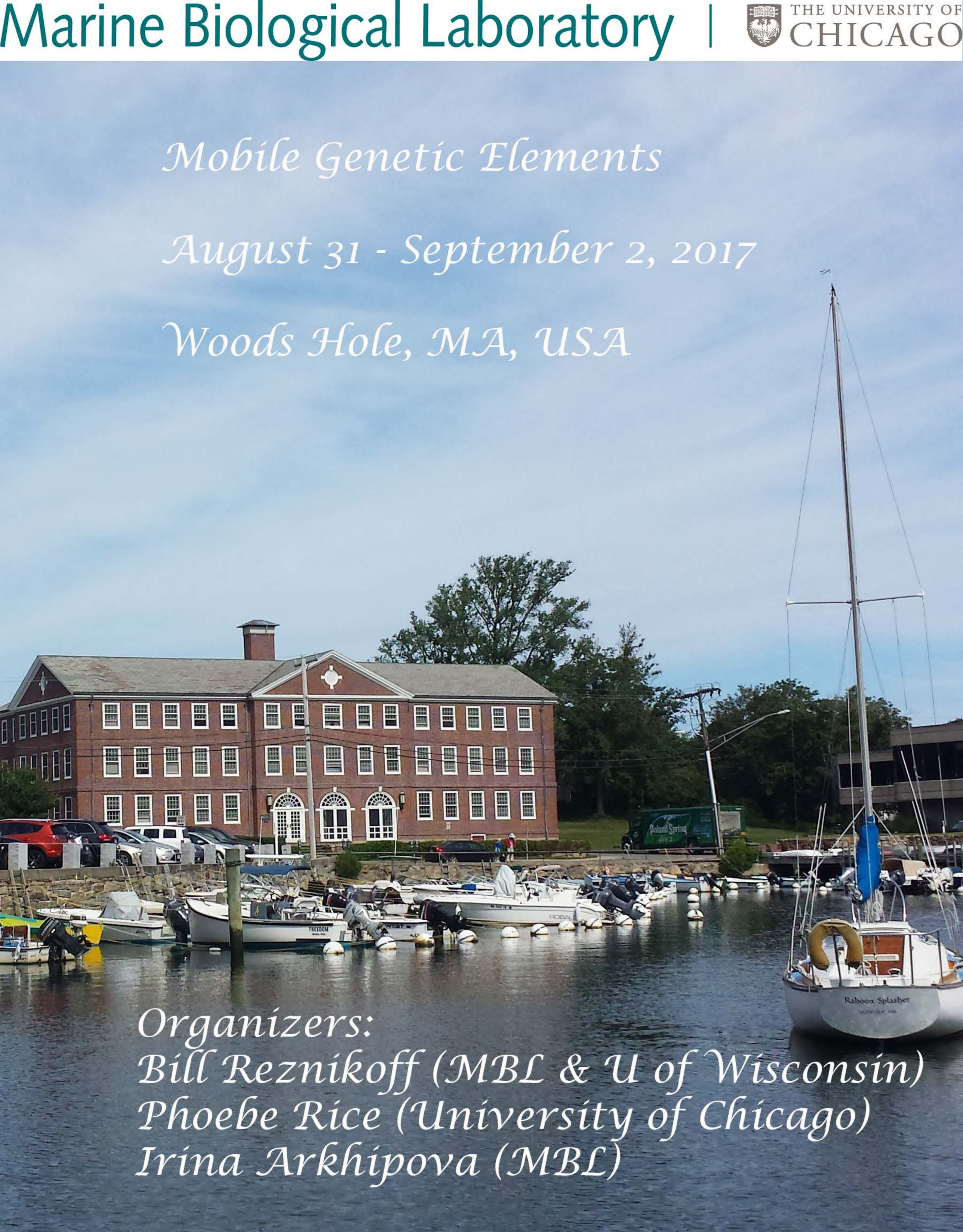
Marine Biological Laboratory | THE UNIVERSITY OF CHICAGO

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
Arkhipova	Irina	MBL	iarkhipova@mbl.edu	P.I.
Bacot-Davis	Valjean	University at Albany, SUNY	valjean.fire@gmail.com	Post Doc
Belfort	Marlene	UAlbany, SUNY	mbelfort@albany.edu	P.I.
Bhatt	Shivam	New England Biolabs	shivamb@hotmail.co.uk	Grad Student
Chandler	Michael	CNRS	mike@ibcg.biotoul.fr	P.I.
Chang	Yung-Heng	Stony Brook University	foreverchang89@gmail.com	Post Doc
Derbyshire	Keith	Wadsworth Center	keith.derbyshire@health.ny.gov	P.I.
Dong	Xiaolong	University at Albany-SUNY	xdong@albany.edu	Grad Student
Dyda	Fred	NIDDK	fred.dyda@nih.gov	P.I.
Evsikov	Alexei	University of South Florida	aevsikov@health.usf.edu	Faculty
Feschotte	Cedric	Cornell University	cf458@cornell.edu	Faculty
Gardner	Jeff	University of Illinois	jeffgard@uiuc.edu	P.I.
Girgis	Hani	University of Tulsa	hani-girgis@utulsa.edu	Faculty
Gladyshev	Eugene	Harvard University	eugene.gladyshev@gmail.com	Post Doc
Grusz	Amanda	University of Minnesota Duluth	algrusz@d.umn.edu	P.I.
Han	Shunhua	University of Georgia	shhan@uga.edu	Grad Student
Johnson	Reid	UCLA	rcjohnson@mednet.ucla.edu	P.I.
Kapitonov	Vladimir	NCBI/NLM	kvladimirv@gmail.com	Staff/ Other
Keegan	Richard	Stony Brook University	richard.keegan@stonybrook.edu	Grad Student
Kelley	Danielle	SUNY Albany	dkelley@albany.edu	Grad Student
Kreiling	Jill	Brown University	jill_kreiling@brown.edu	P.I.
Lau	Nelson	Boston University Med School	nclau@bu.edu	Faculty
Lê	Brandon	Brown University	bml0309@gmail.com	Undergraduate
Lennon	Christopher	SUNY-Albany	cwlennon@albany.edu	Post Doc
Mir Sanchis	Ignacio	University of Chicago	imirsanchis@uchicago.edu	Post Doc
Newton	Jocelyn	Brown University	jocelyn_newton@brown.edu	Grad Student
Novikova	Olga	SUNY-Albany	novikova.olga.uky@gmail.com	Post Doc
Ou	Shujun	Michigan State University	oushujun@msu.edu	Grad Student
Parhad	Swapnil	UMass Med School Worcester	swapnil.parhad@umassmed.edu	Grad Student
Peters	Claire	Cornell University	joe.ithaca@gmail.com	Staff/ Other
Peters	Joseph	Cornell University	jep48@cornell.edu	P.I.
Rahman	Reazur	Brandeis University	reazur@brandeis.edu	Post Doc
Raleigh	Elisabeth	New England Biolabs	raleigh@neb.com	Staff/ Other

Reznikoff	Bill	MBL	breznikoff@mbl.edu	Staff/ Other
Rice	Phoebe	The U. of Chicago	price@uchicago.edu	P.I.
Riggs	Paul	New England Biolabs	riggs@neb.com	P.I.
Rodriguez	Fernando	Marine Biological Laboratory	frodriguez@mbl.edu	Post Doc
Sedivy	John	Brown University	john_sedivy@brown.edu	Faculty
Skok	Jane	New York University Med Sch	jane.skok@med.nyu.edu	Faculty
Snesrud	Erik	Walter Reed Army Research	erik.c.snesrud.ctr@mail.mil	Staff/ Other
Soucy	Shannon	Dartmouth College	shannon.soucy@dartmouth.edu	Post Doc
Steinmetz	Eric	Lucigen Corp.	esteinmetz@lucigen.com	Staff/ Other
Thomas	Alexis	University of Chicago	alexist@uchicago.edu	Grad Student
Van Duyne	Greg	University of Pennsylvania	vanduyne@mail.med.upenn.edu	Faculty
Waldern	Justin	SUNY Albany	jmwaldern@gmail.com	Grad Student
Yang	Nachen	Brandeis University	nyang@brandeis.edu	Post Doc
Yushenova	Irina	Marine Biological Laboratory	iyushenova@mbl.edu	Post Doc

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Lucigen
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