

Nebraska Center for **VIROLOGY**

The Morrison Center was designed to foster interactions and collaborations among researchers, students, and staff and includes a large seminar room with video conferencing capabilities, multiple conference rooms, and upscale spaces designed so that people from different labs can interact and share ideas over lunch or coffee. We are currently in the process of adding over 20,000 square feet of lab and meeting space funded primarily by ARRA dollars through NIH. The expansion is close to completion and is set to be operational in late 2013.

The Ken Morrison Life Sciences Research Center is named in honor of Mr. Ken Morrison, a Hastings, NE, businessman, University of Nebraska Foundation trustee and longtime UNL supporter, who provided the lead private gift for construction.

Nebraska Center for Virology Membership

All interested virologists are invited to apply for membership in the Nebraska Center for Virology. Visit our website at: <http://www.unl.edu/virologycenter>.

NEBRASKA CENTER FOR VIROLOGY

4240 Fair Street
102 Morrison Center
Lincoln, NE 68583-0900

Phone: 402.472.4560
Fax: 402.472.3323
Email: virologycenter@unl.edu
www.unl.edu/virologycenter

The University of Nebraska – Lincoln is an equal opportunity educator and employer with a comprehensive plan for diversity.



Sponsored by:
Nebraska Center for Virology
The 3M Foundation
and NE-INBRE

- 8:00 AM Registration and Continental Breakfast
- 8:30 Welcome
Charles Wood
 Lewis Lehr/3M University Professor
 Director, Nebraska Center for Virology
 School of Biological Sciences
 University of Nebraska—Lincoln
- Welcome
Archie Clutter
 Dean, Agriculture Research Division
 Professor, Animal Science
 University of Nebraska—Lincoln
- Moderator
Fernando Osorio
 Professor, School of Veterinary &
 Biomedical Sciences
 Nebraska Center for Virology
 University of Nebraska-Lincoln
- 9:00 **Daniel L. Rock, PhD**
 Novel virulence and host range genes of African
 Swine Fever Virus: Prospects for vaccine
 development
- 10:00 **Deborah Brown, PhD**
 The role of cytolytic CD4 T cells in influenza
 infection
- 11:00 Break



Ken Morrison Life Sciences Research Center

April of 2008 marked the opening of the Ken Morrison Life Sciences Research Center on the East Campus of the University of Nebraska—Lincoln (UNL). This is one of the newest buildings on the UNL campus and is home to the Nebraska Center for Virology. The \$21 million, 74,000-sq. ft. contains research facility with labs, faculty, student, and administration offices, houses most of the UNL virologists affiliated with the Nebraska Center for Virology, and is one of the university's signature research programs. These faculty worked at several locations across campus before moving into the new building.

The building features state-of-the-art equipment and research space for 14 faculty that will enable the virology center to expand research on many of the leading viruses. UNL virologists study the molecular mechanisms that viruses use to cause disease in humans, plants, and animals. Their discoveries could lead to new tools to prevent or treat diseases caused by HIV, human papilloma virus, herpes and other major viruses.

Continued on next page

2001

Richard Bessen, PhD, Creighton University
Lynn Enquist, PhD, Princeton University
Clinton Jones, PhD, Univ. of Nebraska-Lincoln
Kamel Khalili, PhD, Temple University
Edward Mocarski, PhD, Stanford University
Lee Ratner, M.D., PhD, Washington Univ. St. Louis
Robert Weldon, Jr., Univ. of Nebraska - Lincoln

2002

Edward A. Hoover, DVM, PhD, Colorado State Univ.
Dennis Kolson, PhD, Univ. of Pennsylvania
William P. Lynch, PhD, Northeastern Ohio Univ.
Volker Vogt, PhD, Cornell University

2003

Nigel Fraser, PhD, University of Pennsylvania
Roger Hendrix, PhD, Univ. of Pittsburgh
Asit Pattnaik, PhD, Univ. of Nebraska-Lincoln
Jialin Zheng, M.D., Univ. of Nebraska Med. Center

2004

Jason C. Bartz, PhD, Creighton University
Kathryn V. Holmes, PhD, Univ. of Colorado Health Sciences Center
Bernard Moss, M.D., PhD, Chief, Laboratory of Viral Diseases, NIAID, NIH
Richard J. Roberts, PhD, Research Director, New England Biolabs
Michael G. Rossmann, PhD, Purdue Univ.
Luwen Zhang, PhD, Univ. of Nebraska - Lincoln

2005

Bruce Chesebro, Chief, Rocky Mountain Laboratories, NIAID, NIH
Ann Palmenberg, PhD, Univ. of Wisconsin-Madison
Patricia G. Spear, PhD, Northwestern Univ.
John T. West, PhD, Univ. of Nebraska-Lincoln
Mark J. Young, PhD, Montana State Univ.

2006

Peter Angeletti, PhD, Univ. of Nebraska-Lincoln
Janice Clements, PhD, Johns Hopkins Univ. and School of Medicine
Robert L. Hendricks, PhD, Univ. of Pittsburgh
Robert A. Lamb, PhD, ScD, Northwestern Univ.
Peter Palese, PhD, Mount Sinai School of Medicine

2007

Michael Belshan, PhD, Creighton University
John E. Johnson, PhD, The Scripps Research Institute
Stanley M. Lemon, M.D., Univ. of Texas
Jay A. Nelson, PhD, Oregon Health & Science Univ
Nancy Raab-Traub, PhD, Univ. of North Carolina-Chapel Hill

2008

Paul Friesen, PhD, Univ. of Wisconsin-Madison
Don Ganem, M.D., Univ. of Cali., San Francisco
Peter M. Howley, PhD, Harvard Medical School
T. Jack Morris, PhD, Univ. of Nebraska-Lincoln
Charles M. Rice, PhD, The Rockefeller Univ.

2009

Jim Carrington, PhD, Oregon State University
Diane E. Griffin, M.D., PhD, Johns Hopkins Bloomberg School of Public Health
Thomas Shenk, PhD, Princeton University
James L. Van Etten, PhD, Univ. of Nebraska-Lincoln
Reed B. Wickner, PhD, National Institutes of Health

2010

Lynn Enquist, PhD, Princeton University
Kamel Khalili, PhD, Temple University
Edward Mocarski, PhD, Stanford University
Lee Ratner, M.D., PhD, Washington Univ. St. Louis
Charles Wood, PhD, Univ. of Nebraska-Lincoln

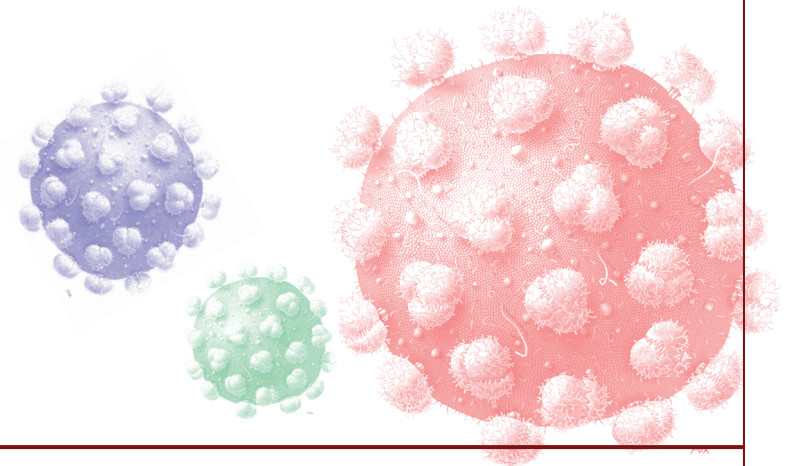
2011

Paul G. Ahlquist, PhD, Univ. of Wisconsin-Madison
Shilpa Buch, PhD, Univ. of Nebraska Med. Center
Adolfo Garcia-Sastre, PhD, Mount Sinai School of Medicine
C. Cheng Kao, PhD, Indiana Univ. Bloomington
David M. Knipe, PhD, Harvard Medical School

2012

Terence S. Dermody, PhD, Vanderbilt University School of Medicine
Shou-Wei Ding, PhD, University of California, Riverside
Grant McFadden, PhD, University of Florida
Vincent R. Racaniello, PhD, Columbia University Medical Center

- 11:30 **Leonard Mindich, PhD**
Genomic packaging and the temporal control of gene expression of bacteriophage phi 6
- 12:30 PM Luncheon—Ball Room
- 1:30 **Robert Siliciano, MD, PhD**
Update of efforts to cure HIV infection
- 2:30 Break
- 3:00 **W. Ian Lipkin, MD**
Small game hunting
- 4:00 Poster Session—Regency Suite
Wine and Cheese Reception

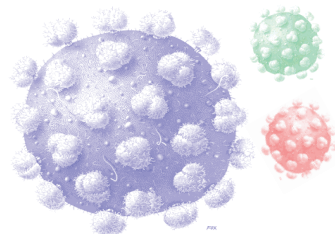


The Thirteenth Annual Symposium in Virology is sponsored by the Nebraska Center for Virology (NCV), the 3M Foundation, and the NE-INBRE. NCV and NE-INBRE are funded by NIH Grant P30GM103509 from the COBRE and INBRE programs of the National Center for Research

Fernando A. Osorio DVM, PhD, DACVM
Professor
School of Veterinary and Biomedical
Sciences
Nebraska Center for Virology
University of Nebraska-Lincoln



Dr. Osorio is a Professor at the UNL's School of Veterinary Medicine and Biomedical Sciences and a member of the Nebraska Center for Virology. A veterinarian graduated at the University of Buenos Aires (Argentina), Osorio obtained MS and PhD degrees in Veterinary Microbiology at Iowa State University. He joined the faculty of the University of Nebraska in 1984. Between 1992 and 1993 he worked for the World Health Organization/Pan-American Health Organization directing the Reference Laboratory for the Americas at the Pan-American Foot-and-Mouth Disease Center in Rio de Janeiro, Brazil. Since then Dr. Osorio remained very active, both as a UNL faculty member and a senior Fulbright Scholar, researching in veterinary virology in several Latin-American countries. Osorio's primary research focuses on pathogenesis and immune response to swine viruses. His initial research at UNL was on latency of Pseudorabies, caused by porcine herpesvirus-1. Dr Osorio's current major research focus is on immunopathogenesis and reverse vaccinology of Porcine Reproductive & Respiratory Syndrome virus (PRRSV) which causes an estimated \$800 million in losses to swine producers in the U.S. each year. He is a Diplomate of the American College of Veterinary Microbiologists and a member of the American Association of Microbiology, the American Society for Virology and the European Veterinary Virology Society.



W. Ian Lipkin PhD
John Snow Professor of
Epidemiology and Director
Center for Infection and Immunity
Mailman School of Public Health



Professor of Pathology
and Neurology
College of Physicians & Surgeons
Columbia University

W. Ian Lipkin is the John Snow Professor of Epidemiology, Professor of Neurology & Pathology, and Director of the Center for Infection and Immunity (CII) at Columbia University. A graduate of Sarah Lawrence College, he obtained his MD at Rush Medical College, Medicine Residency at the University of Washington, Neurology Residency at the University of California San Francisco, and Fellowship in Microbiology and Neuroscience at The Scripps Research Institute. His contributions include the first use of purely molecular methods to identify an infectious agent; implication of West Nile virus as the cause of the encephalitis in North America in 1999; invention of MassTag PCR and the first panmicrobial microarray; first use of deep sequencing in pathogen discovery; and the discovery and molecular characterization of more than 500 viruses. His honors include the following: Pew Scholar in the Biomedical Sciences, Japanese Human Science Foundation Visiting Professor, Columbia University Visiting Bruenn Professor, American Society of Microbiology Foundation Lecturer, Ellison Medical Foundation Senior Scholar in Global Infectious Disease, Fellow of the NY Academy of Sciences, Distinguished Lecturer of the National Center for Infectious Diseases, Fellow of the American Society for Microbiology, John Courage Professor, National University of Singapore, Kinyoun Lecturer NIH, Fellow of the Wildlife Conservation Society, Fellow of the American Association for the Advancement of Science, Member of the Association of American Physicians and Member of the NIH Advisory Committee to the Director.



Robert Siliciano, MD, PhD
Professor of Medicine and
Molecular Biology and Genetics
John Hopkins University School
Of Medicine, & Investigator
Howard Hughes Medical Institute



Dr. Robert F. Siliciano is a member of the Howard Hughes Medical Institute and a Professor of Medicine and Molecular Biology and Genetics at the Johns Hopkins University School of Medicine. In 1995, his laboratory provided the first demonstration that latently infected memory CD4+ T cells were present in patients with HIV-1 infection. He went on to characterize this latent reservoir and to show that latently infected cells persist even in patient on prolonged highly active antiretroviral therapy (HAART). These studies indicated that eradication of HIV-1 infection with HAART alone would never be possible, a finding which led to a fundamental change in the treatment strategy for HIV-1 infection. This latent reservoir is now widely recognized as the major barrier to curing HIV-1 infection and is the subject of an intense international research effort. Dr. Siliciano's laboratory has gone on to characterize the different forms of HIV-1 that persist in patients on HAART and to explore potential strategies for eradicating the virus from this and other reservoirs. In addition, Dr. Siliciano's recent work has provided a theoretical foundation for the success of antiretroviral therapy in controlling HIV-1 replication.

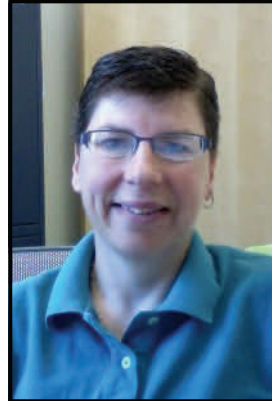
Dr. Siliciano did his undergraduate work at Princeton University and then received his MD and PhD degrees from Johns Hopkins. After a postdoctoral fellowship at Harvard Medical School, he joined the faculty at Johns Hopkins. He is the recipient of a Distinguished Clinical Scientist Award from the Doris Duke Charitable Foundation and two NIH Merit Awards. In 2002, he became an Investigator in the Howard Hughes Medical Institute. He is a past Chairman of the NIH AIDS and Related Research Study Section. He currently directs the MD-PhD Program at Johns Hopkins. In 2008, he received a major award in AIDS research, the Bernard N. Fields Memorial Lecture at the Conference for Retroviruses and Opportunistic Infections.

Daniel L. Rock, PhD
Professor
Department of Pathobiology
College of Veterinary Medicine
University of Illinois at Urbana-
Champaign



Daniel L. Rock is a Professor in the Department of Pathobiology, College of Veterinary Medicine, University of Illinois Urbana-Champaign. His research, using comparative and functional genomic approaches together with animal disease models to define and characterize the role of specific viral and host genes in infection and immunity has focused on the molecular mechanisms underlying virulence and host range of high-consequence viral diseases such as African swine fever, classical swine fever, foot-and-mouth disease, and exotic poxviruses. Dr. Rock obtained a BSE degree from Drake University in Des Moines, a Ph.D. in Veterinary Microbiology from Iowa State University and postdoctoral research training at the Wistar Institute in molecular virology. He has held faculty positions at North Dakota State University, the University of Nebraska-Lincoln and has served as Research Leader of Exotic Viral Diseases at the Plum Island Animal Disease Center USDA, Agricultural Research Service in New York (1989-2005) where he developed and led major research initiatives on foreign animal diseases, pathogen functional genomics and rapid pathogen detection.

Deb Brown, PhD
Assistant Professor
School of Biological Sciences
Nebraska Center for Virology
University of Nebraska-Lincoln



Dr. Deb Brown is an Assistant Professor in the School of Biological Sciences and a member of the Nebraska Center for Virology. Dr. Brown received her PhD at the University of Rochester Medical Center in Rochester, NY and studied under Dr. Suzy Swain as a post-doctoral fellow at the Trudeau Institute. In 2008, she accepted a faculty position at UNL and currently teaches the undergraduate/graduate Immunology course. Dr. Brown's research has established that CD4 T cells acquire perforin-mediated cytotoxicity (CD4 CTL) *in vivo* as part of a multifunctional activation program that contributes to protection against lethal influenza infection. The main focus of Dr. Brown's research is to understand how CD4 T cells are activated, differentiate into effectors and provide protection against viral infections, with the ultimate goal of designing vaccines that provide broad, universal protection against emerging pathogens. Dr. Brown's research group has demonstrated that the cytokine IL-2 is necessary to induce CTL activity in CD4 cells, but high inflammatory conditions can overcome the requirement for this cytokine. Currently, the lab aims to understand how vaccination shapes the T cell response and promotes survival against lethal influenza infection. Ongoing work is directed at identifying the inflammatory mediators important for generating CD4 CTL in the lung and determining whether CD4 CTL are required for protection in the vaccine model. Dr. Brown is a member of the American Association of Immunologists (AAI) and American Society for Microbiology (ASM). She has been awarded junior faculty travel grants in 2010, 2011 and 2013 for presentations at the AAI national meetings.

Leonard Mindich, PhD
Public Health Research
Institute Center
New Jersey Medical School
Rutgers Biomedical
and Health Sciences



My initial scientific interest was in bacteriophage studies. However I spent a number of years studying microbial cell division and membrane biology. In 1973 I read with great interest a series of papers from the University of Nebraska describing the isolation of a bacteriophage called phi6 that had a lipid containing membrane and a genome of three double-stranded RNA segments. From that time on, I have pursued the study of the biology of phi6 and other members of its family, the Cystoviridae. In particular, my laboratory has been interested in the mechanisms involved in the precise packaging of segmented viral genomes and the temporal control of gene expression. In both cases, the mechanisms have involved unique and interesting structural considerations.

