

**Fifth Noble Foundation Workshop in Virus Evolution  
October 2-5, 2008**

**Thursday October 2**

Registration	2-6 pm	Conference Center
Dinner	6 pm	Conference Center
<b>Session I</b>	<b>Quasispecies and their consequences</b>	Kruse Auditorium
7:30-7:35	Welcome	Marilyn Roossinck
7:35-8:05	Population diversity of picornaviruses	Marco Vignuzzi
8:05-8:20	Using an artificial quasispecies to monitor poliovirus trafficking barriers in neural circuits.	Julie Pfeiffer
8:20-8:35	Mutation and fitness characteristics of a highly polymorphic quasispecies	Jim Bull
8:35-8:50	Novel combination antiviral therapy that targets the HIV-1 mutation rate	Louis Mansky
8:50-9:05	Poliovirus codon deoptimization as a potential strategy for rational design of stable RNA virus vaccines.	Cara Burns
9:05-9:20	Discussion	
9:30-	drinks and snacks	Conference Center

**Friday October 3**

Breakfast	7:30-8:30	Conference Center
<b>Session II</b>	<b>From Experimental Evolution to the Real World</b>	Kruse Auditorium
9:00-9:30	Experimental evolution of viruses—exploring the interface of adaptation, structure, and function.	Holly Wichman
9:30-9:45	Population dynamics of beneficial mutations in a bacteriophage adapting to high temperature.	Craig Miller

- 9:45-10:00 Plant virus evolution: Cucumber mosaic virus provides an ideal model system to study mutation frequencies, recombination and fixation of an RNA virus. Justin Pita
- 10:00-10:15 In vivo viral fitness assays used to investigate virulence trade-offs in an acute rhabdovirus of rainbow trout. Gael Kurath
- 10:15-10:30 The genetics of adaptation in constant and variable environments: molecular basis of fitness and virulence evolution in a phytovirus. Froissart Remy
- 10:30-11:00 Coffee break
- 11:00-11:15 Genome sequencing approach to determine the ecology and evolution of plant RNA viruses. Prasenjit Saha
- 11:15-11:30 On the road to viral emergence—towards understanding how canine parvovirus jumped the species barrier Karin Hoelzer
- 11:30-11:45 Recent analysis of low pathogenicity H5 avian influenza viruses in live bird markets in the U.S. David Suarez
- 11:45-12:00 The emergence of new strains of Watermelon mosaic virus in south—eastern France: evidence for limited spread but rapid local population shift. Cecile Desbiez
- 12:00-12:15 Genetic variation impacts virus evolution in a black-hole sink. John Dennehy
- 12:15-12:30 Discussion
- 12:30 Lunch Conference Center
- Session III Models and Methods** Kruse Auditorium
- 4:30-5:00 Models of viral evolution motivated by experimental observations. Susanna Manrubia
- 5:00-5:15 A microarray based assay for studying viral evolution. Adam Lauring
- 5:15-5:30 Assessing phylogenetic accuracy using experimental phylogenetics. Robert McBride
- 5:30-5:45 One can be enough: a test of the independent action hypothesis using baculoviruses. Mark Zwart

- 5:45-6:00 Evidence for polymerase-independent mutation in single-stranded DNA viruses  
Siobain Duffy
- 6:00-6:15 Phage orthologous groups: towards a renewable resource  
David Kristensen
- 6:15-6:30 Discussion
- 7:30 Dinner  
Conference Center

### Saturday October 4

- Breakfast 7:30-8:30  
Conference Center
- Session IV **Driving forces in evolution: Recombination and Bottlenecks**  
Kruse Auditorium
- 9:00-9:30 Recombination's contributions to retroviral genetic variation.  
Alice Telesnitsky
- 9:30-9:45 Studies of populations of recombinant cucumoviruses that appear within an experimental time frame.  
Mark Tepfer
- 9:45-10:00 The loss-of-function alleles of the RNA interference (RNAi) genes affect RNA-RNA recombination of brome mosaic bromovirus in *Arabidopsis thaliana*.  
Jozef Bujarski
- 10:00-10:15 Poliovirus inter-host transmission bottlenecks and their effects on viral fitness.  
Sharon Kuss
- 10:15-10:30 Effect of the mode of transmission on the evolution of Cucumber mosaic virus (CMV) virulence on *Arabidopsis thaliana*.  
Israel Pagán
- 10:30-11:00 Coffee break
- 11:00-11:15 Balancing selection for replication and horizontal transmission in a plant RNA virus  
William Schneider
- 11:15-11:30 Natural multiplicity of infection of plant cells (MOI) by genomes of Cauliflower mosaic virus populations.  
Stéphane Blanc
- 11:30-11:45 Comparison of the multiplicity of infection of cellular infection for two unrelated viruses in a panel of host plants  
Serafin Gutierrez

**Session V Virus Evolution for a Long Long Time**

- 11: 45-12:15 Diversification of the Picornavirus-like superfamily antedates the radiation of eukaryotes. Valerian Dolja
- 12:15-12:30 The co-divergence of Mastreviruses with host plants. Ulrich Melcher
- 12:30 Lunch Conference Center

**Session VI Virus-host interactions in evolution**

- 4:30-5:00 Viruses as symbionts Frank Ryan
- 5:00-5:15 Viruses as mutualists: virus infection improves plant drought tolerance. Ping Xu
- 5:15-5:30 Viruses as commensals: persistent plant viruses. Marilyn Roossinck
- 5:30-5:45 Virus adaptation by manipulation of host's gene expression. Santiago Elena
- 5:45-6:00 Discussion
- 6:00-6:15 Conference Wrapup Marilyn Roossinck
- 6:30 Cocktails Conference Center
- 7:30 Dinner Conference Center

**Sunday October 5**

- 7:30-9:00 Breakfast Conference Center

Farewell and happy travels

(sack lunches will be available for travelers)

## Posters

- A short survey of fungal and viruses coupled with Sorghastrum and Ruellia plants growing in Tallgrass Prairie  
Mustafa Morsey
- Branching Out: Assessing Diversity and Host Range in the Microviridae  
Zev Kronenberg
- Computational Modeling of RNA Viral Evolution in Cell Culture  
Tanya Kostova Vassilevska
- Defining determinants of replicative fitness in the HIV-1 V3 loop  
Abigail Smith
- Exploring the mechanisms of thermal tolerance in the three-way symbiosis involving a fungus, a virus and a plant  
James Susaimuthu
- From Hypo- to Hyper-suppression: Effect of Amino Acid Substitutions on the RNA Silencing Suppressor Activity of Tobacco etch virus HC-Pro  
Clara Torres-Barcelo
- Passage of West Nile virus and St. Louis encephalitis virus in vivo in natural hosts reveals evolutionarily significant virus characteristics  
Alex Ciota
- Pushing HIV to the brink of extinction: Dual mechanism for mutagenic ribonucleosides in decreasing viral infectivity and inducing HIV mutagenesis  
Louis Mansky
- Recombination Frequencies in Cucumber Mosaic Virus (CMV)  
Viktoriya Morris
- The pleiotropic cost of host-range expansion in Tobacco etch potyvirus  
Sandra Patricia Agudelo  
Romero