MARINE BIOLOGICAL LABORATORY



Mobile Genetic Elements

August 31 - September 2, 2017

Woods Hole, MA, USA

Organizers:
Bill Reznikoff (MBL & U of Wisconsin)
Phoebe Rice (University of Chicago)
Irina Arkhipova (MBL)

Mobile Genetic Elements 2017 – Meeting Schedule

All talks are held in the Meigs Room, Swope Building.

Thursday, August 31, 2017

2:00 PM Check-in at Swope Conference Center, registration

2:00 PM Pre-meeting tours (sign-up needed)

4:00 PM Poster setup

5:00 PM Business meeting (Meigs Room, by invitation)

6:00 PM Dinner

Session 1: Bill Reznikoff, Chair

7:00 PM Welcome: Phoebe Rice (U. Chicago), Bill Reznikoff (MBL)

7:05 PM *Transposable elements as catalysts of convergent molecular innovation*
Invited speaker: **Cedric Feschotte** (Cornell University)

7:40 PM *The impact of endogenous retroviruses on nuclear organization in mammalian cells*
Jane Skok (New York University)

8:00 PM *Replicative transposition in eukaryotes*
Invited speaker: **Fred Dyda** (NIH/NIDDK)

8:30 PM *A novel group of self-synthesizing mobile elements in eukaryotes*
Vladimir Kapitonov (NIH/NCBI)

8:50 PM Mixer (beer/wine/munchies, Meigs Room), poster previews

Friday, September 1, 2017

7:30 AM Breakfast

Session 2: Phoebe Rice, Chair

9:00 AM *Serine transposons*
Invited speaker: **Reid Johnson** (UCLA)

9:30 AM *Crystal structure of a new single stranded DNA binding protein encoded by staphylococcal cassette chromosome mobile element*
Ignacio Mir-Sanchis (University of Chicago)

9:50 PM *Recruitment of CRISPR-Cas systems by Tn7-like transposons*
Joe Peters (Cornell University)

10:10 AM Coffee break

10:40 AM *Distributive conjugal transfer: A new paradigm for bacterial horizontal gene transfer in mycobacteria*
Invited speaker: **Keith Derbyshire** (Wadsworth Center)

11:10 AM *Domestication of a virus by Alphaproteobacteria*
Shannon Soucy (Dartmouth College)

11:30 AM *Protein splicing of a recombinase intein induced by ssDNA and DNA damage*
Christopher Lennon (SUNY at Albany)

11:50 AM Lunch

1:15 PM MBL Marine Resources Center tour – meet in front of the MRC

4:00 PM ***Poster Session**, Swope Center, Second Floor*

6:00 PM Dinner

Session 3: Cedric Feschotte, Chair

7:00 PM *Epigenetic changes and somatic retrotransposition in cellular senescence and aging*
Invited speaker: **John Sedivy** (Brown University)

7:30 PM *Applying the TIDAL program to characterize Transposon Landscapes across aging Drosophila genomes*
Nelson Lau (Boston University)

7:50 PM *Adaptive evolution leads to cross-species incompatibility in the piRNA transposon silencing machinery*
Swapnil Parhad (UMass Worcester)

8:10 AM *Transposon expression signatures in the starlet sea anemone (Nematostella vectensis) during development*
Alex Evsikov (University of South Florida)

8:30 PM *A new general mechanism of recognition and silencing of repetitive DNA*
Eugene Gladyshev (Harvard University)

8:50 PM Free evening (at a local establishment)

Saturday, September 2, 2017

7:30 AM Breakfast; pick-up box lunches if ordered

Session 4: Irina Arkhipova, Chair

8:50 AM *The birth and demise of composite transposons: the case of resistance to the last resort antibiotic colistin*
Invited speaker: **Michael Chandler** (CNRS/Georgetown U.)

9:20 AM *IS26-mediated genome rearrangement in Klebsiella pneumoniae during chronic infection*
Erik Snesrud (Walter Reed Army Research Institute)

9:40 AM *Structural interrogation by SHAPE and molecular simulation of a group II intron RNP*
Xiaolong Dong (SUNY at Albany)

10:00 AM Coffee break; Check-out

10:30 AM *Amino-methylation as an epigenetic mark in rotifers*
Fernando Rodriguez (MBL)

10:50 AM *A non-canonical base-modifying methyltransferase of bacterial origin in a eukaryote*
Irina Yushenova (MBL)

11:10 AM *From deep phylogeny to species complexes: Life history characteristics and the evolution of genomic repetitive elements in ferns*
Amanda Grusz (University of Minnesota Duluth)

11:30 AM *Characterization of non-canonical LTR retrotransposons in plants*
Shujun Ou (Michigan State University)

11:50 AM Concluding remarks: Irina Arkhipova

12:00 PM Lunch (if no box lunch selected)

1:00 PM End of meeting

List of Poster Presenters

A system for study of RecA-independent exchange applied to E. coli Rpn family paralogs
Elisabeth Raleigh (NEB)

The effects of post-transcriptional modifications on group II intron mobility
Justin Waldern, Olga Novikova (SUNY at Albany)

Mycobacterial intein in DnaB as stress-responsive element
Danielle Kelley (SUNY at Albany)

Genomic insights into the pattern of transposable element proliferation in Drosophila S2 cells
Shunhua Han (University of Georgia)

Exploring the mechanisms of LINE-1 inhibition by nucleoside reverse transcriptase inhibitors
Jocelyn Newton (Brown University)

Drosophila PAF1 modulates PIWI/piRNA silencing of transposon targets
Reazur Rahman, Nachen Yang (Brandeis U. & Boston U.)

The Retrotransposon Storm: Endogenous retroviruses as infectious agents in the brain?
Richard Keegan (Stony Brook University)

A novel genetic reporter of gypsy retrotransposon replication
Yung-Heng Chang (Stony Brook University)

LTR_retriever: a highly accurate and sensitive program for identification of LTR retrotransposons
Shujun Ou (Michigan State University)

Toward the next generation of repeats detection tools
Hani Girgis (University of Tulsa)

Functional properties of the unique N- and C-terminal domains in domesticated RVT reverse transcriptases
Irina Yushenova (MBL)

Identifying extrachromosomal intermediates of transposition in bdelloid rotifers
Laura Swain, **Irina Yushenova, Irina Arkhipova** (U. of Chicago & MBL)

Transposable element dynamics and nervous system reduction in a tiny parasitoid wasp
Brandon Lê, Fernando Rodriguez (Brown University & MBL)

List of Registrants

Last Name	First Name	Company Name	E-Mail Address	Position
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Lucigen
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