African traditional medicine and treatment with antiretroviral medications.

He has authored or co-authored over 75 scientific articles. He has written a textbook on AIDS, Global AIDS Crisis: a Reference Handbook, and edited another, AIDS in Africa, 2nd Edition.

J. Edward Murray

Mr. Murray began his work as a community organizer in 1990. Due to the death of a close friend, he decided to dedicate some time to fight HIV/AIDS by educating as many people as possible about the disease. During this time, he began working with Unity Inc., organizing black gay youth as peer educators. In 1994, Mr. Murray worked for BEBASHI, an organization in Philadelphia that focuses on the health of the Black community. In this role, he worked with the Brother to Brother Project, bringing needed HIV/AIDS information to the young black men. Mr. Murray then became the lead Educator/Facilitator for GMAD, Gay Men of African Decent, located in New York, where he continued to bring critical information about HIV to the black MSM community. At GMAD, Mr. Murray established one of New York’s first outreach programs targeting black gay youth.

Mr. Murray moved back to Philadelphia in 1997 to take a position with Prevention Point where he organized the West Philadelphia community to bring a needle exchange site to the area. He continues to serve this organization as the Secretary of its Board of Directors. For the past four years, he served as Deputy Director
of Philadelphia FIGHT, providing outstanding leadership within the Minority Communities including the Black Churches in Philadelphia. He became the founding Chair of the Community Advisory Board (CAB) of the Penn Center for AIDS Research in 2003. Under his leadership, the CAB established bylaws, began several community projects, established the Red Ribbon Awards for AIDS research, community and policy, and held a briefing for Elected Officials and their staff on the status of AIDS and related services in the Philadelphia area.

Mr. Murray is now the new Political/Community Organizer for Service Employees International Union (SEIU) District 1199P. He continues to advocate on behalf of the most disenfranchised populations in our communities through his new position and through his monthly radio show entitled, “Positive Living” that airs on 1340 AM WHAT in Philadelphia.

Gary J. Nabel, M.D., Ph.D.

Dr. Nabel is Director of the Vaccine Research Center in the National Institute of Allergy and Infectious Diseases at NIH. He is well known for his work as a molecular virologist and immunologist in the fields of HIV, Ebola virus, and cancer research.

Dr. Nabel’s early work defined the key cellular protein that acts as a switch to stimulate the HIV virus to start copying itself during activation of immune system cells. These studies defined one of the important determinants of whether the virus lies quietly in the cells or starts reproducing. Since then, his laboratory has examined this regulatory pathway in much more detail, identifying several other regulators and their roles and showing that activation of the key regulator is linked to cell cycle control.

Dr. Nabel’s interest in viral gene expression and vaccines has involved other emerging viruses, including Ebola and SARS viruses, and he currently leads a concerted effort at NIH to develop effective vaccines for the AIDS virus and other emerging infectious diseases.

In recognition of his expertise at the forefront of virology, immunology, gene therapy, and molecular biology, Dr. Nabel was elected a member of the Institute of Medicine of the National Academy of Sciences in 1998. Another of his honors is the American Society for Biochemistry and Molecular Biology-Amgen Scientific Achievement Award in 1996.
**Louis J. Picker, M.D.**

Dr. Picker is Professor of Pathology; Molecular Microbiology and Immunology. He is Associate Director of the Vaccine and Gene Therapy Institute and Director of Pathobiology, Immunology Division of the Oregon Regional Primate Research Center.

Dr. Picker’s laboratory works on five interrelated areas of T cell biology in human and non-human primates: (1) Fundamental investigation into the physiology of T cell memory and effector responses, including the mechanisms controlling “selection” of the memory repertoire. These studies also investigate the development and consequences of functional differences in cytokine synthesis, homing behavior, and activation threshold among antigen-specific memory T cells, and the mechanisms responsible for memory T cell well being and regeneration; (2) Determination of the mechanisms responsible for the immunopathogenesis of AIDS-causing lentiviruses; (3) Determination of the basis of protective immunity against chronic human pathogens, particularly Human and Simian Immunodeficiency Virus (HIV/SIV) and Cytomegalovirus (CMV); (4) Development of prophylactic and/or therapeutic vaccines against these diseases; and (5) Mechanisms of T cell reconstitution after HIV-1 infection or bone marrow transplantation.

Dr. Picker’s laboratory has developed special expertise in the analysis of antigen-specific memory T cells, and exploits these technologies in the examination of human subjects and rhesus macaque models of chronic viral infection.

**Wesley Sundquist, Ph.D.**

Dr. Sundquist is Professor of Biochemistry in the Department of Molecular Biology at the University of Utah.

Projects in Dr. Sundquist’s laboratory focus on defining the architecture of the viral particle, its assembly and disassembly pathways, and the mechanisms of virus release. The laboratory approaches include NMR, EM, and crystallographic studies of viral complexes, biochemical analyses of the interactions between viral components and their cellular partners, and genetic analyses of viral protein functions. Together with collaborators at the University of Utah and Myriad Genetics, Dr. Sundquist and his laboratory are characterizing the human cellular pathway that allows HIV to bud from infected cells. This pathway normally functions to create vesicles that bud into a late endosomal compartment called the multivesicular body (MVB). The HIV Gag protein usurps this pathway by binding directly to MVB components, and thereby redirects the cellular machinery to the plasma membrane for use in virus budding. The Sundquist group has now identified a series of proteins implicated in HIV budding and MVB biogenesis, and are investigating how these proteins recognize viral proteins, sort ubiquitylated cellular proteins into MVB vesicles, and promote membrane fission during vesicle/virus budding.
Steven F. Wakefield

Mr. Wakefield is the Associate Director for Community Relations and Education for the HIV Vaccine Trials Network at the Fred Hutchinson Cancer Research Center. Mr. Wakefield leads the Community Education Unit which provides technical assistance and training in a range of activities that support community involvement in HIV prevention vaccine research. This Unit assists local and international Community Advisory Boards (CABs), and HVTN researchers at the Core, Laboratory, Statistical Centers and sites to plan, execute and evaluate community involvement/educational programs.

Mr. Wakefield currently serves on the NIAID AIDS Vaccine Research Working Group (AVWRG), the AIDS Vaccine Advocacy Coalition (AVAC) Board and the Executive Committee of the North Carolina based HIV Prevention Trials Network (HPTN). He also serves his local community through participation on the Washington State Governor’s Advisory Council on HIV/AIDS.

Mr. Wakefield is a health care advocate with over thirty years of involvement in projects that increase community participation, particularly for African Americans. He was the national chair of the NIH HIV Network for Prevention Trials (HIVNET) volunteer Community Advisory Board from 1995 to 1997, and former National CAB chair of the CPCRA, Community Programs for Clinical Research on AIDS. He also served as the Executive Director of The Night Ministry, an organization serving homeless and runaway youth in Chicago. Other leadership included public service on the City of Chicago Department of Public Health Board, NIAIDS’ AIDS Research Advisory Council (ARAC) and NIH Office of AIDS Research Advisory Council (OARAC). Mr. Wakefield has presented workshops and forums on vaccine research to local, national and international audiences from tribal gatherings to scientific symposia.

David I. Watkins, Ph.D.

Dr. Watkins is a Professor of Pathology and Laboratory Medicine at the University of Wisconsin-Madison Medical School.

Antibody-based approaches to vaccine development have proven unsuccessful for HIV. Consequently, Dr. Watkins’ laboratory is attempting to develop vaccines that elicit cellular immune responses. To understand these responses in detail, the lab utilizes the SIV-infected rhesus macaque as an animal model. This model system allows the Watkins Lab to follow all the cellular immune responses to the virus throughout the course of infection in both vaccinated and naive macaques. Previously, the lab has shown that cellular immune responses to HIV/SIV exert a strong selective pressure on the virus in the chronic phase of infection, implying that they play an important role in the containment of viral infection. More recently, Dr. Watkins’ laboratory has identified virus specific CTL responses that emerge during the first weeks of infection that select for viruses resistant to these responses by eight weeks post-infection. Currently, the laboratory is vaccinating and challenging macaques in an attempt to understand the entire cellular immune response to the virus during both the acute and chronic stages of infection. They use a variety of vectors and in some studies are starting to see control of viral replication, at least for short periods of time. The lab is also developing new techniques to look at the quality of immune responses generated by vaccination and/or in response to viral challenge.
The 20 NIH-sponsored CFARs located at academic and research institutions throughout the United States are:

Albert Einstein/Montefiore
Baylor College of Medicine
Case Western/University Hospitals of Cleveland
Colorado Health Sciences Center
Duke University
Emory University
Harvard Medical School
Johns Hopkins University
Lifespan/Tufts/Brown University
New York University School of Medicine
University of Alabama at Birmingham
University of California, Davis/VRDL/CDHS
University of California, Los Angeles
University of California, San Diego
University of California, San Francisco/GIVI
University of Massachusetts
University of North Carolina
University of Pennsylvania, Children’s Hospital of Philadelphia, and The Wistar Institute
University of Washington, Seattle
Vanderbilt/Meharry