

# Nebraska Center for Virology Membership

## OVERVIEW

The goal of the Nebraska Center for Virology (NCV) program is to create a multidisciplinary environment that is truly greater than the sum of its individual members. Evaluation and review of membership is critical to preserving these characteristics. Membership in the NCV brings significant benefits and imposes individual responsibilities.

## BENEFITS OF NCV MEMBERSHIP

1. Access to developmental funds for pilot projects through the NCV grant. A budget for developmental funds will be proposed in the NCV competitive renewal.
2. Inclusion in the NCV information loop including notices of seminars, symposiums, and other virology meetings, as well as NCV publications such as the Annual Progress Report.
3. Access to CVs for postdocs seeking positions and potential postdoctoral fellowship and undergraduate support.
4. Opportunities for leadership roles within the NCV as a Project Leader, as a mentor to junior investigators, as a mentor for Undergraduate Summer Research Experience in Virology students, or on any special committees as necessary.
5. Junior investigators benefit from the mentoring of senior investigators.
6. Exposure to other virologists' research and the potential to develop collaboration.
7. Access to shared resources and core facilities of the NCV (see Core Facilities section).
8. Opportunities to invite virology researchers from other institutions to present at NCV seminars.
9. Participation in training grants, special program projects and the NCV grant renewal.
10. Opportunities for scientific interaction with renowned national researchers.

## RESPONSIBILITIES

1. Willingness to interact scientifically with other NCV members. Inter-programmatic and intra-programmatic collaboration is one of the key mechanisms used by our funding agencies and our external reviewers to measure our center's intellectual environment.
2. Provide service to the NCV through participation on NCV committees and /or through public outreach.
3. Attend scheduled functions and the monthly meeting of the NCV.
4. Maintain and provide a current CV, bibliography, and NIH Biosketch along with requested reports of NCV-funded projects to NCV administration annually, or as requested.

## MEMBERSHIP CRITERIA

All membership criteria must be met to retain membership status.

**Member:**

1. Active participant in NCV activities.
2. A faculty member of the University of Nebraska – Lincoln, University of Nebraska Medical Center, or Creighton University with a background in virology or involvement with a core facility.
3. Continuous active scholarly activity as evidenced by receipt of ongoing peer-reviewed funding and by publishing in an area of virology in peer-reviewed journals (funding requirement may be waived for junior faculty members in the first three years).
4. Clear and sustained commitment to research and education within the NCV institutions.

**Associate Member:**

1. Health professionals and/or clinical or basic research scientists holding a faculty or staff appointment at the University of Nebraska – Lincoln, University of Nebraska Medical Center, or Creighton University.
2. Demonstrate an interest in virology research and/or educational programs at the University of Nebraska – Lincoln, University of Nebraska Medical Center, or Creighton University.

**Affiliate Member:**

1. Faculty or staff appointment outside the NCV institutions.
2. Demonstrate an interest in virology research and/or education and a willingness to participate in collaborative clinical, transnational or basic research, and/or educational programs of the NCV.

**MEMBERSHIP APPLICATION PROCESS**

To apply, interested applicants should submit the following for review by the NCV Executive Council to: NCV Membership, University of Nebraska – Lincoln, E249A Beadle, 1901 Vine Street, Lincoln, NE 68588-0666.

1. Letter expressing interest in joining NCV.
2. CV
3. Paragraph on research interests.

**CORE FACILITIES SUPPORTED BY THE NCV**

Use of the Core facilities is a major benefit of participation in the NCV. Each year NCV supports shared services and facilities that are accessed by NCV members for the conduct of their research. Ongoing financial support for NCV core facilities in 2002-2003 was \$210,000. Members will be able to use the core facilities free-of-charge with the cost covered by the support from NCV. We anticipate that new cores will be added, as needs arise. The core facilities and the services that they can provide are:

**Microscopy Core**

Dr. You (Joe) Zhou  
402.472.5935(office) 472.5942(lab)  
[yzhou2@unl.edu](mailto:yzhou2@unl.edu)

**Activity/Service/Equipment Available:**

- Confocal laser scanning microscope
- Olympus FM (upright)
- Nikon FM (inverted)
- Laser-Capture Micro-dissection system (LCM)
- Immunohistochemical processing
- Image analysis
- Photo-printer (Codonics) for high quality color prints
- Transmission electron microscope (TEM)
- Variable Pressure SEM
- Field Emission SEM
- Sample preparation, sectioning for TEM and SEM
- Supply of antibody-conjugates
- Expertise in cell biology and microscopy for grant proposals
- Training for graduate students and postdocs in microscopy

**Structural/Protein Core**

Dr. Ronald Cerny  
402.472.6020  
[rcerny1@unl.edu](mailto:rcerny1@unl.edu)

**Activity/Service/Equipment Available:**

- Exact Mass Measurement – Electron Ionization MS
- Low Resolution Fast Atom Bombardment (FAB) MS
- Exact Mass Measurement – FAB MS
- Direct Injection (single component) Electrospray Ionization (ESI)
- Liquid Chromatography – Mass Spectrometry (LC/MS)
- Matrix Assisted Laser Desorption Ionization MS (MALDI) Peptide
- Matrix Assisted Laser Desorption Ionization MS (MALDI) Protein
- 2D gel Image Analysis
- Robotic Gel Excision
- In-gel enzymatic digestion (1D and 2D Gels)
- Protein Identification (LC/MS-MS and database searching)
- Mapping Post-Translational Modifications
- Assistance in the development of LC/MS methods for biomolecules

**Bioinformatics Core**

Dr. Simon Sherman  
402.559.4497  
[ssherm@unmc.edu](mailto:ssherm@unmc.edu)

**Activity/Service/Equipment Available:**

- **Molecular Modeling** - Protein structure/property analysis; conformational analysis of small molecules; molecular dynamic simulations; QSAR analysis;

molecular docking; secondary and tertiary structure prediction; homology modeling of proteins; protein engineering; NMR analysis of peptides.

- **DNA Microarray Analysis** - Image analysis: optimization of data extraction with variety of software tools; customization for specific applications. Statistic inference: normalization/filtering/visualization; cluster analysis; data transformation; data integration.
- **Genetic Sequence Analysis** - Sequence alignments and consensus calculation; RNA folding and secondary structure prediction; phylogenetic analysis; searching for sequence-structure-function correlations; pattern analysis in DNA and protein sequences; gene finding and exon, intron, start and stop codon location; promoter region searching; gene identification and prediction; genome mapping; cloning project fragment assembly.
- **Immunoinformatics** – Potential antigenic epitope finding by predictions of proteosomal cleavage sites and binding to MHC.
- **Database Developing and Mining** – Database design; data warehouses.

### **The Eppley Cancer Center/DNA Microarray Core**

Dr. David Kelly

402.559.9157

[dkelly@unmc.edu](mailto:dkelly@unmc.edu)

#### **Activity/Service/Equipment Available:**

- This core can provide the resources, infrastructure and support to allow the rapidly evolving technology of DNA microarrays to be applied to a wide spectrum of biomedical research. The Core is a centralized state-of-the-art facility that offers expertise in the design, production, use, and analysis of DNA microarrays.
- Human Oligonucleotide Arrays
  - Set of two 10K chips that interrogate the full 18K+ Compugen Human oligonucleotide
  - 12.5K chip interrogating only known genes
- Mouse Oligonucleotide Arrays - two 11.5 K chips that interrogate the full 22K Compugen Mouse oligonucleotide set
- RNA isolation and purification
- Fluorescent probe synthesis, hybridization, washing and scanning
- Data acquisition and analysis (including image segmentation, normalization, ratio determinations and gene selection)
- MagnaSpotter robot
- ScanArray 4000 confocal laser scanner
- Beckman Coulter Biomek FX liquid handling system

### **Flow Cytometry Core**

TBA

## **RESOURCE OVERVIEW OF THE NEBRASKA CENTER FOR VIROLOGY**

**Executive Council** – The Executive Council consists of the following:

**Director:** Dr. Charles Wood  
402.472.4550  
[cwood1@unl.edu](mailto:cwood1@unl.edu)

**Co-Directors:** Dr. Howard Gendelman  
402.559.8920  
[hlegendel@unmc.edu](mailto:hlegendel@unmc.edu)

Dr. James Van Etten  
402.472.3168  
[jvanetten@unlnotes.unl.edu](mailto:jvanetten@unlnotes.unl.edu)

**Assoc. Director:** Dr. Clinton Jones  
402.472.1890  
[cjones@unlnotes.unl.edu](mailto:cjones@unlnotes.unl.edu)

**Project Leaders** - The project leaders consist of the four original principal investigators:

**Project 1:** Dr. Jialin Zheng  
402.559.5656  
[jzheng@unmc.edu](mailto:jzheng@unmc.edu)

**Project 2:** Dr. Clinton Jones  
402.472.1890  
[cjones@unlnotes.unl.edu](mailto:cjones@unlnotes.unl.edu)

**Project 3:** Dr. Robert Weldon  
402.472.3044  
[rweldon2@unl.edu](mailto:rweldon2@unl.edu)

**Project 4:** Dr. Richard Bessen  
402.280.3072  
[rbessen@creighton.edu](mailto:rbessen@creighton.edu)

### **External Advisory Committee**

The EAC consists of the following renowned virologists:

Dr. Lynn Enquist Princeton University 609.258.2415 <a href="mailto:lenquist@molbio.princeton.edu">lenquist@molbio.princeton.edu</a>	<a href="mailto:kkhalili@astro.temple.edu">kkhalili@astro.temple.edu</a>
Dr. Kamel Khalili Temple University 215.204.0678	Dr. Edward Mocarski Stanford University 650.723.6435 <a href="mailto:mocarski@stanford.edu">mocarski@stanford.edu</a>
	Dr. Lee Ratner

Washington University in St. Louis  
314.362.8836

[lratner@im.wustl.edu](mailto:lratner@im.wustl.edu)

*This project is supported by NIH Grant Number P20 RR15635 from the COBRE Program of the National Center for Research Resources.*