

NNRL RDIG 2026 Retreat Program

NIH National Eye Institute | Research in Vision Repair and Health

July 9-10, 2026 | NIH Building 31, 6C Rooms F-G

Microsoft Teams meeting

Join: <https://teams.microsoft.com/join/293187726039516?p=ppCxnYF9R4md8XZ7sl>

Meeting ID: 293 187 726 039 516

Passcode: 7iD2uJ9e

Note: Food and drinks are provided by personal funds, and no NIH or federal funds will be used.

This text-first version is organized for screen readers and keyboard navigation.

Day 1 - Thursday, July 9, 2026

Morning: Opening + Session 1

8:30-9:00 AM - Check-in Coffee/Breakfast

9:00-9:15 AM - Welcome: Anand Swaroop / David Schneeweis

Session 1: Chromatin Biology and Gene Regulation

Chair: Anjani Kumari - N-NRL, NEI

9:15-9:20 AM - Program introduction: Full-day overview and session breakdown

Time	Presenter	Talk
9:20-10:20 AM	Pedro P. Rocha - Unit on Genome Structure and Regulation, NICHD	Untangling enhancer promoter interactions throughout mouse development
10:20-10:35 AM	Nivedita Singh - N-NRL, NEI	Integrated multi-omics GWAS analysis of glucocorticoid treated human trabecular meshwork cells identifies 78 genes and signaling pathways for intraocular pressure and primary open-angle glaucoma
10:35-10:50 AM	Alastair Tulloch - N-NRL, NEI	Functional interrogation of cis-regulatory modules and disease-associated variants in human retinal organoids
10:50-11:05 AM	Mohita Gaur - N-NRL, NEI	Epigenomic landscape and metabolic activity exhibit concordant changes in the aging retinal rod photoreceptors
11:05-11:30 AM	All attendees	Coffee break

Midday: Session 2 + Lunch

Session 2: Organoids and 3-D Tissue Bioprinting

Chair: Angelica Ortiz - N-NRL, NEI

Time	Presenter	Talk
11:30 AM-12:30 PM	Marc Ferrer - 3-D Tissue Bioprinting Program, NCATS	Advancing drug discovery with biofabricated 3D tissue models
12:30-12:45 PM	Madhuri Rudraraju - N-NRL, NEI	From edit to insight: Decoding retinal organoids through genetic perturbation
12:45-12:50 PM	Aditi Mahajan - N-NRL, NEI	Insights into usher syndrome 3 as revealed by retinal organoids
12:50-12:55 PM	Hotae Lim - N-NRL, NEI	Axonal pathfinding of retinal ganglion cells within apical-in configuration
12:55-1:00 PM		Questions for 5-minute talks
1:05-2:00 PM		Informal Discussion + lunch

Afternoon: Session 3

Session 3: Disease and Interventions

Chair: Nivedita Singh - N-NRL, NEI

Time	Presenter	Talk
2:00-2:30 PM	Di Huang - Computational Biology Branch, NLM	Decoding gene silencers with deep learning: Expanding regulatory landscapes
2:30-2:45 PM	Jayshree Advani - N-NRL, NEI	Genetic regulation of RNA editing in the retina contributes to complex traits
2:45-3:00 PM	Anjani Kumari - N-NRL, NEI	NRL-Lamin interaction in gene positioning and expression in rod photoreceptor nuclei
3:00-3:15 PM	Bilguun Tegshee - N-NRL, NEI	Cis-regulation of Nrl and identification of a brain-specific Nrl isoform produced from an intronic promoter
3:15-3:30 PM	Sandeep Vishwakarma - Retinal Ganglion Cell Biology	Empowering vision protection with mitovesicle-enriched small extracellular vesicles
3:30-3:45 PM	Mary Mattapallil - Immunoregulation Section, NEI	Friends and Foes: How the microbes living in your gut and on your eye shape ocular immunity
3:45-4:00 PM		Coffee break

Closing: Session 4

Session 4: Post translational modifications

Chair: Alastair Tulloch - N-NRL, NEI

Time	Presenter	Talk
4:00-4:15 PM	Sonali Mohan - N-NRL, NEI	Phosphorylation-dependent regulation of NRL in rod photoreceptors
4:15-4:30 PM	Angelica Ortiz - N-NRL, NEI	Elucidating the role of ubiquitination in NRL function

End of Day 1

Day 2 - Friday, July 10, 2026

Morning: Session 5 + Closing Remarks

9:00-9:30 AM - Check-in Coffee/Breakfast

Session 5: Computational Biology

Chair: Jayshree Advani - N-NRL, NEI

Time	Presenter	Talk
9:30-10:30 AM	Karthik Shekhar - Dept. of Chemical and Biomolecular Engineering, UC Berkeley	The evolution of neural diversity in the vertebrate retina
10:30-10:45 AM	Matthew Brooks - N-NRL, NEI	NRL alters chromatin dynamics to promote rod differentiation in human retinal organoids
10:45-11:00 AM	Soumitra Pal - N-NRL, NEI	PINNOU: Physics-informed neural networks for phylogenetic Ornstein-Uhlenbeck Inference
11:00-11:15 AM	Aleksandr Friman - N-NRL, NEI	Evicting stem cells from pluripotency: Early stages of retinal organoid differentiation
11:15-11:30 AM	Tiansen Li	Concluding remarks

Midday: Breakout Discussions + Lunch

Time	Location	Talk
11:45 AM-1:00 PM	Bioinformatics room	Discussion with Karthik Shekar and computational folks; Chair: Jayshree Advani - N-NRL, NEI
11:45 AM-1:00 PM	N-NRL conference room	Discussion with Marc Ferrer and organoid folks; Chair: Angelica Ortiz - N-NRL, NEI

End of Day 2