The Systems & Integrative Biology (SIB) and Vision Training Grants are both long-standing predoctoral training programs at Penn, supported by the NIGMS (SIB) and NEI (Vision). Associated with these training programs is this Annual Retreat, which showcases the research progress by Current and Former (but still pre-PhD) Trainees. These programs also host an annual Visiting Scholar, who attends and speaks at the Annual Retreat, then remains In Residence for two additional days. During these additional days, the Visiting Scholar (1) meets individually with many Current and Former Trainees to discuss their Thesis Research and Career Goals, (2) gives a second seminar, for graduate students only, and (3) meets with a subset of faculty.

Each Visiting Scholar is identified by focusing on senior neuroscientists with international reputations who are also highly regarded for their (1) enthusiasm for interacting with graduate students, (2) breadth of interests, and (3) communication skills. The previous Visiting Scholars include:

- 2002 Michael Stryker, UCSF
- 2003 Carol Barnes, Univ. AZ, Tucson
- 2004 Holly Cline, Scripps Research Clinic, LaJolla, CA
- 2006 David Perkel, Univ WA, Seattle
- 2007 Carol Mason, Columbia Univ.
- 2008 Gina Turrigiano, Brandeis Univ.
- 2009 Leslie Griffith, Brandeis Univ.
- 2010 Michael Shadlen, Univ. WA, Seattle
- 2011 Sascha du Lac, Salk Institute, CA
- 2012 Nick Spitzer, Kavli Brain-Mind Institute, UCSD
- 2013 Maria Feller, UC Berkeley
- 2014 Tom Otis, UCLA
- 2015 Rich Krauzlis, PhD, National Eye Institute, NIH
- 2016 Cynthia Moss, Johns Hopkins Univ.

The 2017 Visiting Scholar is Alla Karpova, PhD, of Janelia Farm. Alla Karpova and her research group focus on decision-making in rodents with the aim of using molecular as well as other new technologies to study the underlying mechanisms. Her work is dedicated to understanding the neural circuits underlying the selection of appropriate behavioral strategies in complex environments and how these mechanisms are dysfunctional in neurological disorders.

The structure and function of the human cone photoreceptor mosaic

Learning to represent motion from unlabeled video

The impact of different sources of variability on IT performance during visual target search

Roles for robo2 in target-specific peripheral nerve regeneration

Harnessing pre-mRNA trans-splicing to treat Leber Congenital Amaurosis Type 10 (CEP290)

Neuropeptide signaling regulates C. elegans response to anoxia

Decision-making under uncertainty: Probing the neural basis of mental models