

## The Nebraska Center for Virology: Research, Training, Education and Outreach

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In the ten years since its inception, the Nebraska Center for Virology (NCV) has extended its reach into new frontiers of research and new areas of the globe. Established in 2000 as a National Institutes of Health Center of Biomedical Research Excellence, the NCV won a \$10.6 million, a five-year renewal grant from NIH/National Center for Research Resources in 2005, and was recently approved and funded for another five years of funding to support the infrastructure of the Center.

The NCV provides infrastructure support for researchers at the University of Nebraska-Lincoln (UNL), the University of Nebraska Medical Center (UNMC), and Creighton University – Nebraska's three major biomedical research institutions.

Research carried out in the center focuses on viral diseases of human, animal, and plant, which include AIDS, neurodegenerative diseases, and malignancies. Researchers in the Center study a number of different viruses, ranging from HIV, herpesviruses to Porcine Reproductive and Respiratory Syndrome virus and the Chlorella viruses. The Center has 37 faculty members and is directed by Dr. Charles Wood, a molecular virologist with co-directors Drs. Howard Gendelman and James Van Etten, and Associate Director Dr. Clinton Jones.

There were a number of new scientists hired in the past seven years, and they have expanded NCV research

into the study of human papilloma virus, a major cause of cervical cancer; the Epstein Barr virus and vesicular stomatitis virus, and new arenas of HIV research, including the evolution and transmission of the widely-spread subtype C HIV-1 in Africa and creation of a novel mouse model that can be used in vaccine development.

The Center also is broadening its international work. Wood and his colleagues conduct extensive research programs in Zambia focusing on the transmission of HIV from mothers to their infants, the relationship between HIV and Kaposi's sarcoma associated herpesvirus, which is linked to cancer, and the evolution of HIV. As a part of this work, the Nebraska team has built a laboratory and clinic at the Teaching Hospital of the University of Zambia and developed close ties with scientists there.

Training the next generation of virologists, both in the U.S. and abroad,

is a critical component of the NCV's mission and continues to grow. There is an ongoing highly successful program funded by the Fogarty International Program to train Zambian and Chinese researchers on AIDS and associated cancer viruses. The program brings researchers to UNL and UNMC for training and provides in-country workshops. Training focuses on laboratory techniques, clinical disease management and behavioral interventions. The NCV also has established a research training program in comparative viral pathogenesis, funded by NIH, to recruit and train U.S. graduate students, particularly those from minority and underrepresented groups.

The NCV's educational mission extends beyond the scientific community. The Center's work on HIV evolution is included in a National Science Foundation-funded project called Explore Evolution that includes a permanent exhibit at the Nebraska State Museum, traveling museum exhibits that are touring the U.S., and an outreach program for 4-H students in five states. Another project, World of Viruses, recently funded by the NIH Science Education Partnerships Award program, is a multi-faceted educational outreach program that will feature NCV research in public radio documentaries and in "flexhibits" distributed through public libraries and to 4-H programs in 22 states.