2012 Highlights

The Center for Retrovirus Research 2012 Distinguished Research Career Award

Warner C. Greene, MD, PhD, Director, Gladstone Institute of Virology and Immunology (GIVI), Nick and Sue Hellmann Distinguished Professor of Translational Medicine, Professor of Medicine, Microbiology and Immunology, Co-Director, University of California, San Francisco (UCSF)-GIVI Center for AIDS Research was the 13th recipient of the annual award for his seminal contributions to the understanding of the molecular and cellular biology of HIV and HTLV.

Dr. Greene received his BA degree with great distinction from Stanford University and his MD and PhD degrees with honors from Washington University School of Medicine. He then completed his residency training in Internal Medicine at the Massachusetts General Hospital at Harvard University. From 1979-1986, he served as a senior investigator at the National Cancer Institute, where he established his research laboratory. In 1987, he became professor of medicine at Duke University and an Investigator in the Howard Hughes Medical Institute. In 1992, Dr. Greene became the founding director and a senior investigator of the GIVI and was also appointed a professor of medicine, microbiology, and immunology at UCSF.

Dr. Greene’s basic and translation studies of HIV and HTLV have fundamentally contributed to our understanding of human retroviruses and viral pathogenesis. His current research focuses on the pathogenic interplay between human retroviruses and immune cells to define the mechanisms underlying viral replication and transmission. Dr. Greene’s laboratory also pursues basic studies on important transcription factors to better understand their roles in HIV latency. Dr. Greene is the author of more than 350 scientific papers and has been recognized as one of the 100 Most Cited Scientists in the world. He has been invited for many distinguished lectures worldwide. Dr. Greene is a member of the Institute of Medicine of the National Academies, a fellow of the American Academy for the Advancement of Science, and President-Elect of the American Association of Physicians. Dr. Greene has mentored more than 120 students and fellows during his over 30 year career in science. Many of his trainees have become independent researchers.

In addition to his distinguished research contributions, Dr. Greene also dedicates his time and effort to community service to enhance public health. Since 2007, he has served as President of the Accordia Global Health Foundation, whose mission is to overcome the burden of infectious diseases in Africa by creating innovative health models, building centers of excellence, and strengthening medical institutions.

Dr. Greene’s visit was sponsored by the Center for Retrovirus Research, Departments of Veterinary Biosciences and Molecular Virology, Immunology and Medical Genetics, Public Health Preparedness for Infectious Diseases Program, and the Comprehensive Cancer Center Viral Oncology Program.

See a summary of previous award winners: vet.osu.edu/retrovirus-research/award
Dr. Kathleen Boris-Lawrie and a multi-institution team of scientists launch the NIH Center for HIV RNA Studies (CRNA)

The NIH CRNA will receive up to $21.5 million in funding over five years to unlock the secrets of RNA-based diseases. An example of interdisciplinary research across university campuses, the CRNA will study the structural biology of viral RNA and its interactions with viral and host proteins. Because RNA is less amenable to structural analysis than proteins are, the researchers will develop approaches to overcome this technical challenge. The new technology will be applied by the Boris-Lawrie lab to their previous discovery of the positive-acting translational control element in the 5’-leader of HIV-1 overlapping TAR-polyA. Structural investigations will define the necessary interactions with host effectors proteins, including host RNA helicase proteins. This work could help identify RNA-based targets for HIV treatments as well as shed light on application of the RNA-based target for other diseases.

More at http://sitemaker.umich.edu/crna/home

Dr. Kristine Yoder, PhD has been promoted to assistant professor in the Department of Molecular Virology, Immunology, and Medical Genetics

Dr. Yoder studied host co-factors of HIV integration as a graduate student with Dr. Frederic Bushman. Her postdoctoral studies evaluated the roles of DNA repair proteins during integration. She has shown that host DNA repair proteins may be either positive or negative regulators of retroviral infection. Proteins of the nucleotide excision repair pathway, XPB and XPD, are able to defend the host genome from retroviral integration by degrading the viral cDNA by an evolutionarily ancient mechanism. In contrast, base excision repair (BER) proteins enhance HIV integration. Her lab continues to focus on the mechanism of retroviral integration. They are using a combination of cellular and biochemical assays to determine how chromatin and DNA repair factors affect integration sites and efficiency.

Dr. Jesse Kwiek and colleagues lead an outreach effort to develop public health interventions to fight HIV

In Malawi, a peaceful country in sub-Saharan Africa, there are an estimated one million people living with HIV (out of a population of 14 million), one half of whom are women. Prevention of HIV infection and unwanted pregnancy is essential for the survival and well-being of women and families throughout the world. In a collaboration led by Dr. Alison Norris of the Ohio State University College of Public Health, Drs. Jesse Kwiek and Abigail Norris Turner of the Ohio State College of Medicine, Dr. John Casterline from the Ohio State Institute of Population Research, Dr. Victor Mwapasa of Malawi College of Medicine, Dr. Michael Belfort of Baylor College of Medicine, and colleagues at Child Legacy International (CLI), the multidisciplinary team has designed a study to examine how decision making effects people’s behavior around HIV testing and contraception use. With a better understanding of decision making, the team expects to develop public health interventions to improve reproductive health.
Dr. Patrick Green receives the inaugural David Derse Memorial Lecture/Award

Dr. Patrick Green, PhD, Associate Dean for Research and Graduate Studies, Director of the Center for Retrovirus Research, and Leader of the CCC Viral Oncology Program at The Ohio State University, received the inaugural David Derse Memorial Lecture/Award on December 11, 2012 at the Frederick National Laboratory for Cancer Research. Dr. Green presented his memorial lecture entitled “HTLV-1 Transforming Genes: Tax versus Hbz”.

Dr. Green has over 30 years of research experience in the field of murine and human retroviral pathogenesis with more specific focus on human T-cell leukemia virus (HTLV). He has been appointed as a member of numerous NIH study sections and scientific panels, he currently serves as Editor of AIDS Research and Human Retroviruses, as well as a member of the editorial boards of Retrovirology and Journal of Virology. Dr. Green has been recognized with a number of honors that include the Pfizer Award for Research Excellence and the International Retrovirology Association Award, as well as designation as an American Cancer Society Fellow, Leukemia Society of America Scholar, American Association for the Advancement of Science (AAAS) Fellow, American Society for Microbiology Fellow, Ohio State University Distinguished Scholar, and member of the Board of Trustees of the Leukemia/Lymphoma Society.

The Annual David Derse Memorial Lecture and Award is supported by a gift fund established with the National Cancer Institute. This lecture series honors David Derse’s outstanding accomplishments, remarkable generosity, and boundless passion for science and will help foster the scientific discourse and free exchange of ideas that were so much a part of his life.

Doctoral Graduates

Rami Doueiri, PhD. “Characterization of the human T-cell leukemia virus type 2 p28 accessory protein”. Molecular Cellular and Developmental Biology Graduate Program

Christopher Jones, Ph.D. “Primer tRNA annealing by human immunodeficiency virus type 1”. Ohio State Biochemistry Graduate Program

Varun Dewan, Ph.D. “Lysyl-tRNA Synthetase-Capsid Interaction in Human Immunodeficiency Virus-1: Implications for the Priming of Reverse Transcription and Therapeutic Development”. Ohio State Biochemistry Graduate Program

Meng Sun, Ph.D. “Retrovirus-Specific Differences in Matrix and Nucleocapsid Protein-Nucleic Acid Interactions: Implications for Genomic RNA Packaging”. Chemistry Graduate Program

Sirena Coon, MS “Polymorphisms of the SAMHD1” Molecular Cellular and Developmental Biology Graduate Program.

Dr. Patrick Green (left) receives award from Hye-Kyung Derse and Dr. Stephen Hughes (Director, HIV Drug Resistance Program). Photo Courtesy of SAIC-Frederick Inc.

vet.osu.edu/retrovirus-research
Selected publications


Selected grant awards

Li Wu, NIH R21AI098524 “The Role of UBE2V1 in HIV-1 Restriction in Primary Monocytes” (2012-2014)

Patrick Green R21GR00025015 “Role of viral APH-2 in HTLV-2 replication and persistence” (2012-2014)


Li Wu, NIH R21AI102822 “Novel Host Proteins in the HIV-1 Pre-integration Complexes” (2012-2014)


Li Wu, UNESCO-ASM (American Society for Microbiology) Travel Award, Visiting Resource Person Program (2012)