

Water & Electrolyte Homeostasis Section Newsletter

Keisa Mathis, Secretary/Treasurer



Winter 2023

News from the Chair *Kathryn Sandberg, PhD*



The 2023 inaugural American Physiology Summit was a huge success. The Water & Electrolyte Homeostasis (WEH) Section interests were well represented thanks to the leadership of [Bina Joe](#) and the WEH Program Working Group (PWG). The Summit returns to Long Beach in 2024 and promises to be just as exciting with mostly abstract-driven WEH programming. Be sure to register by January 17, 2024, to take advantage of early bird savings of up to \$210.

The Data Diuresis and the Trainee Award sessions will once again kick off the meeting on Thursday, April 4. The next afternoon, you won't want to miss the New Investigator Award lecture that will be announced this spring and [Katherine \(Kate\) Denton's](#) presentation as our 2024 Ernest Starling Awardee. Congratulations Kate!

Thanks to all the participating WEH Section members who offered their sage advice to the next generation, our first WEH Speed Mentoring event in the PhysioHub was a fantastic hit with trainees and early-stage investigators. So, we are doing it again! Calling all mentors: Be sure to sign up with [Dr. Bina Joe, Program Committee Chair](#)

Please plan to attend the WEH Section luncheon on April 6 from 12 to 2 p.m. We are going back to [L'Opera](#), so get ready for a great Italian meal in the heart of downtown Long Beach. We hope to see you there! [Tickets](#) are \$30 for faculty and \$10 for trainees.

Finally, please take note of these reminders for the spring:

- In January 2024, we will have the opportunity to meet the president-elect and councilor nominees for the upcoming APS elections. Stay tuned for more information about a meet-and-greet event and voting.
- Contact Rasna Sabharwal, our WEH Representative on the American Physiological Society (APS) Committee on Committees, to discuss the committees that align with your interests and how to make your

American Physiology Summit

April 4-7, 2024
Long Beach, CA
Register [here](#)

IN THIS ISSUE:

- Pg. 2 WEH Programming Committee Updates
- Pg. 3 WEH Awards Committee, 2023 Starling Awardee, DSI New Investigator Awardee, and WEH Trainee Awardees
- Pg. 7 WEH Data Diuresis Report
- Pg. 8 WEH Poster Competition Information
- Pg. 10 WEH Membership, FAPS Updates, and Secretary/Treasurer Updates
- Pg. 12 WEH Trainee Advisory Committee Updates
- Pg. 13 American Physiology Summit Call for Proposals 2025
- Pg. 14 Other WEH News
- Pg. 15 WEH Committee Members

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to subscribe to section, committee
and group announcements.



Website:
physiology.org



Contact:
423.439.5625



Email:
keisa.mathis@utsouthwestern.edu

application competitive. Applications will be accepted starting in April with the application window closing in June.

- Becoming a Fellow of the American Physiological Society (FAPS) is a prestigious honor. Reach out to David Brooks, our WEH representative on the FAPS Committee, for advice on how best to position yourself for this esteemed Society designation.

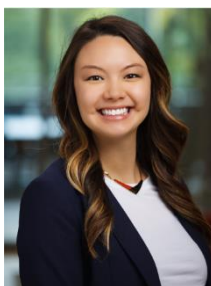
WEH Programming Committee News



*Bina Joe
Chair*



*Michael Hulstrom
Member*



*Justine Abais-Battad
Member*



*Daniel Fehrenbach
Member*

We are looking forward to the second annual American Physiology Summit in Long Beach, California. The WEH section is sponsoring or co-sponsoring several oral and poster sessions at the 2024 Summit, including:

- WEH Section Predoctoral and Postdoctoral Presentations
- WEH Section Data Diuresis
- Ernest H. Starling Distinguished Lectureship of the APS WEH Section
- New Investigator Award Lecture
- Water and Electrolyte Balance-Cell, Organ and Whole Organism Physiology
- Microbiota, Metabolites and Physiology
- Contributions of immune function to disease
- Transporters and channel physiology
- Blood pressure and hypertension
- Cardiac, Vascular and Renal mechanisms
- Aging
- Salt, Sugar, Fats, other Diets and Disease

Important Summit 2024 Dates and Deadlines

Registration and housing sites are now open:

Early bird registration deadline: January 17

Late breaking abstract deadline: January 31

Abstract acceptance notifications: Mid-February

Housing deadline: March 11

Regular registration deadline: March 11

On-site registration rates apply: March 12, through the end of the Summit

See you at the Summit: April 4–7

WEH Luncheon at L'Opera: April 6

WEH Awards Committee News

Meena Madhur, Chair
Carmen De Miguel, Co-chair

We are delighted to announce the winners of the WEH awards from the 2023 APS Summit held in Long Beach, CA.



Big congratulations to:



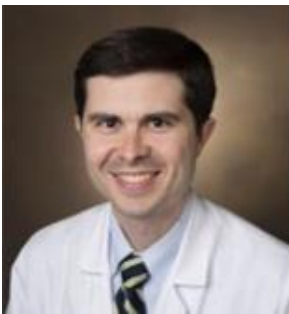
2023 Ernest H. Starling Distinguished Lecturer
Jennifer Sullivan (Augusta University)
Do T cells underlie sex differences in blood pressure control?

This is the most prestigious of the WEH Section awards and is awarded annually to an APS member recognized for exceptional contributions and lifelong dedication to WEH-related research. The recipient is selected by the section as a representative of the best within the discipline.



2023 Leonard Share Award Winner
Carmen Hinojosa-Laborde
(United States Army Institute of Surgical Research)

The Leonard Share Award was established in 2015 to recognize a WEH member who has contributed their time and talents to our section as well as to APS. Nominations for the Leonard Share Award are solicited from the WEH membership and evaluated by a selection committee composed of established WEH members.



2023 DSI New Investigator Awardee
Matthew Alexander
(Vanderbilt University)
*Dysfunction of regulatory immune mechanisms in hypertension:
Integrating insights from humans and animal models*

This award recognizes an outstanding investigator in the early stages of their career. Selection is made by the WEH Awards Committee based on evidence for independence and promise (e.g., grant funding, peer review activities, publications and letters of recommendation).



**Juan Carlos Romero Postdoctoral
Research Recognition Award Recipients—First Place**

Corbin A. Shields, PhD

(University of Mississippi Medical Center)

Inhibition of caspase 1 reduces blood pressure, cytotoxic NK cells, and inflammatory Th17 cells in placental ischemic rats

Congratulations to the other finalists:

Evangeline Deer (University of Mississippi Medical Center)—Adoptive transfer of gestational diabetic CD4+ T cells cause increased glucose, blood pressure and placental mitochondrial dysfunction in a novel rat model of diabetes during pregnancy

Jermaine G. Johnston (University of Florida)—Differential effects of the clock protein BMAL1, diet, and sex on purinergic receptor expression in the distal nephron



**Portland Press Predoctoral Research Recognition Award
Recipients—First Place**

Nermin Ahmed (University of Kentucky)

In utero morphine exposure increases blood pressure in association with increased markers of sympathetic activation in the adult offspring

Congratulations to the other finalists:

Emily Burns (Augusta University)—Divergent sex-specific effects of toll-like receptor 4 and cluster of differentiation 14 in Dahl salt-sensitive hypertension

Xi Wang (University of Mississippi Medical Center)—IL-33 supplementation improves vascular function and maternal hypertension in response to placental ischemia



The Juan Carlos Postdoctoral and Portland Press Predoctoral Research Recognition Awards recognize an outstanding postdoctoral fellow and predoctoral student, respectively. The WEH Awards committee selects the top three abstracts from postdoctoral fellows and the top three abstracts from predoctoral students and invites these six authors to give oral presentations.

Abstracts and oral presentations are scored based on title, background, hypothesis, methods, results, conclusions, novelty and significance.

- The title should be succinct and meaningful.
- The background should put the study into context.
- The hypothesis should be novel or significant.
- The methods should include the model system, sample number, dose, etc.
- The results should include quantitative data with statistical comparisons.
- The conclusions should be supported by the results.
- Novelty should be present in the hypothesis and/or in new methods or techniques applied.
- Finally, significance is based on whether the findings advance our understanding of underlying mechanisms, have translational potential or provide potential therapeutic targets.



WEH Steven M. Horvath Research Recognition Award
Natalie Mathieu (Medical College of Wisconsin)

B-Arrestin2 Deficiency in the Brain Alters Blood Pressure Regulation

The WEH Steven M. Horvath Research Recognition award recognizes the top-ranked applicant from an underrepresented racial or ethnic background based on the quality of their abstract.

WEH Research Recognition Award Winners

- **Ruslan Bohovyk (University of South Florida)**—*Effects of zinc in podocytes and cortical collecting duct in vitro and Dahl Salt-Sensitive rats in vivo*
- **Claudia Edell (University of Alabama, Birmingham)**—*Time restricted feeding in diet induced obesity reverses diurnal T cell rhythms in the kidney*
- **Daniel Fehrenbach (Vanderbilt University)**—*Time restricted feeding reverses western diet-induced disruptions in diurnal blood pressure rhythms and aortic media thickening*
- **Braxton Linder (Auburn University)**—*Hydration status mediates racial differences in circulating copeptin among young adults*
- **Jonna Smith (University of North Texas Health Science Center)**—*A new rodent model of preeclampsia: Pregnant daughters from hypertensive placental ischemic moms have hypertension*
- **Jean Wassenaar (Vanderbilt University)**—*A new rodent model of preeclampsia: Pregnant daughters from hypertensive placental ischemic moms have hypertension*



Congratulations!

Thank you to all the members of the WEH Awards Committee for their hard work in reviewing, scoring and ranking abstracts and judging oral presentations: [Meena Madhur](#) (chair), [Jorge Giani](#) (past co-chair), [Ahmed Al-Marakby](#), [Mariane Bertagnoli](#), [Peter Bie](#), [David Brooks](#), [Denise Cornelius](#), [Carmen De Miguel](#), [Eric George](#), [Justin Grobe](#), [Analía Loria](#), [Pablo Nakagawa](#), [Tengis Pavlov](#), [Carol Moreno Quinn](#) and [Brandi Wynne](#).

Message from the Data Diuresis Chair

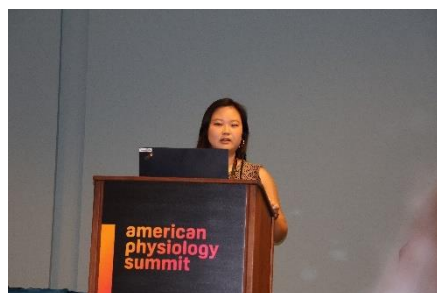
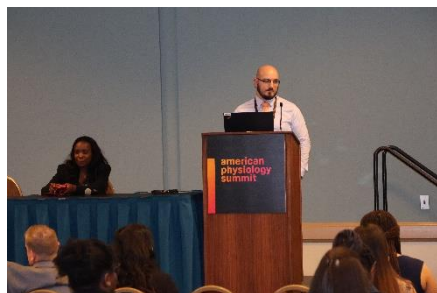
Annet Kirabo, DVM, MSc, PhD

The WEH Section Data Diuresis session during the American Physiological Summit 2023 in Long Beach was a success! This is an award session featuring trainees whose abstracts are selected for a five-minute oral presentation (3min presentation + 2 min questions) followed by a mix-and-mingle networking session with refreshments.

Congratulations to the five awardees:

- **Samuel D. Walton** (Augusta University)—*CD4+ T cells amplify hypertension and renal damage in the Dahl salt-sensitive through an NADPH oxidase 2 (NOX2)-dependent process*
- **Jazmine I. Benjamin** (University of Alabama at Birmingham)—*Circadian disruption via timing of food availability contributes to renal fibrogenesis in male, but not female mice*
- **Soolim Jeong** (Auburn University)—*Does hydration status influence plasma copeptin and ambulatory blood pressure in young adults?"*
- **Olufunto Badmus** (University of Mississippi Medical Center)—*The loss of hepatic Ppara prompts fatty liver disease-induced hypertension and cardiovascular disease*
- **Raddhi Patel** (Georgetown University)—*Upregulation of the renin angiotensin system contributes to renal dysfunction in long-term fed-restricted female mice*

We are looking forward to another exciting session at our next American Physiology Summit 2024 in Long Beach. Hope to see you there!



Understanding the WEH Poster Competition Awards

WEH Poster Presentation Awards were initiated in 2023 at the inaugural American Physiological Society Summit. These awards recognize trainees (i.e., students & postdocs) who give an outstanding poster presentation in a WEH topic category.

Thanks to our WEH members who agreed to serve as a poster judge, we had FIVE judges per poster presenter. Thank you so much for your time and effort to evaluate our next generation!

Congratulations to the three awardees:

WEH Poster Competition—First Place

Brianna Monroe (University of Alabama, Birmingham)

Bmal1 contributes to mean blood pressure rhythms in rats on a low salt diet

WEH Poster Competition—Tied for Second Place

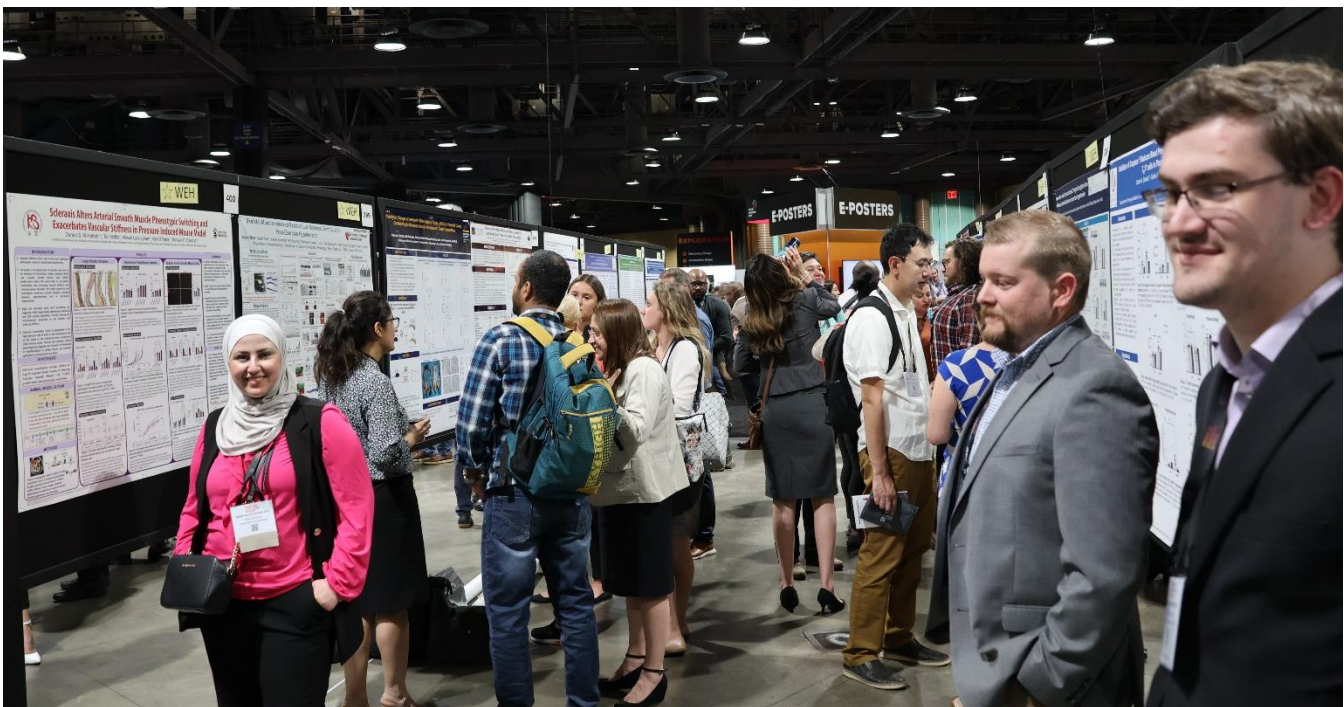
Jordan Mallette (University of Mississippi)

17-beta-estradiol is associated with increased cardiovascular risk in the castrated male rat

WEH Poster Competition—Tied for Second Place

Gertrude Arthur (University of Kentucky)

Expression of human sPPRR in renal collecting duct cells increases blood pressure in female mice independently of its circulating levels



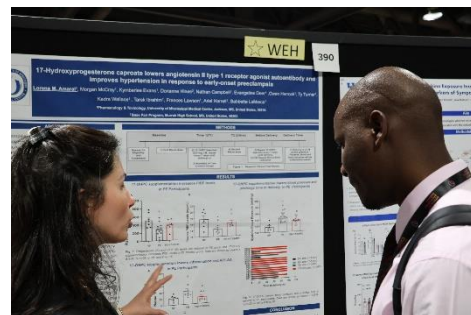
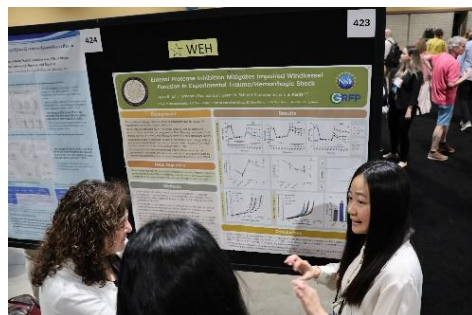
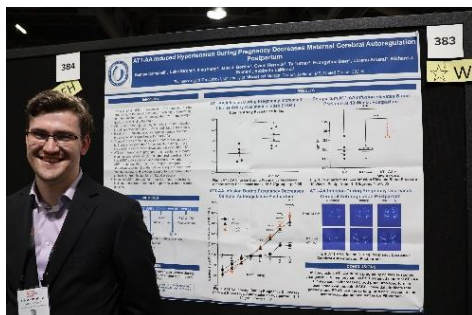
WEH Poster session at Summit 2023

More information: To be eligible for this competition, APS trainees must submit an abstract to a WEH topic category and present the abstract at the American Physiology Summit. The Poster presentation scoring is based on a four-minute poster presentation followed by two minutes for Q&A using the following criteria (nine is perfect).

Scores	1–3	4–6	7–9
Quality of Science	Research Question - not stated, unclear, not based on existing literature Approach/Methods - inappropriate techniques, inadequate controls, lack of rigorous methodology Findings - without scientific merit or physiological value Conclusions - absent, disconnected from findings, unaware of experimental limitations or alternative interpretations	Research Question - clear but mundane, incomplete reference to existing literature Approach/Methods - techniques are less than "state-of-the-art", some missing controls, insufficient or excessive details about techniques, partially rigorous methodology Findings - some scientific merit, some scientific and/or physiological value Conclusions - gaps in interpretation of results, failure to address experimental limitations or alternative interpretations	Research Question - clearly stated, compelling, based on existing literature Approach/Methods - state-of-the-art techniques, innovative approach, appropriate controls, rigorous methodology Findings - strong scientific merit, high impact results Conclusions - logical interpretation of results, awareness of experimental limitations and alternative interpretations
Presentation Quality	Speaking - unclear, poorly paced, excessive jargon Organization - lack of order, poor time management (i.e., significantly under or over time), unprepared for questions	Speaking - some lack of clarity, some pacing problems, occasional jargon Organization - slightly confusing order, slightly over or under time, some difficulty answering questions	Speaking - clear, well-paced, lack of jargon Organization - logical order, appropriate use of time, well prepared for questions
Poster Quality	Graphics - difficult to understand figures and/or tables, poor labeling, irrelevant graphics Organization - incoherent flow through poster sections Aesthetics - visually unappealing, cluttered	Graphics - some confusion over some figures and/or tables, most graphics relevant Organization - some problems with flow through poster sections Aesthetics - slightly cluttered	Graphics - easy to understand figures and/or tables, excellent labeling, relevant graphics Organization - clear flow through poster sections Aesthetics - visually appealing, uncluttered

Award recipients will be notified shortly after the close of the American Physiological Summit. Presenters with perfect scores will receive the WEH First Place Poster Presenter Award. In addition, WEH Outstanding Poster Presentation Awards are given to the top 10% of poster presenters.

Questions? Contact [Kathryn Sandberg, Chair, WEH Section](#) or Ann Marie Bocus, [APS Sections Administrator](#)



Membership Report from WEH Membership At-Large Councilor

Jean Regal, PhD

APS Summit will be here before you know it, with numerous opportunities for our members to interact and experience some fantastic programming. Our primary membership in 2023 stands at 173 with the addition of 2 new postdocs and 2 new grad students since April. Our secondary members have held strong at 266 and this allows us to continue to develop strong programs across the Sections. Encourage your colleagues and trainees to promptly renew their APS membership. Help recruit new members for WEH!! Be sure to tell your colleagues of the many benefits of being a member of APS and the WEH Section, including the numerous awards for regular members and trainees. Encourage them to join APS, choose WEH as their primary section affiliation, and come to Long Beach in April.



News from the WEH FAPS Representative

David Brooks, PhD

I would like to urge members of the section who are not yet APS Fellows, to consider applying for election. The rank of FAPS is an elite member status reserved to honor distinguished leaders who have demonstrated excellence in science, have made significant contributions to physiological sciences and related disciplines and have served the Society. [The criteria for election is provided on the APS website.](#) Applications for the 2025 class will open June or July 2024 and the deadline for submission is September 15th, 2024. As the section's representative to the FAPS Committee, I will work with any member who wishes to apply to ensure that their application provides the best possible opportunity for election.



News from the WEH Secretary/Treasurer

Keisa Mathis, PhD

Let the countdown to Long Beach begin! I'm excited to see all of you at American Physiology Summit 2024. Please try to attend the pre-meeting WEH sessions, including the Trainee Award Symposium and Data Diuresis sessions, on Thursday, April 4, 2024, 1:00-4 pm PDT. These sessions highlight the rising stars of the WEH Section, with an emphasis on our



outstanding trainees and early career investigators and their award-winning research. This event is also the ideal opportunity to network and reunite with friends you may not have seen since the last American Physiology Summit. Don't miss this opportunity!

The WEH Section annual luncheon and business meeting will be held on Saturday, April 4, 2024, 12:00-2 pm PDT at [L'OPERA Italian Restaurant](#). Last year's luncheon at L'OPERA was nice and convenient, so we thought it would be an excellent place to gather again. Tickets go on sale December 13th.



WEH Section finances are healthy thanks to the wonderful generosity of our members. Your donations help the WEH Section support trainees, meritorious research and our annual luncheon and business meeting. I am always available to assist members with WEH donations, so please reach out if needed.



WEH Data Diuresis at Summit 2023



You Can Help Support the WEH Section!

The WEH Section finances remain in good order because of the generous support of our members. As we approach the 2024 Physiology Summit meeting, please consider making a tax-deductible donation to the Leonard Share Endowment Fund (APS will match your donation to this endowment fund) and Carlos Romero Memorial Fund (used for our section awards). [You can always donate to the any of the WEH Section funds online.](#)

WEH Trainee Advisory Committee News



Daniel Fehrenbach



Corbin Shields



Cailin Kellum

Hello from the WEH Trainee Advisory Committee!

We are excited for the upcoming American Physiological Summit where TAC provides focused programming for all trainees in attendance. In 2023, 41.3% of Summit attendees were trainees, demonstrating how important our undergraduate and graduate students and postdoctoral fellows are to the physiology community. As the Summit evolves, we want you to be a part of the change! Did you attend an interesting session last year that you think should make another appearance? Did your abstract not quite fit the offered topics for this meeting? Start preparing session proposals now. Bina Joe and the other members of the WEH Program Working Group would love to help you revise and refine your proposal. Reach out and let us know if you have any questions.

Daniel, Cailin and Corbin will be running our famously successful “Mentoring on the Go” program. Trainees have the opportunity to be paired with APS members who are faculty, work in industry or in another type of non-academic career sector. On your own time, you and your mentor will be able to talk about your science and discuss future career paths. In addition, we are bringing back our new speed mentoring program. Stay tuned for additional updates and details about how to get involved.

Get connected! The WEH Section is [now on X \(Twitter\)](#). Follow us there and connect with your fellow WEH physiologists. Do you have cool science, interesting news, trainee resources or other WEH-related content? Let us know, and we will work to promote you and your science on social media. Also, [follow APS on social media](#) to stay up to date on Society and physiology news.

Lastly, don't miss the WEH Trainee Award session, Data Diuresis and trainee WEH poster competition, some of the most anticipated events of the year.

If you are looking to get involved in the WEH TAC, good news! There will be open positions coming up next year. The lead WEH trainee member sits on the WEH Steering Committee and helps to plan many of the WEH-related events that occur during the Summit. If you have any questions, feel free to contact anyone of us, and watch your email for how to apply.

We look forward to seeing you all at the Summit!

Start Thinking About Summit 2025—Call for Proposals

**Ana Palei, PhD, Councilor At-Large-
Translational Research**



Although the call for foundational science session ideas for the 2025 American Physiology Summit should open in June of 2024, we encourage you to start developing your proposals as soon as possible.

Selection of proposals by the American Physiology Summit Program Working Group are based on the format of session and novelty of scientific concept(s), as well as on aspects related to diversity including cross-disciplinary of topics and affiliation, career stage, age, race, gender and ethnicity of speakers. Thus, proposals covering both basic and clinical sciences and different physiological systems are more likely to be selected.

If you need assistance on developing your session ideas and making them more competitive, please reach out to the chair of the WEH Program Working Group, [Bina Joe](#) and/or to the WEH Councilor-at-Large for Translational Research, [Ana Palei](#).



Other WEH News

Stay Informed!!

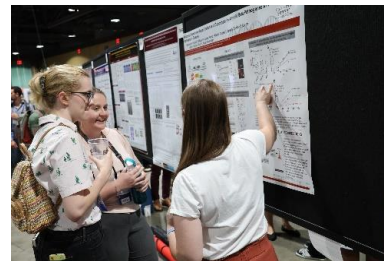
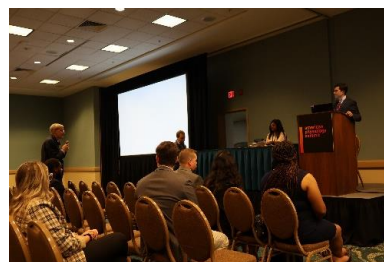
WEH Steering Committee Position

Are you interested in serving on the WEH Section Steering Committee? There is an opening! We are currently searching for a new parliamentarian to replace Carmen de Miguel, as she will soon be the new WEH Awards Subcommittee chair. If you are past the trainee status and interested in serving in this capacity, please reach out to WEH Section Chair, Kathryn Sandberg.

Trainees, there are opportunities for you as well! If you are interested in serving the WEH Section as a part of the Trainee Advisory Committee, please contact Daniel Fehrenbach or Kathryn Sandberg.

More from American Physiological Summit 2023

Thank you to the official photographer of the WEH Section, Dr. Denise Cornelius, for the fabulous photos within this newsletter. She did an excellent job of capturing the essence of our section at Summit 2023!



WEH Section Steering Committee

WEH Section Chair

Kathryn Sandberg, PhD
Georgetown University
sandberg@georgetown.edu

APS Program Working Group

Bina Joe, PhD - Chair
University of Toledo
bina.joe@utoledo.edu

Secretary/Treasurer

Keisa Mathis, PhD
UT Southwestern Medical Center
keisa.mathis@utsouthwestern.edu

Trainee Advisory Committee

Daniel Fehrenbach, PhD - Chair
Vanderbilt University Medical Center
daniel.fehrenbach@vumc.org

Awards Committee

Meena Madhur, PhD - Chair
Vanderbilt University Medical Center
meena.madhur@vanderbilt.edu

Cailin Kellum, BS - Member
University of Alabama at Birmingham
cailin@uab.edu

Carmen De Miguel, PhD
University of Alabama-Birmingham
mdemiguelgarijo@uabmc.edu

Corbin Shields, PhD
University of Mississippi Medical Center
cashields@umc.edu

Committee on Committees

Rasna Sabharwal, PhD
University of Iowa
rasna-sabharwal@uiowa.edu

APS Fellows Committee

David Brooks, PhD
Brooks Pharma Consulting, LLC
david.patrick.brooks@gmail.com

Councilor at Large Advancement

Jasenska Zubcevic, PhD
University of Toledo
Jasenska.Zubcevic@utoledo.edu

Official Photographer

Denise Cornelius, PhD
University of Mississippi Medical Center
dcornelius@umc.edu

Parliamentarian

Carmen De Miguel, PhD
University of Alabama-Birmingham
mdemiguelgarijo@uabmc.edu

Councilor at Large International

Ahmed Elmarakby, PhD
Medical College of Georgia
aelmarakby@augusta.edu

Historian/Communications

Helmut Gottlieb, PhD
University of the Incarnate Word
gottlieb@uiwtx.edu

Data Diuresis Session Chair

Annet Kirabo, DVM
Vanderbilt University School of Medicine
annet.kirabo@vanderbilt.edu

Councilor at Large Translational

Ana Palei, PharmD, PhD
University of Mississippi Medical Center
actpalei@yahoo.com.br

APS Fellowship Sub-Committee

Carmen Hinojosa-Laborde, PhD
United States Army Institute of Surgical Research
carmen.hinojosa-laborde.civ@mail.mil

Membership


Jean Regal, PhD
University of Minnesota-Duluth
jregal@umn.edu

AJP-REGU Editor-in-Chief

Gina Yosten, PhD
Saint Louis University
gina.yosten@health.slu.edu

Stay Connected with the WEH Section Community

Stay up-to-date with WEH section news and connect with other members of the WEH section by registering through APS HUBS. Instructions on how to register can be found [HERE](#).



Water & Electrolyte Homeostasis