SANTA FE INSTITUTE

Integrating Critical Phenomena and Multi-Scale Selection in Virus Evolution

Agenda

November 19 – 20, 2018
Noyce Conference Room

Monday, November 19, 2018

8:00	Hotel Santa Fe Shuttle departs to Santa Fe Institute
8:15 – 9:00	Breakfast
9:00 – 9:15	Introduction to the WG topic, **Santiago F. Elena** *(I^2SysBio-CSIC/UV and Santa Fe Institute)*
9:15 – 9:45	*Single-cell analysis of enterovirus replication dynamics*, **Craig E. Cameron** *(Pennsylvania State University)*
9:45 – 10:15	*Systems biology of bacteriophage T7,* **Claus O. Wilke** *(University of Texas Austin)*
10:15 – 10:30	Coffee Break
10:30 – 11:00	*Emergent population dynamic arising from collections of heterogeneously infected cells,* **Katia V. Koelle** (*Emory University*)
11:00 – 11:30	*Arbovirus population dynamics during mosquito-human transmission cycle,* **Raúl Andino** *(University of California San Francisco)*
11:30 – 12:00	*Mutidimentional scaling of sequence data to infer genotype to phenotype maps of evolving viral populations,* **Marco Vignuzzi** *(Pasteur Institute)*
12:00 – 1:30	Lunch
1:30 – 2:00	*Quasispecies on adaptive multiscapes: entropy, fitness, and irreversibility in virus evolution,* **Susanna C. Manrubia** *(CBN-CSIC)*
2:00 – 2:30	*Collective dispersal in viruses,* **Rafael Sanjuán** *(I^2SysBio-UV/CSIC)*

2:30 – 3:00	Short-sighted viruses, **Katrina Lythgoe** *(University of Oxford)*
3:00 – 3:30	*Copying as creativity: The role of copy number variation in viral adaptation,* **Mark P. Zwart** *(NIOO-KNAW)*
3:30 – 4:00	*Evolutionary dynamics of influenza across multiple spatiotemporal scale,* **Katherine Xue** *(Fred Hutchinson Cancer Research Center)*
4:00 – 4:30	Tea Break
4:30 – 5:00	*Selection at multiple scales shapes the evolutionary emergence of novel pathogens,* **James O. Lloyd- Smith** *(University of California Los Angeles)*
5:15	Hotel Santa Fe Shuttle departs Santa Fe Institute back to Hotel Santa Fe
6:30	Group dinner at Casa Chimayo, 409 W. Water Street (505) 428-0391 (0.5 miles/11 minute walk)

Tuesday, November 20, 2018

8:00	Hotel Santa Fe Shuttle departs hotel to Santa Fe Institute
8:15 – 9:00	Breakfast at SFI
9:00 – 9:30	*Ecological complexity in plant-virus interactions,* **Fernando García-Arenal** (*CBGP-UPM/INIA*)
9:30 – 10:00	*Plant - virus interactions in nature: hidden diversity and influence,* **Carolyn M. Malmstrom** *(Michigan State University)*
10:00 – 10:30	*Small circular DNA viruses: The muddy viral playground of recombinant, reassortant, and highly diverse viruses*, **Arvind Varsani** (*Arizona State University*)
10:30 – 10:45	Coffee Break
10:45 – 11:15	*Viral fitness across a continuum from lysis to latency,* **Joshua S. Weitz** (*Georgia Institute of Technology*)
11:15 – 11:45	*Virus - cell interactions and the evolution of disease virulence in bacteria and cancer*, **Paul E. Turner** *(Yale University*)

11:45 – 12:15	*How does selection act on the genomic organization of viral populations?* **Christopher B. Brooke** (*University of Illinois Urbana-Champaign*)
12:15 – 1:30	Lunch
1:30 – 2:00	*The structure of immune diversity in microbial populations,* **Rachel J. Whitaker** (*University of Illinois Urbana-Champaign*)
2:00 – 2:30	*Integrating the spatial and temporal dynamics of the innate immune response to viral invasions,* **Ruian Ke** (*LANL*)
2:30 – 3:00	*Within-host dynamics of HIV including effector cell responses,* **Alan S. Perelson** (*LANL and Santa Fe Institute*)
3:00 – 4:00	*Open discussion. (i) Possibility to apply for NSF RoL EAGER or RAISE grants and (ii) possibility to write a state-of-the-art/review article for Virus Evolution,* **David C. Krakauer** (*Santa Fe Institute),* **Ricard V. Solé** *(ICREA/UPF and Santa Fe Institute) and* **Santiago F. Elena**
4:00 – 4:30	Tea break
4:30 – 5:00	Wrap-up and farewell, **Santiago F. Elena**
5:15	Hotel Santa Fe Shuttle departs Santa Fe Institute back to Hotel Santa Fe