Society of General Physiologists

79th Annual Meeting

2-6 September 2026

Marine Biological Laboratory

Woods Hole, MA

# Membrane Excitability and Reproductive Biology

Organized by

Polina Lishko (WashU Medicine)

Sarah England (WashU Medicine)

Celia Santi (WashU Medicine)

## PROGRAM

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CALL FOR PAPERS

**Membrane Excitability and Reproductive Biology**

JGP Journal of General Physiology

Affiliated with SGP's 79th Meeting
**Membrane Excitability and Reproductive Biology,"**

**Guest Editors**
Sarah K England, Celia M. Santi, and Polina Lishko , WashU Medicine, St Louis

***JGP* Editor**
David Eisner, University of Manchester, UK

JGP welcomes submissions that focus on increasing understanding of the role of ion channels, transporters, and receptors in reproductive system. Topics of interest include, but are not limited to, ion channels, and receptor biology, and regulatory mechanisms, pharmacology, physiological functions, disease relevance, and drug discovery, and novel methodologies leading to cutting-edge research and translational advances in reproductive biology.

Deadline:
**December 30, 2026**

JGP Journal of General Physiology

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# 79th Annual Meeting
# of the Society of General Physiologists

**Marine Biological Laboratory**
**Woods Hole, Massachusetts**
**2-6 September 2026**

## *Membrane Excitability and Reproductive Biology*

**ORGANIZED BY**

**Sarah England** (WashU Medicine)
**Polina Lishko** (WashU Medicine)
**Celia Santi** (WashU Medicine)

## SCHEDULE OF EVENTS

### Wednesday, September 2

**2:00 pm–10:00 pm** **Registration and room assignments (Swope Center, 1st Floor)**

**5:30 pm–7:00 pm** **Dinner (Swope Center, Hall, 2nd Floor)**

**7:15 pm–7:30 pm** **Opening Remarks** (Clapp Auditorium, Lillie Building)
**Sarah England, Polina Lishko, and Celia Santi,** Meeting Organizers
**Gregory Malar,** Executive Director, Society of General Physiologists

**7:30 pm–8:45 pm** ***Friends of Physiology Keynote Lecture***
**Mariana Wolfner** (Cornell University)
*And so it begins: Channels, ions, and protein-phosphorylation changes that transition eggs to embryos*

**9:00 pm–11:00 pm** **Travel Awards Presentation and Mixer** (Swope Center, Meigs Room)

## Thursday, September 3

**7:30 am-8:30 am** **Breakfast** (Dining Hall, Swope Center)

**8:30 am–10:15 am** **Session 1: Membrane Excitability in Female Gametes**
*Chair: Jean-Ju Chung*

8:30 am–9:00 am **Carmen Williams** (NIH/NIEHS)
*Ion channel regulated calcium signals at the intersection of metabolism and embryo development*

9:00 am–9:30 am **Rafael Fissore** (University of Massachusetts, Amherst)
*Ionic complexity: How multiple channels regulate the initiation of early mammalian development*

9:30 am-9:45 am **Jada Nix** (University of Missouri) Poster #24 Thurs
*Altered zinc and calcium dynamics contribute to premature oocyte activation during vitrification in a porcine model*

9:45 am-10:00 am **Maureen Tam** (WashU Medicine) Poster #9 Fri
*The role of Kir6.1 in ovarian vascular contractility and its relationship to female fertility*

10:00 am-10:15 am **Lama Alqusairi** (Johns Hopkins University) Poster #31 Fri
*Distal nephron ROMK underlies female advantage in $K^+$ homeostasis*

**10:15 am-10:45 am** **Break**

**10:45 am-12:30 pm** **Session 2: Membrane Excitability in Male Gametes**
*Chair: Jada Nix*

10:45 am-11:15 am **Jean-Ju Chung** (Yale University)
*Targeting the "undruggable" CatSper for reproductive medicine*

11:15 am-11:45 am **Ziao Fu** (WashU Medicine)
*Native membrane protein discovery & structural biology in the age of AI*

11:45 am-12:15 pm **Anne Carlson** (University of Pittsburgh)
*Mammalian sperm take up physiologically relevant zinc from seminal fluid via ZIP transporters*

## Thursday, September 3 *continued*

**10:45 am-12:30 pm** **Session 2: Membrane Excitability in Male Gametes *continued***
*Chair: Jada Nix*

12:15 am-12:30 pm **Shweta Bhagwat** (WashU Medicine) Poster #14 Thurs
*Bacterial endotoxin LPS dysregulates sperm function via TRPV4-mediated calcium signaling*

**12:30 pm-3:30 pm** **Lunch** (Swope Center) **and Free Time**

**3:30 pm-4:30 pm** **Panel Discussion** (Meigs Room, Swope Center)
*From Trainee to Tenure: Navigating the Academic Lifecycle in Reproductive Biology*
Moderated by **Shweta Bhagwat** (WashU Medicine)
**Farners Amargant i Riera** (WashU Medicine)
**Ripla Arora** (Michigan State University)
**Will Skinner** (Male Contraceptive Initiative)
**Carmen Williams** (NIH/NIEHS)

**4:30 pm–6:00 pm** ***Poster Session A and visits with exhibitors*** *(Swope 2nd Floor)*

**6:00 pm–7:00 pm** **Dinner** (Swope Center, Dining Hall)

**7:15 pm–8:45 pm** **Session 3: Mechanosensation in Reproduction**
*Chair: Juan Ferreira*

7:15 pm-7:45 pm **Farners Amargant i Riera** (WashU Medicine)
*Feeling the force: Piezo ion channels as key regulators of ovarian follicle mechanosensing*

7:45 pm-8:15 pm **Scott Barnett** (University of Nevada, Reno)
*The role of stretch-activated channels, Piezo1 and TREK-1, in the uterus during pregnancy and parturition*

8:15 pm-8:45 pm **Seham Ebrahim** (University of Virginia)
*Emerging mechanosensors: TMC ion channels in reproduction*

**9:00 pm–11:00 pm** **Evening at the Captain Kidd (77 Water Street, Woods Hole)**

## Friday, September 4

**7:30 am–8:30 am** **Breakfast (Swope Center, Dining Hall)**

**8:30 am-10:15 am** **Session 4: Drug Discovery for Fertility Preservation and Contraception**
*Chair: Scott Barnett*

8:30 am-9:00 am **Jerod Denton** (Vanderbilt University)
*Promising targets for fertility preservation and contraception and their pharmacology*

9:00 am-9:30 am **Aminata Touré** (INSERM)
*Focus on members of the SoLute Carriers superfamily as contraceptive targets*

9:30 am-10:00 am **Alberto Darszon** (UNAM)
*Starvation, contraception, and mammalian sperm ion channels*

10:00 am-10:15 am **Juan Ferreira** (WashU Medicine) Poster #19 Fri
*Human sperm phenotypic screening platform for non-hormonal contraceptive drug discovery*

**10:15 am–10:45 am** **Break**

**10:45 am-12:30 pm** **Session 5: Emerging Topics**
*Chair: Patricia Cuasnicú*

10:45 am-11:00am **Yunxiao Zhang** (Westlake University) Poster #1 Fri
*PIEZO channels link mechanical forces to uterine contractions in parturition*

11:00 am-11:15 am **Sally Xiao** (Harvard University) Poster #28 Thurs
*Maturation of the tactile sensation in the genitalia through hormonal regulation of Krause corpuscle development*

11.15 am-11.30 am **Claire Truongdang** (University of Washington) Poster #3 Fri
*Glutamine uptake of placental immune cells varies across gestation*

11:30 am-11:45 am **Parker Mixon** (Columbia University) Poster #32 Thurs
*A multiscale computational electrophysiology modeling framework with application to myometrial activation in late pregnancy*

## Friday, September 4 *continued*

**10:45 am-12:30 pm** **Session 5: Emerging Topics *continued***
*Chair: Patricia Cuasnicú*

11:45 am-12:15pm **Helena Parkington** (Monash University)
*A new method for simultaneous recording of uterine bioelectric and contractile activities in vivo in pregnant ewes*

12:15 pm-12:30 pm **Qingwei Niu** (WashU Medicine) Poster #11 Fri
*Structural basis of steroid and phosphoinositide regulation of human Kir7.1*

**12:30 pm-12:40 pm** **Group Photo** (Lillie Building Front Steps)

**12:45 pm-1:30 pm** **Lunch**

**1:30 pm-2:30 pm** **Workshop on Science Publishing:** *Careers, the Publication Process, and Trends in the Field* (Meigs Room, Swope)
**Tim Fessenden** (Executive Editor, Life Science Alliance)

**2:30 pm-3:30 pm** **"It's Different for Girls" documentary screening** (Meigs, Swope)
*With an introduction by the film's director, Billie JD Porter*

**3:30 pm-4:30 pm** **Roundtable Discussion** (Meigs, Swope)
*Building and Supporting Productive and Well-Funded Research Teams*
Moderated by **Sarah England** (WashU Medicine)
**Rafael Fissore** (University of Massachusetts, Amherst)
**Colin Nichols** (WashU Medicine)
**Joris Vriens** (KU Leuven)

**4:30 pm-6:00 pm** ***Poster Session B and visits with exhibitors*** (2nd Fl, Swope Center)

**6:00 pm-7:00 pm** **Dinner** (Dining Hall, Swope Center)

## Friday, September 4 *continued*

**7:15 pm-8:30 pm** **Session 6: Ion Channels and Receptors of the Male Reproductive Tract**
*Chair: Yunxiao Zhang*

7:15 pm-7:45 pm **Patricia Cuasnicú** (IBYME-CONICET)
*Contribution of epididymal calcium homeostasis to early embryo development*

7:45 pm-8:15 pm **Marc Spehr** (Aachen University)
*Cell type-specific Ca2+signals govern mouse seminiferous tubule physiology*

8:15 pm-8:30 pm **Daniel Ocampo** (UNAM) Poster #8 Thurs
*Lysine acetylation as a modulator of Hv1 proton channel*

**8:30 pm-9:00 pm** ***2026 SGP Excelsior Award Lecture***
**Bernardo Pinto** (UCSF)
*Revealing the structural basis of activation and 4-aminopyridine inhibition in voltage-gated potassium channels*

**9:00 pm-11:00 pm** **Evening at the Captain Kidd** (77 Water Street, Woods Hole)

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## Saturday, September 5

**7:30 am–8:30 am** **Breakfast (Swope Center, Dining Hall)**

**8:30 am-10:15 am** **Session 7: Ion Channels and Transporters of the Female Reproductive Tract**
*Chair: Pablo Villar*

8:30 am-9:00 am **Ramón Lorca** (University of Colorado, Denver)
*Optogenetic regulation of uterine blood flow: a novel model for FGR*

9:00 am-9:30 am **Ripla Arora** (Michigan State University)
*Uterine contractions as a morphogenetic force in early pregnancy*

9:30 am-9:45 am **Katryna Morgan** (University of Nevada) Poster #26 Thurs
*Anoctamin-1 antagonist impairs contractile responses of pregnant human uterine tissues*

## Saturday, September 5 *continued*

**8:30 am-10:15 am** **Session 7: Ion Channels and Transporters of the Female Reproductive Tract *continued***
*Chair: Pablo Villar*

9:45 am-10:00 am **Pilar Irigoyen** (UDELAR) Poster #23 Fri
*Intramitochondrial calcium increase: A conserved mechanism of mitochondrial activation in human and mouse sperm during capacitation*

10:00 am-10:15 am **Sri Karthika Shanmugam** (Columbia University) Poster #29 Fri
*A channel-specific ubiquitin code regulates CaV1.2 trafficking and function*

**10:15 am-10:45 am Break**

**10:45 am-12:30 pm Session 8: Ion Channels and Transporters of the Female Reproductive Tract, Part II, and Emerging Fields**
*Chair: Ramón Lorca*

10:45 am-11:15 am **Andy Blanks** (University of Warwick)
*Bioelectrical control of contractility: how ion channel composition and anatomy coordinate uterine contractions*

11:15 am-11:45 am **Huanghe Yang** (Duke University)
*Bioelectricity of the placenta*

11:45 am-12-15 pm **Joris Vriens** (KU Leuven)
*TRP-ing through reproduction: Uncovering the essential role of TRPV2 in placental development*

12:15 am-12:30 pm **Xiaoqin Ye** (University of Georgia)
*Targeting uterine fluid movement for contraception*

**12:30 pm-4:30 pm** **Lunch (12:30 pm to 1:30 pm) and Free Time**

1:30 pm-3:00 pm 1st Boat Trip (Optional) Meet in the Swope Lobby at 1:15 pm sharp
3:00 pm-4:30 pm 2nd Boat Trip (Optional) Meet in the Swope Lobby at 2:45 pm sharp

## Saturday, September 5 *continued*

**4:45 pm-6:30 pm** **Session 9: Emerging Fields in Reproductive Biology**
*Chair: Ripla Arora*

4:45 pm-5:15 pm **David Combs** *(Harvard University)*
*The mesometrium is a functionally and molecularly distinct origin site for uterine contractions in pregnant mice*

5:15 pm-5:45 pm **Pablo Villar** (Harvard University) Poster #16 Thurs
*A sensory system for mating in octopus*

5:45 pm-6:15 pm **Shaogeng Tang** (Yale University) Poster #7 Fri
*Structure and inhibition of the sperm TMEM95–FIMP complex in mammalian fertilization*

6:15 pm-6:30 pm **Deirdre Scully** (Case Western Reserve University) Poster #30 Thurs
*Mapping oviductal electrical activity*

**6:30 pm-8:00 pm** **Lobster Banquet and Poster Award Presentations** (Swope Terrace)

**8:00 pm-10:00 pm** **Closing Mixer** (Swope Terrace)

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## Sunday, September 6

**7:30 am-8:30 am** **Breakfast (Dining Hall, Swope Center)**

**10:00 am** **Swope Checkout Deadline**

**Society of General Physiologists**
**80th Annual Meeting**
**Marine Biological Laboratory**
**Woods Hole, MA**
**1-5 September 2027**

# Targeting Molecular Complexes of Ion Channels for Neurological Disorders

organized by

Rajesh Khanna and Fernanda Laezza

Visit **sgpweb.org** for the latest information

## Mission Statement

The Society of General Physiologists is an inclusive, international scientific society whose goal is to advance the understanding of the fundamental physiological mechanisms and physical principles that govern the functioning of biological systems. In addition to promoting pioneering and innovative research, the Society advocates for education and training, and it is committed to increasing diversity in the scientific workforce.

## 2026 SGP Council

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## SGP Membership

SGP was founded in 1946 "to promote and disseminate knowledge and interest in the subject of general physiology". Our international membership is made up of physiologists who work in academia, government, and industry. We have become known for promoting and nurturing research related to membrane transport and ion channels; membrane structure, regulation, and dynamics; and cellular contractility and molecular motors.

The major activity of the Society is its annul meeting at the Marine Biological Laboratory in Woods Hole, which members can attend at a discounted rate. SGP meetings cover the forefront of physiological research and are small enough to maximize discussion and interaction. Membership in the Society is open to any individual actively interested in the field of general physiology.

### Benefits include

- Deep discounts on SGP Meeting registration fees
- Eligibility to apply for the JGP-SGP Junior Faculty Network
- Online subscription to *Journal of General Physiology*
- Posting on JGP's Job Board
- Eligibility to apply for meeting support from SGP
- Admission to the annual SGP-JGP Mixer at BPS

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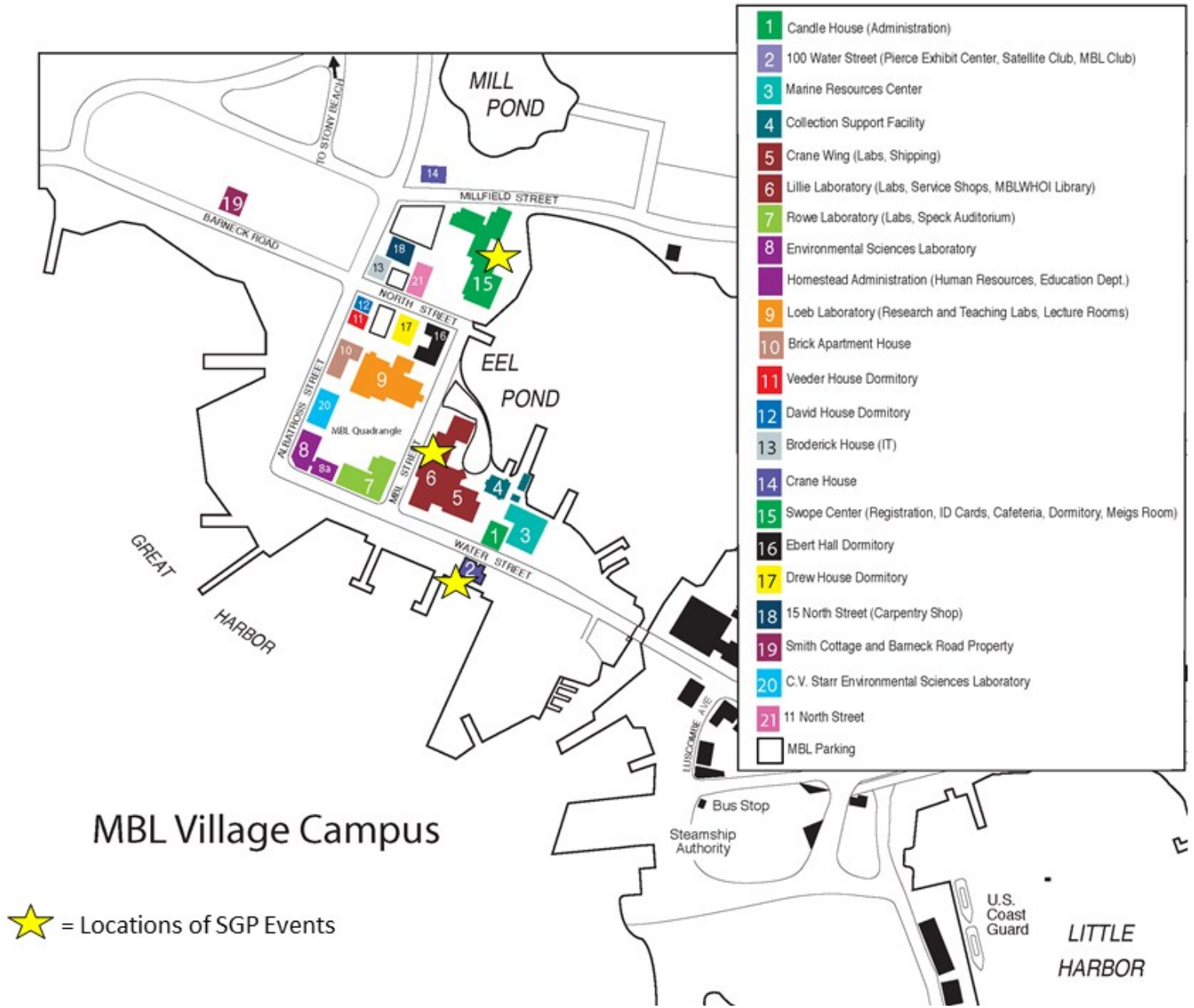


# MBL Village Campus

★ = Locations of SGP Events