

## MAIN AUDITORIUM | BROAD INSTITUTE

- 8:30-8:45am Coffee & tea, bring your own breakfast!
- 8:45-9:00 Welcoming Remarks  
Winston Yan
- 9:00-9:45 **Keynote** • Stem cells, gene editing, and disease research  
Dr. Rudolf Jaenisch
- 9:55-10:35 **Tutorial (Beginner)** • Using Cas9 for targeted DNA mutagenesis  
Dr. F. Ann Ran
- 10:45-11:10 Defining Genomewide Off-Target Activities of CRISPR-Cas9 Nucleases Using GUIDE-seq  
Dr. Shengdar Tsai
- 11:10-11:25 Modifying the Specificities of CRISPR-Cas9 Nucleases  
Dr. J. Keith Joung
- 11:25-11:45 **Tutorial (Intermediate)** • Specificity Enhancement Strategies  
Dr. Shengdar Tsai
- 11:45-12:15pm Engineering the specificity and delivery of genome-editing proteins  
Dr. David Liu
- 12:30-1:15 **LUNCH PANEL: Cas9 Specificity**  
Dr. Yanfang Fu, Dr. Vikram Pattanayak, Dr. Shengdar Tsai & Dr. Xuebing Wu, moderated by Dr. Patrick Hsu
- 1:15-2:00 **Tutorial (Advanced)** • Genetic screening using Cas9 libraries  
Dr. Neville Sanjana & Dr. Ophir Shalem
- 2:15-2:45 CRISPR technology for genetic screens: on-target activity and off-target effects  
Dr. John Doench
- 2:45-3:15 Cas9 activators and gain of function screening  
Silvana Konermann
- 3:30-4:00 Towards therapeutic translation of CRISPR/Cas9 in human hematopoietic stem cells  
Dr. Derrick Rossi
- 4:00-4:30 Dynamic Genome Engineering for Biological Computing and Antimicrobial Applications  
Dr. Timothy Lu

FRIDAY, MAY 8 2015

8:30am-4:30pm Auditorium Presentations  
with Livestreaming in Monadnock Room

- 1:30-2:30pm **Next generation sequencing analysis**  
David Scott, Dr. Patrick Hsu & Jonathan Gootenberg  
Board Room  
**sgRNA design tools**  
Benchling and gGUIDEBOOK  
Mezzanine Level
- 2:30-3:30 **Knockout screens: practical considerations, data analysis & troubleshooting**  
Dr. Ophir Shalem, Dr. Neville Sanjana, Kaijie Zheng & Omar Abudayyeh  
Board Room
- 3:30-4:30 **Activator screens: design and analysis**  
Silvana Konermann & Julia Joung  
Board Room
- 4:30-6:30 **POSTER SESSION & HAPPY HOUR**  
with Addgene & Aeronaut Brewery  
Lobby & Monadnock Room



Genome Engineering 3.0  
A practical workshop  
May 8-9, 2015, Cambridge MA  
[workshop.genome-engineering.org](http://workshop.genome-engineering.org)

## MAIN AUDITORIUM | BROAD INSTITUTE

# SATURDAY, MAY 9 2015

- 8:30-8:50am Coffee & tea, bring your own breakfast!
- 8:50-9:00 Introduction to Day 2  
Winston Yan
- 9:00-9:45 **Keynote • "Safety"**  
Dr. George Church
- 9:55-10:35 **Tutorial (Intermediate) • Genome Editing in Mice Mediated by CRISPR/Cas**  
Dr. Wenning Qin
- 10:45-11:15 **Modeling disease in human pluripotent stem cells via genome editing**  
Dr. Chad Cowan
- 11:15-11:45 **Engineering the noncoding genome at high resolution**  
Dr. Daniel Bauer
- 11:45-12:15pm **Type II CRISPR-Cas and Cas9: diversity, origins and evolution**  
Dr. Eugene Koonin
- 12:30-1:15 **LUNCH BREAK**
- 1:15-1:40 **Tutorial (Intermediate) • In vivo genome editing using the Cas9 knock-in mouse**  
Randall Platt
- 1:40-2:05 **Genetic screen in a mouse model of tumor growth and metastasis using CRISPR libraries**  
Dr. Sidi Chen
- 2:20-2:45 **Tutorial (Beginner) • In vivo genome editing using AAV delivery of *S. aureus* Cas9**  
Dr. Le Cong
- 2:45-3:10 **In vivo interrogation of gene function in the mammalian brain using CRISPR-Cas9**  
Dr. Naomi Habib
- 3:10-3:20 **Closing Remarks**  
Winston Yan
- 3:30-5:00 **Please join us for breakout sessions!**

8:30am-3:20pm Auditorium Presentations  
with Livestreaming in Monadnock Room

10:00am-12:30pm **Morning breakout sessions: General Q/A, troubleshooting & experimental design**  
Dr. Le Cong – General Cas9 questions  
Dr. Yanfang Fu – Cas9 specificity  
Jonathan Gootenberg – Computational tools  
Silvana Konermann – Activators & screening  
Dr. Pankaj Mandal – HSC genome editing  
Dr. Curtis Warren – IPS cell genome editing  
Winston Yan – In vivo delivery  
Kaijie Zheng – Knockout screening  
Benchling & gUIDEBOOK  
Yellowstone Room

1:30-5:00 **Afternoon breakout sessions: General Q/A, troubleshooting & experimental design**  
Matthew Canver – Cas9-mediated deletions  
Dr. Carolyn Hudak – Human stem cell editing  
Peter Kutny – Mouse zygote microinjections  
Dr. Luca Pinello – Data analysis  
Randall Platt – Cas9 knock-in mouse  
Dr. F. Ann Ran – General Cas9 questions  
Dr. Ophir Shalem – Knockout screening  
Su Vora – Cas9 activators  
Bernd Zetsche – Split Cas9  
Dr. Yang Zhou – Cas9 mouse models  
Dr. John Zuris – Delivery of Cas9 protein  
Yellowstone Room



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