



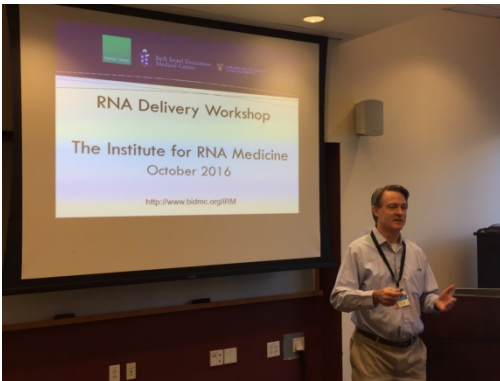
# INSTITUTE FOR RNA MEDICINE

## newsletter

Fall 2016

## RNA Delivery Workshop

On October 24 the Institute for RNA Medicine held a daylong workshop, "Solving the RNA Delivery Problem," kicking off a collaborative long-term project engaging biomedical engineers, chemists and nanotechnologists.



The workshop addressed the problem of moderating microRNAs that are being over- or under-expressed and leading to disease, an issue that requires novel, out-of-the-box thinking. The Institute for RNA Medicine facilitated a day's worth of discussions with researchers and engineers on ways to move the field forward and identify solutions. At the conclusion of the event, attendees were invited

to apply for funding for pilot projects towards finding a way to deliver RNAs into human cells. This competitive grant program, funded by generous donations from iRM sponsors, will encourage new and potentially valuable collaborations to meet this challenge.

## RNA Research Highlighted at Cancer Center Symposium

Breaking all previous attendance records, the BIDMC Cancer Center's Ninth Annual Cancer Symposium brought 500 attendees to the Joseph B. Martin Center at Harvard Medical School on November 2. iRM Director Dr. Frank Slack moderated the day's final session, which included a presentation on "Hypoxia, Metabolism and Tumor Progression" by Dr. Celeste Simon of the Perlman School of Medicine at the University of Pennsylvania. Incoming Dean of Harvard Medical School and HHMI investigator, Dr. George Q. Daley of Boston Children's Hospital, then presented on the role for the stemness pathway involving the LIN28-let-7 axis in cancer and the potential for targeting this pathway for novel therapeutics.

The daylong program, titled "Pathways to Cure," featured more than a dozen presentations by leaders in the field and focused on some of the newest frontiers in cancer research, including immunotherapy and cancer genomics. "This symposium has become a fantastic forum to discuss new advances - trail-blazing advances - with a specific and particular attention on translating these advances into therapy, but importantly, into cures," said Cancer Center Director Dr. Pier Paolo Pandolfi. "We use the word 'cure' on purpose because we want to cure cancer and not simply treat cancer."

*from the desk of*

### Frank J. Slack, PhD

Director, Institute for RNA Medicine, Beth Israel Deaconess Medical Center

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### Recent News

#### [Expedited Delivery of RNAi Therapeutics](#)

From *GEN*, November 1, 2016

iRM Director Dr. Frank Slack on the promise of RNA interference (RNAi) therapy

#### [Taste for Fat](#)

From Harvard Medical School, September 15, 2016

iRM Members Dr. Pier Paolo Pandolfi and Dr. Andrew Beck's research on cancer metabolism

#### [Scientists Discover New Way to Stop Growth of Lung Cancer](#)

From *Health Newline*, August 8, 2016

iRM Member Dr. Daniel Tenen has discovered a new way in which the growth of lung cancer can be suppressed

# Collaboration with JAX

An exciting collaborative project between the iRM and The Jackson Laboratory (JAX) entitled "MicroRNAs as personalized therapeutics for lung cancer" has entered its second year of funding. The study between Dr. Frank Slack at BIDMC and Dr. Carol Bult at JAX seeks to use the JAX resource of lung cancer patient derived cancer mouse models (patient derived xenograft, or PDX, models) to test the hypothesis that microRNA profiling of human lung cancer tumors can identify an actionable list of miRNA molecules for personalized therapeutic use. RNA from the collection of PDX models at JAX has been isolated and sequenced to identify a pattern of microRNAs for each individual tumor. The samples are also in the process of being used to derive 2D and 3D cultures that will allow the researchers to test the efficacy of this novel miRNA-based therapeutic strategy by antagonizing the top five up-regulated miRNAs or restoring the top five most downregulated miRNAs in tissue culture based on the patient's tumor cells taken from the PDX.

## RNA Society Salon

We are very pleased to announce that the Institute for RNA Medicine's monthly Seminar Series has been designated an RNA Salon by The RNA Society, a non-profit, international scientific society dedicated to fostering research and education in the field of RNA science. Thanks to their generous financial support, the iRM will be able to host more seminars and sponsor more speakers in the 2016-17 academic year.

## iRM Faculty Launch Startup Company Focused on Drugging the *let-7* microRNA Pathway

Funded by MPM Capital, Twentyeight-Seven Therapeutics, Inc. was recently launched with the goal to develop novel cancer therapeutic small molecules that can modulate levels of *let-7* microRNAs by targeting their antagonists, the Lin28 RNA-binding proteins. Dr. Frank Slack is one among four scientific co-founders of Twentyeight-Seven Therapeutics, Inc. who discovered the first human *let-7* miRNAs and has issued patents on *let-7*. Other scientific co-founders are Drs. George Q. Daley and Richard Gregory of Boston Children's Hospital and Dr. Piotr Sliz from Harvard Medical School. Currently, "proof-of-concept" experiments are ongoing. These are important and necessary initial steps that will provide initial assessment of drug discovery potential before series A financing.

## Sponsorship Opportunities

The Institute for RNA Medicine welcomes inquiries from individuals and companies interested in supporting RNA medicine. Donations to the iRM can be directed toward the overall operating costs for a particular event, including our annual Symposium. Please contact us for more information.

### Twitter

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December 1, 2016  
From the Slack Lab: "A role for miR-34 in colon cancer stem cell homeostasis"

November 14, 2016  
Looking forward to tomorrow's iRM Seminar by @TheRNAInstitute Director, Dr. Paul Agris

October 20, 2016  
Learn about the work of iRM member Dan Tenen in @nature: The dark side of the human genome

### Events

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**iRM Seminar Series**  
Thomas Duchaine, PhD,  
McGill University  
January 10, 2017, 3 PM  
CLS 421, 3 Blackfan Circle

**RNA Technology Showcase**  
David Duffy, PhD, Quanterix  
Jonathan Miles Brown, PhD,  
MPEG LA  
February 7, 2017, 3 PM  
CLS 421, 3 Blackfan Circle

**RNAMECINE2017**  
April 27, 2017  
Joseph B. Martin Conference  
Center, Harvard Medical  
School  
Registration will open in  
January 2017

### Contact Us

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