

Sunday, September 15

- 3:00 pm Check-in
- 6:00 pm Reception & Speed Dating Ice Breaker (*Lobby*)
- 7:30 pm Dinner (*Dining Room*)
- 8:30 pm Welcome/Opening Remarks (Organizers)**
- 8:35 pm Keynote: David Schaffer, University of California, Berkeley**
Directed evolution of new viruses for therapeutic gene delivery
- 9:35 pm Refreshments available at Bob's Pub

NOTE:
Meals are in the **Dining Room**
Talks are in the **Seminar Room**
Posters are in the **Lobby**

Monday, September 16

Talks are 15 min + 5 min for Q&A

- 7:30 am Breakfast (*service ends at 8:45 am*)
- 9:00 am Session 1**
Chair: Viviana Gradinaru
- 9:00 am **Crash course #1: AAV (Loren Looger)**
- 9:20 am **Lester Suarez**, AskBio
AAV Vectors 3.0
- 9:40 am **Luk Vandenberghe**, Harvard Medical School
Decoding AAV for increased pharmacological control in gene therapy
- 10:00 am **Deniz Dalkara**, Vision Institute, Paris
Directed evolution of AAVs for efficient gene delivery in the visual system
- 10:20 am Break
- 10:50 am Session 2**
Chair: David Schaffer
- 10:50 am **Guangping Gao**, University of Massachusetts
High-throughput platform technology to identify high-performance capsids from natural reservoir
- 11:10 am **Tomas Bjorklund**, Lund University
Tailoring the AAV using rational evolution for brain targeting and circuit connectomics
- 11:30 am Discussion 1**
Example topics include:
How to better close the loop between library/variant makers & testers?
- What works, what doesn't work & what only works in certain circumstances
- Collaborative effort at screening libraries, etc
- 12:10 pm Lunch (*service ends at 1:00 pm*)
- 2:00 pm Session 3**
Chair: Loren Looger
- 2:00 pm **Nicholas Flytzanis**, California Institute of Technology
Systemic delivery of engineered AAVs mediates gene expression throughout the rodent and primate brain

Engineering and Evolving Viruses to Expand Functionality

- 2:20 pm **Thomas J. McCown**, University of North Carolina at Chapel Hill
AAV capsid-promoter interactions determines CNS cell selective gene expression in vivo
- 2:40 pm **Viviana Gradinaru**, California Institute of Technology
Gene delivery across the blood-brain-barrier, whole-body tissue clearing, and optogenetics to understand and influence physiology and behavior
- 3:00 pm **Aravind Asokan**, Duke University
Structure-guided evolution of adeno-associated viruses
- 3:20 pm Break
- 3:50 pm Discussion 2**
Example topics include:
How are we doing on AAV engineering?
What remains to be done?
Capsid engineering, receptors, etc
- 4:30 pm Poster Blitz (2 mins / 2 slides each)**
John Chiorini, *National Institute of Dental and Craniofacial Research*
Nikhil B. Faulkner, *Francis Crick Institute/Imperial College London*
Adriana Galvan, *Emory University*
Michael Hantak, *University of Utah*
Kuo-Fen Lee, *Salk Institute*
Kinjal Majumder, *University of Missouri School of Medicine*
Sara K. Powell, *University of North Carolina at Chapel Hill*
Matt Rowan, *Emory University*
Jai W. Seo, *Stanford University*
Joost Verhaagen, *Netherlands Institute for Neuroscience*
Wei Xu, *University of Texas Southwestern Medical Center*
- 5:00 pm Reception (*Lobby*)
- 6:45 pm Dinner (*Dining Room*)
- 8:00 pm Refreshments available at Bob's Pub

Tuesday, September 17

- 7:30 am Breakfast (*service ends at 8:45 am*)
- 9:00 am Session 4**
Chair: Sarada Viswanathan
- 9:00 am **Katherine Ferrara**, Stanford University
PET imaging of AAVs
- 9:20 am **Constance L. Cepko**, HHMI/Harvard Medical School
AAV genome structure is correlated with ocular toxicity
- 9:40 am Discussion 3**
Example topics include:
Viral immunogenicity & evasion
Genome structure: ITRs, other bits, is there stuff there that we don't recognize yet?
- 10:40 am Break
- 11:10 am Session 5**
Chair: Ian Wickersham
- 11:10 am **Nicole Thadani**, Rice University
Engineering AAV vectors
- 11:30 am **Melina Fan**, Addgene
Using next generation sequencing to assess accuracy and quality of recombinant Adeno associated virus preparations
- 11:50 am **Kimberly Ritola**, Janelia Research Campus/HHMI
TBD
- 12:10 pm **Crash course #2: Other viruses (Loren Looger)**
- 12:30 pm Lunch (*service ends at 1:00 pm*)
- 1:30 pm Building Tour (*optional - meet at reception*)

- 2:30 pm **Discussion 4**
Example topics include:
Standardize virus preps – core facility heads (Best practices? How to debug? What do core heads need to know from users and vice versa?)
What can we agree works better?
What are remaining challenges?
- 3:15 pm Break
- 3:45 pm Session 6**
Chair: Kim Ritola
- 3:45 pm **Esteban Engel**, Princeton University
Dissecting the molecular mechanisms of HSV-1 anterograde spread in neurons
- 4:05 pm **Liliana Maruri Avidal**, Ignite Immunotherapies
Historic review of oncolytic viruses and mechanisms to improve their major hurdles
- 4:25 pm **Ian Wickersham**, Massachusetts Institute of Technology
Re-engineering rabies virus
- 4:45 pm Poster Reception (*Lobby*)
- 6:30 pm Dinner (*Dining Room*)
- 8:00 pm Refreshments available at Bob's Pub

Wednesday, September 18

- 7:30 am Breakfast (*service ends at 8:45 am*)
- 9:00 am Session 7**
Chair: Melina Fan
- 9:00 am **Jason Shepherd**, University of Utah
Repurposed endogenous retroviral capsids - new gene delivery vectors?
- 9:20 am **Wesley I. Sundquist**, University of Utah
Enveloping designed protein assemblies and viral capsids
- 9:40 am **W. Allen Miller**, Iowa State University
Plant virus gene therapy vectors
- 10:00 am **Benjamin tenOever**, Icahn School of Medicine at Mount Sinai
Controlling viral function through small RNA-mediated biology
- 10:20 am Break
- 10:50 am Discussion 5**
Example topics include:
How are we doing on rabies?
How much less toxic are current variants and how can we best continue progress?
What remains to be done?
Finding other crazy viruses?
What viruses sound crazy to use but really aren't?
Enhancers
To-do list
- 11:50 am Conclusion & Final Remarks
- 12:00 pm Lunch and Departure
- 12:30 pm First shuttle to Dulles
1:30 pm Second shuttle to Dulles
2:30 pm Last shuttle to Dulles