Announcing Keystone Symposia’s 2015 conference on:

RNA Silencing in Plants

February 17–22, 2015
Keystone Resort
Keystone, Colorado, USA

Scientific Organizers: Robert Martienssen and Craig S. Pikaard

New roles for small RNA are emerging in germ cell fate, chromosome organization and DNA recombination and repair, as well as in transgene silencing. This conference brings together leaders in the field of RNA silencing from around the world with the specific goal of exploring these emerging new functions, and relating them to what is known about existing mechanisms. Participants will explore their implications for real-world problems in plant biotechnology, plant breeding, genetic modification and plant defense for solutions in sustainable agriculture and bioenergy.

Session Topics:
• Small RNA Biogenesis and Stability
• Small RNA Programming via ARGONAUTE Function
• RNA Silencing and Germ Cell Fate
• RNA-Dependent Chromatin Modification
• Transcriptional Epigenetic Inheritance
• Chromosomal RNA Silencing
• RNA Signaling, DNA Methylation and Demethylation
• Novel Biological Functions of Noncoding RNA
RNA Silencing in Plants (G1)

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Sponsored by Monsanto Company


TUESDAY, FEBRUARY 17

Arrival and Registration

WEDNESDAY, FEBRUARY 18

Keynote Address
David C. Baulcombe, University of Cambridge, UK
Small RNA Biogenesis in Plants and Unicellular Algae

Small RNA Biogenesis and Stability
*Marjori Ann Matzke, Institute of Plant and Microbial Biology, Academy Sinica, Taiwan
Mechanisms of microRNA Degradation
Xuemei Chen, University of California, Riverside, USA
Phased Secondary siRNAs and their Roles in Plants
Blake C. Meyers, Donald Danforth Plant Science Center, USA
Short Talk: COP1 E3 Ligase Protects HYL1 to Retain MicroRNA Biogenesis
Seong Wook Yang, University of Copenhagen, Denmark
Short Talk: Uncovering the Role of SERRATE in miRNA Processing and General RNA Metabolism
Carolyn A. Behm, Australian National University, Australia
Short Talk: Using in Plants RNA Interference in the Model Legume Medicago truncatula to Control Infections with the Root-Knot Nematode Meloidogyne javanica
German E. Martinez, Ohio State University, USA
Short Talk: Uncovering the Role of RNA-Derived Small RNAs in Plants

Small RNA Programming via ARGONAUTE Function
*Xuemei Chen, University of California, Riverside, USA
R. Scott Poethig, University of Pennsylvania, USA
Turning a Slope into a Step: miR156 and the Regulation of Vegetative Phase Change in Arabidopsis
James C. Carrington, Donald Danforth Plant Science Center, USA
RNA Silencing and Antiviral Defense
Hailing Jin, University of California, Riverside, USA
ARGONAUTE PIWI Domain and MicroRNA Duplex Structure
Regulate Small RNA Sorting in Arabidopsis
Benoit Derrien, Institut de Biologie Moléculaire des Plantes, IBMP, France
Short Talk: Post-Translational Control of ARGONAUTE Proteins: P0 as a Tool to Better Understand the Role of Autophagy in RNA Silencing Regulation

Poster Session 1

THURSDAY, FEBRUARY 19

RNA Silencing and Germ Cell Fate
*Blake C. Meyers, Donald Danforth Plant Science Center, USA
Jean-Phillippe Vielle-Calzada, Langebio Cinvestav Unidad Irapuato, Mexico
Apomixis and the Epigenetic Control of Female Gametogenesis

Anna Koltunow, CSIRO Plant Industry, Australia
Small RNA Pathways in Sexual and Apomictic Female Gamete Development
Frederic Berger, Gregor Mendel Laboratory, Austria
Reprogramming and Zygotic Activation in Arabidopsis
Rebecca A. Mosher, University of Arizona, USA
Ancient Origin and Recent Innovations of RNA Polymerase IV and V
Iris Hövel, University of Amsterdam, Netherlands
Short Talk: Chromatin Structure of Paramutation Sequences in Maize Plants Impaired for RNA-Directed DNA Methylation
Arturo Mari-Ordóñez, Swiss Federal Institute of Technology, Zurich, Switzerland
Short Talk: Mandatory Splicing and Premature Termination of Copia-Like Retrotransposons Triggers RNA Silencing in Arabidopsis

RNA-Dependent Chromatin Modification
*Julie A. Law, The Salk Institute for Biological Studies, USA
Thierry Lagrange, Centre National pour la Recherche Scientifique, France
Mechanisms of RNA-Mediated DNA Methylation in Arabidopsis thaliana
Vincent Colot, École Normale Supérieure, France
Transgenerational Progressivity of RNA-Directed DNA Methyltion
Andrzej T. Wierzbicki, University of Michigan, USA
Control of Chromatin Structure by Long Non-Coding RNA
Molly Megraw, Oregon State University, USA
Short Talk: Analysis of Transcription Initiation Pattern and Chromatin Structure Associated with Arabidopsis IncRNA Promoter Regions

Poster Session 2

FRIDAY, FEBRUARY 20

Transcriptional Epigenetic Inheritance
*Andrzej T. Wierzbicki, University of Michigan, USA
Craig S. Pikaard, HHMI/Indiana University, USA
RNA Silencing and Epigenetic Inheritance
Jerzy Paszkowski, University of Cambridge, UK
Contribution of Epigenetics to Transgenerational Inheritance
Ortrun Mittelsten Scheid, Gregor Mendel Institute of Molecular Plant Biology, Austria
Stability of Epialleles and their Interaction
Jay B. Hollick, Ohio State University, USA
Non-Mendelian Inheritance of Epigenetic Variation in Maize
Ana López, University of Sheffield, UK
Short Talk: The Epigenetic Basis of Plant Immunity
Bin Yu, University of Nebraska, USA
Short Talk: PRL1, an RNA-Binding Protein, Positively Regulates the Accumulation of miRNAs and siRNAs in Arabidopsis

Chromosomal RNA Silencing
*Rebecca A. Mosher, University of Arizona, USA

* Session Chair † Invited but not yet accepted Program current as of April 14, 2019. Program subject to change. Meal formats are based on meeting venue. For the most up-to-date details, visit www.keystonesymposia.org/15G1.
Steven E. Jacobsen, University of California, Los Angeles, USA
Mechanistic Studies of RNA-Mediated Chromatin Silencing in Arabidopsis

Julie A. Law, The Salk Institute for Biological Studies, USA
DNA Methylation and Gene Regulation in Arabidopsis thaliana

Robert A. Martienssen, Cold Spring Harbor Laboratory, USA
Heterochromatin Reprogramming with Small RNA

Andrea D. McCue, Ohio State University, USA
Short Talk: ARGONAUTE 6 Bridges the RNAi of Transposable Element mRNAs to the Establishment of DNA Methylation

Poster Session 3

SATURDAY, FEBRUARY 21

RNA Signaling, DNA Methylation and Demethylation

*Caroline Dean, John Innes Centre, UK
DNA Demethylation and Small RNA Signaling in Plants

Marjori Ann Matzke, Institute of Plant and Microbial Biology, Academia Sinica, Taiwan
Results of a Genetic Suppressor Screen Using a Mutant Defective in RNA-Directed DNA Methylation and Development in Arabidopsis thaliana

Jian-Kang Zhu, Purdue University and Shanghai Center for Plant Stress Biology, CAS, USA
Active DNA Demethylation and Epigenetic Anti-Silencing in Plants

Ben P. Williams, Whitehead Institute for Biomedical Research, USA
Short Talk: Negative Feedback between DNA Methylation and Demethylation Maintains Epigenetic Homeostasis in Arabidopsis

Quentin Gouil, University of Cambridge, UK
Short Talk: Hybrid-Induced Paramutation in Tomato

Olivier Voinnet, Swiss Federal Institute of Technology, Zürich, Switzerland
Cell-to-Cell and Long-Distance siRNA Movement in Plants: Mechanisms and Biological Implications

Novel Biological Functions of Noncoding RNA

*R. Scott Poethig, University of Pennsylvania, USA
Noncoding RNAs and Chromatin Regulation at Arabidopsis FLC

Caroline Dean, John Innes Centre, UK
Epigenetic Control of Plant Mobilomes

Marie Mirouze, IRD, France

David Secco, University of Western Australia, Australia
Short Talk: Phosphate Starvation in Rice Induces Mitotically Heritable Modulation of DNA Methylation at Starvation Responsive Genes

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

SUNDAY, FEBRUARY 22

Departure