

# Society of General Physiologists

eNewsletter Winter, 2020-2021



## SGP Elections Results

Over 200 ballots were cast in the fall SGP election for SGP councilors -- a record turnout! Thanks to all who participated.

### Welcome to our incoming SGP Councilors



**Anne Carlson**  
University of Pittsburg  
Councilor 2021-23



**Michael Pusch**  
Istituto di Biofisica CNR  
Councilor 2021-23



**John Del Rosario**  
Rutgers New Jersey  
Medical School  
Postdoc councilor 2021-23

### SGP Committees open to non-Council members!

Want to be more engaged with the SGP community? Are you excited about certain issues like diversity & equity? Good news: A change to the SGP bylaws was also approved in the recent election so that members can now serve on certain SGP committees. To volunteer, please complete the form at [sgpweb.org/committees](http://sgpweb.org/committees).

#### **SGP Committees (as of Dec 2020)**

\* indicates committees that are open to SGP members

underlining indicates committee chairs

#### **Cranefield Award Committee**

Alessio Accardi, Antoniya Aleksandrova, Eduardo Ríos, Jon Sack, Valeria Vásquez

#### **\*Diversity, Equity, and Inclusivity Committee**

Jorge Contreras, Ana Fernandez-Mariño, Jeanne Nerbonne, Janice Robertson, Valeria Vásquez

#### **Excelsior Award Committee**

Henry Colecraft, Jorge Contreras, Ana Fernandez-Mariño, Valeria Vásquez

**Fundraising/Sponsorship Committee**

Alessio Accardi, Jorge Contreras

**\*MBL Student Fellowships Committee**

Antoniya Aleksandrova, Ana Fernandez-Mariño, Jon Sack

**\*Membership Committee**

Jeanne Nerbonne, Gregory Malar

**Newsletter Committee**

Catherine Proenza, Valeria Vásquez

**Sharona Gordon Award Committee**

Merritt Maduke, Jeanne Nerbonne, Janice Robertson

**Social Media Committee**

Antoniya Aleksandrova, Ana Fernandez-Mariño

**Website Committee**

Catherine Proenza, Janice Robertson

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## Thank you to outgoing SGP Council members!

SGP extends a huge thank you to our outgoing president and councilors for their service. Following are brief closing interviews.



**Merritt Maduke**  
**Stanford University**  
**SGP President 2018-2019,**  
**Past-president 2020**

**SGP:** What is it like being part of the SGP Council?

**MM:** Being on Council gave me great appreciation for our Society. SGP members do amazing science and are also generous people who work to elevate everyone in the community.

**SGP:** What about the future of SGP makes you excited?

**MM:** I'm excited about SGP's continued dedication to fostering & improving diversity and about our postdoc Councilors and their energy in engaging the community.

**SGP:** Anything else you'd like to share?

**MM:** Council has opened up Committee membership to non-Council members. I encourage members to check out the options and see how they can shape the Society's future.

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**Jon Sack**  
**University of California, Davis**  
**Councilor 2018-2020**

**SGP:** What is it like being part of the SGP Council?



**JS:** I enjoy working with this amazing collection of caring and humble physiologists to foster a healthy intellectual culture and opportunities to engage in scientific discourse.

**SGP:** What about the future of SGP makes you excited?

**JS:** I'm a fan of efforts to propagate our philosophy of earnest scientific rigor by engaging with a diverse new generation of scientists. This bodes well for physiology generally!

**SGP:** Anything else you'd like to share?

**JS:** I encourage us of the SGP to keep our standards high, especially in terms of respect for solid science and for each other. Our meetings are exemplars of what science can be.

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**Anabel Fernandez-Marino**  
**NIH**  
**Postdoc Councilor 2018-2020**

**SGP:** What is it like being part of the SGP Council?

**AFM:** It was fantastic sharing the experience with a group of such talented scientists. I've learned how a society works

**SGP:** What about the future of SGP makes you excited?

**AFM:** I'm excited to see how the SGP keeps growing diversity and plays a part intellectually in the future of scientific discussions.

**SGP:** Anything else you'd like to share?

**AFM:** If you are reading this and considering joining our society or our council, DO IT! All of you have something to offer science.

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**Cathy Proenza**  
**University of Colorado**  
**Councilor 2018-2020**

**SGP:** What is it like being part of the SGP Council?

**CP:** Being part of SGP council is very rewarding, and fun too! It's great to be connected to the scientific community and to make a small contribution.

**SGP:** What about the future of SGP makes you excited?

**CP:** I'm excited both about the science and the interpersonal connections in our diverse community. I'm excited to hear about amazing new scientific findings and new techniques and I'm excited to meet new students and reconnect with old friends.

**SGP:** Anything else you'd like to share?

**CP:** SGP is a fantastic scientific community that facilitates the great work of its members -- join today!

## 2020 - 2021 SGP Symposium Update

74th Annual SGP Symposium

### *Ion channels and Transporters in Immunity, Inflammation, and Antitumor Immunity*

September 8-12, 2021

Marine Biological Laboratory,  
Woods Hole, MA

Organizers:

Stefan Feske, MD, Bimal Desai, PhD

Although the in-person 2020 SGP Symposium was postponed a year due to Covid-19, the organizers, Stefan Feske (NYU School of Medicine) and Bimal Desai (University of Virginia), quickly pivoted and organized a short online symposium as a teaser for the 74<sup>th</sup> Annual Meeting which will be held in-person in September 2021. See the meeting website for more info: [www.SGP2021.com](http://www.SGP2021.com)

### Synopsis of the Online Symposium

**Society of General Physiologists (SGP)**

**ION CHANNELS & TRANSPORTERS IN IMMUNITY, INFLAMMATION & ANTITUMOR IMMUNITY**

September 11<sup>th</sup>, 2020 | Online Symposium | [sgp2020.com](http://sgp2020.com)



Organizer:  
Stefan Feske, MD  
NYU School of Medicine



Co-organizer:  
Bimal Desai, PhD  
University of Virginia

**Sophie Hambleton, MD (U Newcastle)**  
ZIP7 – An unexpected player in B cell development

**Susanna Zierler, PhD (LMU Munich)**  
TRPM7 channel-kinase function - from cellular signaling to immune system homeostasis

**Yubin Zhou, PhD (Texas A&M)**  
Optogenetic regulation of CRAC channel function & signaling in immune cells

**Axel Conception, PhD (NYU)**  
Novel ion channel regulators of T cell function

**Michael Cahalan, PhD (UC Irvine)**  
Th17 cell calcium signaling in the spinal cord during murine autoimmune neuroinflammation

**Susan Schwab, PhD (NYU)**  
S1P transporter SPNS2 regulates T cell migration

**David Raulet, PhD (UC Berkeley)**  
Cellular import of immunostimulatory cyclic dinucleotides by folic acid transporters



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**Science Immunology**

**ThermoFisher Scientific**

**NYU Langone Health**

**Department of Pathology**

The online-symposium was held on September 11<sup>th</sup> from 11am to 3pm and it was well attended by over 300 people. It started with an introduction from SGP president Crina Nimigean giving the latest news on the Society: the candidates for the 2021-22 council election, as well as our brand-new Excelsior Award (<https://www.sgpweb.org/awards/excelsior>). Right after, the organizers introduced the speakers, a great selection of scientists that gave informative and stimulating talks leading to inspired discussions online as well as on Twitter (@sgpweb). We heard about the latest research on ZIP-7 transporters and B cell development by Sophie Hambleton (U of NewCastle) or TRPM7 channel-kinase and leukemia by Susanna Zierler (LMU Munich). We were delighted by the amazing microscope footage of T-cells mobility from Michael Cahalan (U C Irvine) and the “home-made” illumination device to study optogenetics presented by Yubin Zhou (Texas A&M). The attendees learned with Axel Conception (NYU Feske lab) about T-cell function and ion channels. Susan Schwab (NYU) showed us how S1P transporter SPNS2 regulates T-cell migration and we were surprised by the results on

immunotherapy in humans vs. mice shown by David Raulet (UC Berkeley). Does any of this sound interesting to you? You can enjoy a recorded version of the symposium at: <https://youtu.be/kVLQmNQQ5Uo>.

On a related note, the organizers informed us that there is a community page for immunologists and ion channel physiologists to discuss latest advances in the regulation, function and physiological roles of ion channels in innate and adaptive immunity, as well as job postings and other ion channels-related topics. Please feel free to submit any ion channel-related postings to the page. <https://www.facebook.com/Ion.Channels/>

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## Question and Answer with the 2021 Symposium Organizers



**Stefan Feske**  
**NYU School of Medicine**

**SGP:** Tell us about your general research interests

**SF:** My lab investigates how ion channels regulate immune responses in humans and mice. In particular, we are studying the molecular function and physiological role of CRAC calcium channels in immune responses to infection, tumors and in autoimmune inflammation. To this end we study patients with inborn errors of CRAC channel function and knockout mice lacking various components of the CRAC channel complex. In addition, my lab is systematically analyzing which ion channels and transporters regulate immune cell function in immunity to infection, antitumor immunity and autoimmune diseases.

**SGP:** What motivated you to organize an SGP symposium?

**SF:** Ion channels are not well studied in immunology because immunologists are not familiar with ion channel physiology and because physiologists studying ion channels have often focused on electrically excitable cell types. This is not only a missed opportunity from the basic science perspective, but also in terms of new drug discovery. There is no conference dedicated to the topic of ion channels and transporters in immunity. The idea for the SGP online symposium came from a smaller meeting on this topic which I had organized at NYU in December 2018 and which was attended mostly by scientists from the New York area. Because of the strong interest and participation in this conference, we decided to approach the SGP to organize a larger four day meeting around this topic.

**SGP:** What was it like organizing an online symposium?

**SF:** The online symposium provided us with the possibility, even during a pandemic, to connect with scientists around the globe who are working on ion channels and transporters in immunology and share data and ideas. While no replacement for the congenial atmosphere and stimulating interactions at an on-site conference, we see the online symposium as a teaser to convince scientists to come to Woods Hole for the annual meeting of the SGP next September.

**SGP:** Share some behind-the-scenes story related to the symposium...

**SF:** The greatest challenge was to create a new conference, the online symposium and next year's annual meeting, and to bring together two different research communities – in our case ion channel physiologists and immunologists – that have traditionally not worked together much. I know from experience how difficult it is to discuss channel function with immunologists or elaborate immunological experiments with physiologists. From the outside, these fields don't have much in common and it is difficult to create excitement for the topic with some colleagues. This is a pity because ion channels and transporters are emerging as important molecular regulators that shape the development of immune cells, and that control immune responses in the context of infections, cancer and autoimmunity.

**SGP:** What do you look forward to the most in the 2021 meeting?

**SF:** Exciting poster sessions, discussions with trainees, lobster and no more Zoom.



**Bimal Desai**  
University of Virginia

**SGP:** Tell us about your general research interests.

**BD:** The long-term goal of my lab is to understand the sensory physiology underlying the rapid coordination of immune cells with non-immune cells. Currently, we are focused on identifying, characterizing and manipulating the key  $\text{Ca}^{2+}$ -conducting ion channels that play a pivotal role in cell-intrinsic processes of cellular defense. We are especially keen on understanding the regulation and function of the ion channel TRPM7 in this context and we attempt to integrate these investigations across biophysical, cellular and physiological scales.

**SGP:** What motivated you to organize an SGP symposium?

**BD:** Stefan's answer captures my motivation very well. The only opinion I would add, perhaps provocatively, is that the most interesting questions in Immunology are now at the interface of other physiological systems. Ion channels and Transporters will emerge as central, and often indispensable components of this complex crosstalk. Stefan and I come from very different training backgrounds, and he is certainly far more accomplished, but we share the passion for this exciting frontier and this motivates us deeply to help develop a community of diversely trained scientists that find this horizon equally exciting.

**SGP:** Share some behind-the-scenes story related to the symposium...

**BD:** One thing I would add to Stefan's answer is that during the organization of the live meeting, and then the inevitable pivot to the online meeting, I found that the topic really captured the attention of trainees in immunology, physiology, neuroscience and biophysics labs.

**SGP:** What do you look forward to the most in the 2021 meeting?

**BD:** Like everyone else I am looking forward to all the new findings that will be reported but most of all, I cant wait to meet everyone in person. No matter how exciting an online symposium is, it can never replicate the mood of a 4-5 day meeting where you get re-infected with the highly contagious enthusiasm of young and driven trainees.

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## Mark your calendar! UPCOMING SGP SYMPOSIA

75th Annual SGP Symposium

***Membrane Proteins in Context: Structure and function in native cells and macromolecular complexes***

September, 2022

Marine Biological Laboratory, Woods Hole, MA

Organizers:

Matt Trudeau, PhD; Cathy Proenza, PhD

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76th Annual SGP Symposium

***Mapping the pain landscape: Working towards new treatments***

## SOBLA UPDATE



SOBLA, the Latin American Biophysical Society, is a sister society to SGP. SOBLA was founded in the mid-eighties by a group of colleagues who sought to open a forum to discuss and promote biophysics in Latin America. SOBLA's mission is to catalyze interactions among Latin American Biophysicists worldwide, providing young scientists with the opportunity to reach biophysicists in Latin America and abroad to establish collaborations and/or internships, in order to promote the development of Biophysics. For more info, visit SOBLA online:

<https://www.sobla.net/>

### ***The 5th 'Friends of SOBLA Lecture' honoring the career and scientific contributions of Dr. Julio Vergara will be held online Friday, February 19, 2021, 4:00 PM UTC***

A brief account of Dr. Vergara's scientific life will be given by Dr. Pancho Bezanilla (The University of Chicago), followed by a lecture by Dr. Ariel Escobar (University of California, Merced). The meeting will take place on Friday February 19th, 2021, at 4 pm UTC (before the 65th Annual and virtual, Meeting of the Biophysical Society). The lecture will be followed by a "Career Transition, Q&A" by Dr. Claudia Moreno (University of Washington). For more information visit <https://www.sobla.net/sobla-annual-lecture.html>

Here is an excerpt from Dr. Escobar about Dr. Vergara's scientific trajectory:

*Julio Vergara was born in Santiago, Chile. He is the son of a family of intellectuals and statesmen. Julio was one of the first scientists in the world to record  $Ca^{2+}$  currents. The experiments were performed in the giant Chilean barnacle, the "Picoroco". This work was the central part of his Ph.D. thesis that was presented at the Catholic University of Chile. After graduating, Julio completed 2 postdocs. The first one was with Toshio Narahashi at Duke University and the second with Stanley Rappaport at the NIH. After completing his postdoctoral training, Julio returned to Chile where he became an Associate Professor in the School of Sciences and the School of Medicine at the University of Chile. In 1976, Julio decided to emigrate to the USA. After being a Visiting scholar at U Penn, he got an Assistant Professor position in the Department of Physiology at UCLA. He spent his whole career at UCLA and reached the Distinguished Professor position of Physiology in the David Geffen School of Medicine.*

*Since the beginning of his career, Julio has been intrigued by the relationship between electrical excitation and mechanical contraction in skeletal muscle. Moreover, Julio has been a leader in the study of skeletal excitation-contraction coupling for more than 40 years. He had made numerous influential contributions to this scientific field. For example, he was the first to identify the delay between the action potential and  $Ca^{2+}$  release from the sarcoplasmic reticulum. He was the first scientist to perform  $Ca^{2+}$  imaging in skeletal muscle. He was the first physiologist to perform flash photolysis and use it as a tool to study the  $Ca^{2+}$  dynamics in skeletal muscle. He was the first to evaluate the propagation of the action potential in the t-tubules using potentiometric dyes. He functionally identified for the first time where  $Ca^{2+}$  release sites were located in a single sarcomere in skeletal muscle. During his whole career, Julio has been a quantitative physiologist. His creativity was evident by his ability to combine a mathematical approach with an experimental method to study excitation contraction-coupling.*

*But the most important feature of Julio as a scientist is not all his scientific accomplishments. The most important thing about Julio is his passion for science. Science is not for tepid people, and Julio has never been one."*

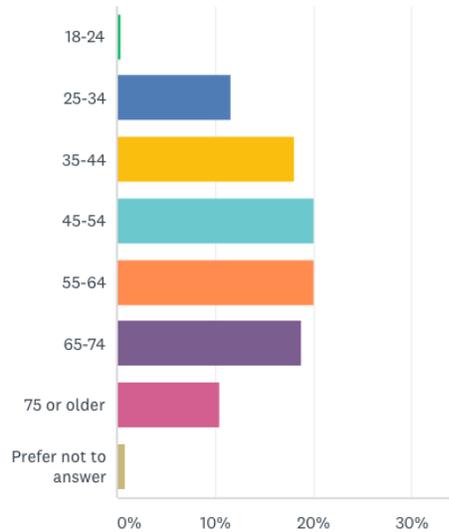
For a more personal perspective, please read Dr. Ariel Escobar's post here: <https://www.sobla.net/blog>

# Demographic Survey Results

This fall, the SGP Diversity, Equity and Inclusivity Committee invited all SGP members to complete a brief anonymous survey to determine the demographics of the membership. Results shown below reflect a 46% response out of 544 active and recently lapsed members. These results will inform our efforts to determine if there are groups underrepresented in the SGP leadership and in SGP sponsored programs, to develop recommendations to address any inequities identified, and to guide SGP efforts and initiatives to address the unique challenges facing members of groups underrepresented in science.

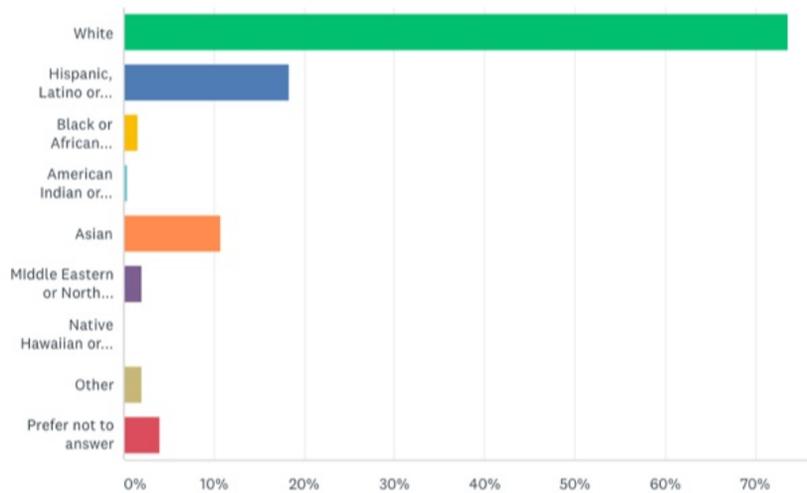
## What is your age?

Answered: 250 Skipped: 0



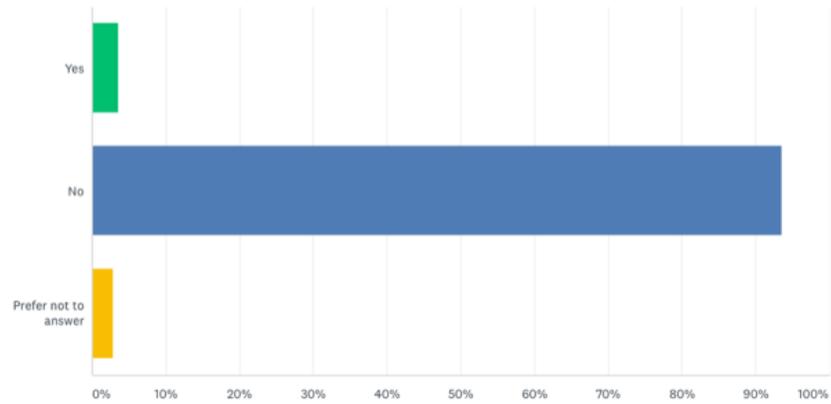
## How would you describe yourself? Please select all that apply.

Answered: 250 Skipped: 0



Do you have a disability (as defined in the Americans with Disabilities Act of 1990, as ame...

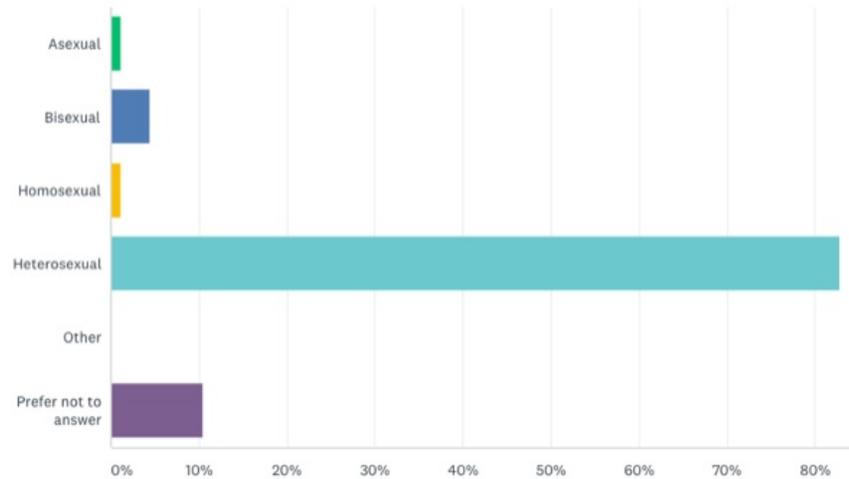
Answered: 250 Skipped: 0



What is your sexual orientation?

What is your sexual orientation?

Answered: 250 Skipped: 0



## SGP Council

### Officers

**President:** Crina Nimigean

2020-2021

**President-Elect:** Jeanne Nerbonne

2020-2021

**Secretary:** Andrew Harris

2020-2022

**Treasurer:** Frank Horrigan

2019-2021

### Councilors

Alessio Accardi, 2019-21

Antoniya Aleksandrova, 2020-21

Anne Carlson, 2021-23

Jorge Contreras, 2020-22

John Del Rosario, 2021-23

Michael Pusch, 2021-23

Janice L. Robertson, 2019-21

Valeria Vasquez, 2020-22



**Executive Director:** Greg Malar

## SGP 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.

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