Duke University's
Conference on Mathematical Immunology

Schedule

All Talks are in Jones 143

Monday, April 24

HIV and Infection

8:00 – 9:00 Coffee, Pastries, and Registration
143 Jones Building

9:00 – 9:45 Sally Blower
A Tale of Two Futures: HIV and Antiviral therapy in San Francisco

9:45 – 10:15 Elissa Swartz
Effect of HAART on Incidence of HIV−Associated Nephropathy

10:15−1045 **Break**

10:45 – 11:15 Herbert Struemper
Modeling T Cell Dynamics Following Antiretroviral Therapy

11:15−12:00 Patrick Nelson
Patient Specificity and the Difference in the Half−life of Productively Infected T−Cells

12:00−2:00 **Lunch**

2:00−2:45 Jorge V. Hernandez
Models of Chagas Disease

2:45−3:15 Vitaly Ganusov
The Effect of Heterogeneity on the Evolution of Parasite Virulence

4:30−6:00 **Reception and Poster Session**
Mathematics Lounge, Physics Building

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Tuesday, April 25

Immunology and Vaccines

8:00 – 8:30 Coffee and Pastries
143 Jones Building

8:30 – 9:15 Byron Goldstein
Modeling Peptide−MHC Complex/T Cell Dynamics in the Immunological Synapse

9:15– 9:45 Can Kesmir
A First Attempt on Spatial Modeling of Germinal Center Reactions

9:45 – 10:15 Greg Sempowski
Effect of Thymectomy on Human Peripheral T Cell Pools

10:15−1045 **Break**

10:45−11:15 Steve Kleinstein
Toward Quantitative Simulation of Germinal Center Dynamics: Biological and Modeling Insights from Experimental Validation

11:15−12:00 Carl Simon
Vaccine Models

12:00−2:30 **Lunch**

2:30−3:15 Rustom Antia
Modeling Immune Memory and the Turnover of Memory Cells

3:15−3:45 Sergei Pilyugin
Estimating Birth and Death of Immune Cell Populations Using Cell Cycle Based Models

5:30−9:30 **Conference Dinner at the Regal University Hotel**

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Wednesday, April 26

Genetics and Immunology

8:00 – 8:30 **Coffee and Pastries**
143 Jones Building

8:30 – 9:15 Tom Kepler
Evolution and Somatic Hypermutation: The Coevolution of Subtle Biases

9:15– 9:45 Lindsay Cowell
The Nucleotide−replacement Spectrum Under Somatic Hypermutation Exhibits Mircosequence Dependence that is Strand−Symmetric and Distinct from that Under Germline Mutation

9:45 – 10:15 Michaela Oprea
Condon Usage Bias Directs Somatic Hypermutation to the Complementarity−determining regions and Away from the Framework Regions of Antibody Genes

10:15−1045 **Break**

10:45−11:15 Maureen Sartor
When to Switch Drugs: A Probabilistic Model for Drug Resistance in HIV Drug Therapy

11:15−12:00 Garnett Kelso
Population Dynamics and Genetics in Lymphocytes