

CRepHS Newsletter

November 2023

MESSAGE FROM THE DIRECTOR

Dear CRepHS personnel and associates,

Our Center has significantly expanded over the past few months. I am hopeful for more growth in the field of reproductive health sciences as our now larger team and new labs continue to take on research endeavors with enthusiasm.

From research funding and scientific breakthroughs to collaborations and publications, we are amassing further proof of great things happening. Enjoy reading about the successes and upcoming opportunities to collaborate in this edition of our quarterly newsletter.

Have a joyful holiday season!

Sarah



Sarah K. England, PhD
Alan A. and Edith L. Wolff Professor of Medicine
Vice Chair of Research and Professor,
Department of Obstetrics and Gynecology

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Next issue: February 2024

PERSONNEL UPDATE

NEW TEAM MEMBERS & PROMOTIONS

July

KEVIN RODRIGUEZ (he/him)
Research Technician I, Mullen Lab

YONG WANG, PhD (he/him)
Professor of Ob & Gyn — *promotion*

August

SUMEGHA MITRA, PhD (she/her)
Associate Professor (research track), Khabele Lab

September

RENI AKANDE (she/her)
Research Technician I, Khabele Lab

LEILA ASADI (she/her)
Undergraduate Researcher, Santi Lab

PRIYANKA DEKA (she/her)
Undergraduate Researcher, England Lab

EMILY FELDSTEIN (she/her)
Undergraduate Researcher, Zhao Lab

SARIELA SPIVAK (she/her)
Undergraduate Researcher, Santi Lab

ALEX ZHANG (he/him)
Undergraduate Researcher, Santi Lab

October

FARNERS AMARGANT I RIERA, PhD (she/her)
Assistant Professor

VALERIA GARCIA-FLORES, PhD (she/her)
Senior Scientist, Gomez-Lopez Lab

NARDHY GOMEZ-LOPEZ, PhD (she/her)
Professor

DUSTYN LEVENSON (she/her)
MD/PhD Student, Gomez-Lopez Lab

October (continued)

DEREK MILLER, MS (he/him)
Staff Scientist, Gomez-Lopez Lab

CELIA SANTI, MD, PhD (she/her)
James P. Crane Professor of Ob & Gyn — *promotion*

November

SARA PIETROFORTE, PhD (she/her)
Postdoctoral Research Associate, Amargant i Riera Lab



Rodriguez



Wang



Mitra



Akande



Asadi



Deka



Feldstein



Spivak



Zhang



Amargant i Riera



Garcia-Flores



Gomez-Lopez



Levenson



Miller



Santi



Pietroforte

PERSONNEL Spotlight

Farners Amargant i Riera, PhD
Assistant Professor
CRepHS



The Center for Reproductive Health Sciences is excited to have several new hires onboard for our basic and translational research endeavors. You may have already seen one of our newest Principal Investigators in her lab or around the 10th floor of the BJC-IH building. But, for those who have not yet met her, let us fill you in on Dr. Farners Amargant i Riera. We are pleased to announce her as the spotlighted personnel for this edition of our quarterly newsletter.

From lessons on the Krebs cycle in her early studies of biology, to her first internship in a sperm biology lab, Dr. Amargant i Riera has always been interested in science. She was the first in her family to go to college and received a B.S. in biochemistry and master's degree in biomedicine. Then, she completed her doctorate degree in Cell Biology and Biomedicine at the Center for Genomic Regulation (CRG – Pompeu Fabra University) in Barcelona.

Dr. Amargant i Riera fell in love with reproductive biology during her PhD studies and postdoctoral years at Northwestern University. This topic of interest has remained and grown into her current scientific focus on oocyte quality and reproductive aging. Most recently, her research endeavors have gained momentum with K99/ROO (“Mechanotransduction mechanisms of ovarian aging;” 09/2023) grants from the National Institute of Child Health and Human Development.

Currently, she is loving the freedom to work on what is interesting to her, like bigger picture tasks alongside others with similar research questions. Those areas of interest include determining how oocytes communicate with cells that surround them and recognizing that those cells are equally important when it comes to oocyte quality.

When not in her new “Amargant i Riera” lab at WashU, she keeps busy in the field through teaching, conferences, committees, and editing scientific journals, and looks forward to continuing her efforts in supporting women in science. She also is finding joy in a new city with her husband by frequenting restaurants in the Central West End, working out together, attending live music events, and finding good books to read. ■

Did you know?

Her first name was inspired by the town she grew up in. That small city is called Santa Coloma de Farners, in the Catalonia region of Spain.



UPCOMING OPPORTUNITIES

EVENTS

Friday, Dec. 1st, 9 a.m.
[CRepHS Seminar Series](#); Dr. Meng Wu
 (Wash U)

Monday, Dec. 4th, 2-5 p.m.
[CRepHS/CWHE Open House](#), Connor
 Auditorium FLTC Atrium

Friday, Dec. 8th, 9 a.m.
[CRepHS Seminar Series](#); Dr. Priyanka
 Verma (Wash U)

Friday, Dec. 15th, 11 a.m.
 CRepHS Collaboration Meeting, BJC1H
 10th floor

Friday, Jan. 5th, 2024, 9 a.m.
[CRepHS Seminar Series](#); Dr. Alexa
 Sassin (SRI)

Friday, Jan. 12th, 9 a.m.
[CRepHS Seminar Series](#); Dr. James
 Ashton-Miller (University of Michigan)

Friday, Jan. 19th, 9 a.m.
[CRepHS Seminar Series](#); Dr. Casey
 Cosgrove (Ohio State University)

Friday, Jan. 26th, 9 a.m.
[CRepHS Seminar Series](#); Dr. Ripla Arora
 (Michigan State University)

Friday, Feb. 2nd, 9 a.m.
[CRepHS Seminar Series](#); Dr. Kang Chen
 (Wayne State University)

SAVE THE DATE



May 1st, 2024

**38th Annual Rothman
 Research Symposium**

*Clinical, Basic, and
 Translational Research*

FUNDING

- [The CRepHS Travel Award](#): This award aims to provide support for expenses for conferences where students or trainees are presenting their research. The maximum award is \$1,000. Applications are accepted on a rolling basis.
- View a curated list of funding opportunities relevant to researchers in OBGYN by going to <https://obgyn.wustl.edu/research/resources-funding/>.

JOBS

- [Grant Specialist I](#)
- [Research Technician II – Khabele Lab](#)
- [Research Technician II – Amargant i Riera Lab](#)
- [Postdoctoral Research Associate – Wang Lab](#)
- [Postdoctoral Research Associate – Khabele Lab](#)

SCIENTIFIC ACCOMPLISHMENTS

(from fiscal quarter one)

Doris Duke program scholar

Antonina (Toni) Frolova, MD, PhD, a maternal-fetal medicine physician and Assistant Professor of Obstetrics and Gynecology, applied and was selected to be a scholar in the [Doris Duke](#) COVID-19 Fund to Retain Clinical Scientists (CFRCS) program at Washington University School of Medicine. As an early career physician-scientist, the program will benefit Dr. Frolova's navigation of this stage of her career by offsetting the extraprofessional challenges that arose due to COVID-19.

Dr. Frolova began her one-year scholar role on July 1, 2023. As a scholar, she will receive supplemental support for her research, including education, mentoring, career development, and networking opportunities.

Learn more about the Frolova Lab's research by going to FrolovaLab.wustl.edu. ■

R01 grant for research on preterm birth

Peinan Zhao, PhD, Assistant Professor of Obstetrics and Gynecology, Washington University School of Medicine in St. Louis, received a new five year [R01 grant](#) from the Eunice Kennedy Shriver National Institute of Child Health and Human Development ([NICHD](#)) with co-principal investigator Molly Stout, MD, MS, Associate Professor of Obstetrics and Gynecology, University of Michigan. The R01 grant provides support for their research titled "Fully Quantitative Cervical Elastography for Prediction of Preterm Birth in Nulliparous Patients."

Through the R01, Dr. Zhao will ensure proper conduct of the study at his center and act as the study statistician, responsible for performing data analysis for all study aims. Additionally, Dr. Anthony Odibo, Professor of Obstetrics and Gynecology, Washington University School of Medicine in St. Louis, and Dr. Methodius Tuuli, Professor of Obstetrics and Gynecology, Brown University, are co-investigators of the R01 at their respective institutions.

The grant project started on August 14, 2023, and runs until July 31, 2028. ■

American Cancer Society grant

Sumegha Mitra, PhD, Associate Professor of Obstetrics and Gynecology, received a 3-year, \$754,414 Research Scholar Grant, RSG-22-070-01-TBE, from the American Cancer Society (ACS) to study high-grade serous ovarian cancer (HGSOC). Dr. Mitra's ACS-funded project is titled "Protein Homeostasis Network Regulates Oncogenic Signaling in High-Grade Serous Ovarian Cancer."

"My American Cancer Society grant will study how adaptive mechanisms that maintain protein homeostasis are regulated in HGSOC and its role in cancer relapse and chemoresistant growth," Dr. Mitra states.

The grant term is Aug. 15, 2023, to June 30, 2026. [Click here to learn more about ASC grants](#). ■

SCIENTIFIC ACCOMPLISHMENTS

(from fiscal quarter one)

Career Development Award

Mary (Maggie) Mullen, MD, Assistant Professor of Obstetrics and Gynecology, was awarded a [Victoria's Secret Global Fund for Women's Cancers Career Development Award](#)/AACR. Dr. Mullen's project is titled, "Targeting platinum chemotherapy resistance in ovarian cancer."

With this project, Dr. Mullen will test the central hypothesis that COPS6 contributes to platinum resistance in ovarian cancer by promoting DNA damage repair. In testing this innovative hypothesis, she will obtain key data that can, in the long term, be used to develop novel therapeutic strategies for ovarian cancer.

The project period is Sept. 1, 2023, to Aug. 31, 2025, with funding of \$206,000.

Read more about Dr. Mullen's research at MullenLab.wustl.edu. ■

R01 grant for research on maternal opioid use

Jeannie Kelly, MD, MS, Associate Professor of Obstetrics and Gynecology, and **Yong Wang, PhD**, Professor of Obstetrics and Gynecology, were awarded an R01 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD). The project is titled, "The Opioid in Pregnancy: Imaging of Oxygenation, Inflammation, and Development in Brain & Placenta Project (OPIOID BPP)."

Sites and co-investigators for the project include: Washington University in St. Louis (Peinan Zhao, Cynthia Ortinau, Mai He); Children's Boston Hospital (Ali Gholipour-Baboli, Davood Karimi); and Research Foundation for Mental Hygiene Inc. (Nanbert Zhong).

The project period is Sept. 1, 2023, to Aug. 31, 2026, with total funding of \$2,337,729. ■

R21 grant for labor research

Antonina Frolova, MD, PhD, Assistant Professor of Obstetrics and Gynecology, was awarded an R21 for her project titled, "Metabolic mechanisms of uterine contractility in labor."

The objective of the project is to determine the mechanisms driving obesity-related labor dysfunction. This research may lead to new options for pharmacologic and behavioral interventions to optimize myometrial energy utilization during labor, which will allow for modifying labor management practices in order to optimize maternal and neonatal outcomes for millions of women with obesity.

The project period is Sept. 5, 2023 to Aug. 31, 2025, with funding of \$427,625.

Visit FrolovaLab.wustl.edu to learn more about her research. ■

SCIENTIFIC ACCOMPLISHMENTS

(from fiscal quarter one)

AWARDS, APPOINTMENTS, & SPECIAL EVENTS

- [Antonina Frolova, MD, PhD](#), started a new role on July 1st as an Associate Program Director for the Maternal-Fetal Medicine (MFM) fellowship.
- [Erin Reinl, PhD](#), was accepted into the 2023-2024 [Teaching Scholars Program](#) (TSP) cohort. The TSP is a 12-month certificate program designed to enhance knowledge and skills, and develop future leaders in healthcare education with a focus on core components of educational scholarship and curriculum development. Dr. Reinl will complete the program in September 2024.
- [Viju Gupta, PhD](#), and **Audrey Johnston** were selected to participate in the Emerging Leaders Program (ELP) through the WashU Institute for Leadership Excellence. Participants graduate with the skills, connections and support essential to grow and evolve as a leader at WashU. Learn more at <https://evcadministration.wustl.edu/leadership-institute/>.
- In August, Dr. **Yiqi Lin** (Wang Lab) successfully defended his PhD thesis titled “Patient-Specific Multi-Scale, Multi-Physics Simulations of Human Uterine Contractions and Peristalsis during Pregnancy and the Menstrual Cycle”.
- [Dr. Yong Wang’s](#) Human Placenta Project (HPP) research has been summarized for lay audiences on the The *Eunice Kennedy Shriver* National Institute of Child Health and Development’s (NICHD) website as part of the HPP showcase. [Click here](#) to learn more about the HPP-funded project.

PUBLICATIONS*

- [RAD51 Foci as a Biomarker Predictive of Platinum Chemotherapy Response in Ovarian Cancer](#). Compadre AJ, van Biljon LN, Valentine MC, Llop-Guevara A, Graham E, Fashemi B, Herencia-Ropero A, Kotnik EN, Cooper I, Harrington SP, Kuroki LM, McCourt CK, Hagemann AR, Thaker PH, Mutch DG, Powell MA, Sun L, Mosammaparast N, Serra V, **Zhao P**, Lomonosova E, **Khabele D**, **Mullen MM**. *Clin Cancer Res*. 2023 Jul 5;29(13):2466-2479. doi: 10.1158/1078-0432.CCR-22-3335. PMID: 37097615; PMCID: PMC10320470.
- [Ovarian Cancer Patient-Derived Organoid Models for Pre-Clinical Drug Testing](#). Fashemi BE, van Biljon L, Rodriguez J, Graham O, **Mullen M**, **Khabele D**. *J Vis Exp*. 2023 Sep 15;(199). doi: 10.3791/65068. PMID: 37782106.

Continued on next page...



Ovarian cancer.

SCIENTIFIC ACCOMPLISHMENTS

(from fiscal quarter one)

PUBLICATIONS* *...continued*

- [Genetic characterization of primary and metastatic high-grade serous ovarian cancer tumors reveals distinct features associated with survival.](#) Kotnik EN, **Mullen MM**, Spies NC, Li T, Inkman M, Zhang J, Martins-Rodrigues F, Hagemann IS, McCourt CK, Thaker PH, Hagemann AR, Powell MA, Mutch DG, **Khabele D**, Longmore GD, Mardis ER, Maher CA, Miller CA, Fuh KC. *Commun Biol.* 2023 Jul 3;6(1):688. doi: 10.1038/s42003-023-05026-3. PMID: 37400526; PMCID: PMC10318066.
- [SLO3: A Conserved Regulator of Sperm Membrane Potential.](#) Lyon MD, Ferreira JJ, Li P, Bhagwat S, Butler A, Anderson K, Polo M, **Santi CM**. *Int J Mol Sci.* 2023 Jul 7;24(13):11205. doi: 10.3390/ijms241311205. PMID: 37446382; PMCID: PMC10342799.
- [Deep representation learning identifies associations between physical activity and sleep patterns during pregnancy and prematurity.](#) Ravindra NG, Espinosa C, Berson E, Phongpreecha T, **Zhao P**, Becker M, Chang AL, Shome S, Marić I, De Francesco D, Mataraso S, Saarunya G, Thuraiappah M, Xue L, Gaudillière B, Angst MS, Shaw GM, Herzog ED, Stevenson DK, **England SK**, Aghaeepour N. *NPJ Digit Med.* 2023 Sep 28;6(1):171. doi: 10.1038/s41746-023-00911-x. PMID: 37770643; PMCID: PMC10539360.
- [Stromal DDR2 promotes ovarian cancer metastasis through regulation of metabolism and secretion of extracellular matrix proteins.](#) Schab AM, Greenwade MM, Stock E, Lomonosova E, Cho K, Grither WR, Noia H, Wilke D, **Mullen MM**, Hagemann AR, Hagemann IS, Thaker PH, Kuroki LM, McCourt CK, **Khabele D**, Powell MA, Mutch DG, **Zhao P**, Shriver LP, Patti GJ, Longmore GD, Fuh KC. *Mol Cancer Res.* 2023 Aug 1:MCR-23-0347. doi: 10.1158/1541-7786.MCR-23-0347. Epub ahead of print. PMID: 37527178.
- [Social and psychological adversity are associated with distinct mother and infant gut microbiome variations.](#) Warner BB, Rosa BA, Ndao IM, Tarr PI, Miller JP, **England SK**, Luby JL, Rogers CE, Hall-Moore C, Bryant RE, Wang JD, Linneman LA, Smyser TA, Smyser CD, Barch DM, Miller GE, Chen E, Martin J, Mitreva M. *Nat Commun.* 2023 Sep 20;14(1):5824. doi: 10.1038/s41467-023-41421-4. PMID: 37726348; PMCID: PMC10509221.



A mother in the labor and delivery floor at Parkview Tower.
Photo by: Matt Miller/Washington University School of Medicine

*Labs in bold.

COLLABORATIONS

(from fiscal quarter one)

CRepHS COLLABORATION MEETING



Popsicles and games abounded at the CRepHS Collaboration meeting in August. The next meeting will be a holiday potluck on Friday, Dec. 15th, at 11 a.m. See you there!

RESEARCH ADMINISTRATOR APPRECIATION DAY



In recognition of National Research Administrator Day, Washington University's Research Education and Information hosted a new, all-day research administration appreciation and education event at the Eric P. Newman Education Center in September.

This event included numerous sessions and topics within research administration as well as opportunities for team building, networking, and recognition of the important role research administrators play in supporting the university's research mission.

SOCIAL CONNECTIONS



X (formerly Twitter)

[@DKhabeleMD](#)

[@Englandsk785](#)

[@FarnersRiera](#)

[@FrolovaToni](#)

[@MaggieMullenLab](#)

[@nardhygomez](#)

[@santi_lab](#)

[@WashU_OBGYN](#)

[@yongwangwashu](#)



Instagram

[@england.sk](#)

[@washu](#)

[@washumedicine](#)

[@washuobgyn](#)

COLLABORATE WITH US

Join us for CRepHS Monthly Center Collaboration Meetings, held on the 10th floor of the BJC-IH building. Contact Audrey Johnston to learn more.

SUBMIT YOUR NEWS

[News](#) for consideration is always welcome! Email ejulie@wustl.edu.

CONTACT CRepHS

Visit our website at

<https://reproductivesciences.wustl.edu/>

or email questions and feedback related to CRepHS to audreyj@wustl.edu.

About CRepHS

The [Center for Reproductive Health Sciences](#) (CRepHS) aims to improve the overall health of women and men by making reproductive health a priority in investigative and translational science. As the basic science division of Washington University School of Medicine's [Department of Obstetrics and Gynecology](#), CRepHS' research productivity is accomplished through highly collaborative interdisciplinary lab environments.

The Center's current research emphasis includes basic biology of reproductive health; multiple approaches to developmental biology with concentrations in cell biology, animal models, and genetics; studies of healthy human development; developmental endocrinology; neurosciences; translational imaging; medical device development; reproductive cancers; and population health research.