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Fimbriz

THE QUARTERLY NEWSLETTER OF THE

DEPARTMENT OF OBSTETRICS, GYNECOLOGY and Reproductive Sciences



COVID-19 A Year into the Pandemic



Changes to Obstetrics after a year of COVID experience. Page 2

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Letter from the Chair

Dear Colleagues,

The UCSD Department of Obstetrics, Gynecology and Reproductive Sciences is actively preparing to welcome our new department chair, Cynthia Gyamfi-Bannerman, MD on July 15, 2021.

Dr. Gyamfi-Bannerman, a specialist in Maternal Fetal Medicine, was selected from a

highly competitive national pool of applicants.

As you know, UCSD had led mass vaccination efforts that have resulted in nearly 25% of San Diegans receiving COVID vaccinations. We are grateful to the many department members who volunteered in a variety of roles to assist with this successful, ongoing vaccination effort. This public health progress should allow us to welcome Dr. Gyamfi-Bannerman and her family, as well as c elebrate being together (safely and outdoors) at our summer picnic on August 22.

Our faculty has had another extraordinarily productive year (see link for Department CV above). In addition, multiple faculty members successfully competed for extramural funding to continue their research programs. While the work of our research teams required modification due to public health regulations, our researchers creatively used the "different way of working" to write grant applications, advance science, mentor early career researchers and effectively disseminate their work.

The ingenuity of our faculty facilitated effective restructuring of patient care, education and research missions. Our department's leadership team (Vice Chairs and Division Directors) came together to support our faculty, students and staff. I thank them for their ability to problem solve, think creatively and implement the changes that the pandemic required.

Our legacy for strong clinical training continues with selection of 6 new residents and 5 new fellows (see p. 6). The challenges of virtual interviews were no barrier for our UCSD OG+RS programs. We look forward to welcoming Drs. Meurice, Suyama, Bondre, Pinson, and Rivas who join our fellowship programs, and Drs. Cowles, Desai, Koenig

CLICK: UC SAN DIEGO OBSTETRICS, GYNECOLOGY & Reproductive Sciences Dept. Curriculum Vitae

If thik har, Ottum and Schueler to our residency program. Our department's Culture and Justice Initiative continues to grow with over 30 ambassadors, many of whom underwent formal anti-racism training this year in a 7-part series. As we progress in our work toward becoming anti-racist, our department members are addressing multiple initiatives that will improve our culture and promote justice, such as inclusion of health and social injustice aspects of patient care during our M+M conference presentations.

The philanthropic needs of our department are growing. We are establishing a giving catalog to facilitate your generous support at various levels. Please consider a donation that can support the academic missions of the UCSD Department of Obstetrics, Gynecology and Reproductive Sciences. Your gift allows us to continue essential work and increase our impact on patient care, our community, education and research. Thank you!

> LINDA BRUBAKER, MD Clinical Professor and Interim Chair Department of Obstetrics, Gynecology & Reproductive Sciences

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UCSD OBSTETRICS, GYNECOLOGY & REPRODUCTIVE SCIENCES

Pregnancy and the first year of COVID

The world as we know it changed in the early days of 2020 as the novel SARS-COV-2 started to blanket the globe. Sensing that this virus was not just a theoretical threat but would eventually (and at alarming speed) spread to San Diego, we, the fellows, started gathering data from the news, medical journals, webinars, and colleagues across the country to prepare our armamentarium. Almost a year later, the UCSD MFM division remains vigilant in reviewing various societal guidelines and recommendations.

All patients entering the health system are screened for symptoms, and employees are routinely tested. We introduced telemedicine and are working diligently to arrange appropriate telemedicine visits. Some laboratory and ultrasound protocols were temporarily amended. We recognized that L&D is a particularly high-risk setting, and started testing all obstetrical admissions by mid-April. We advocated that the second stage of labor is an aerosolizing procedure, implementing policies regarding PPE usage. Guidelines for isolation, safe return to ambulatory care, and screening for potential sequelae were developed.

There is still so much unknown regarding this virus and the disease sequelae. UCSD has multiple on-going research projects involving COVID-19. At UC San Diego, we are enrolling pregnant patients diagnosed with COVID-19 into a longitudinal biospecimen study and encouraging all providers to discuss participation with their patients. We are investigating the pregnant immune response to COVID-19 infection and subsequent placental changes.

The first data pertaining to COVID-19 in pregnancy were small case series from Wuhan, China. Initially, the severity of illness appeared similar to that seen the non-pregnant population (Zaigham, April 2020). As larger series became available, data suggest that pregnant women may be at increased risk of severe disease (Ellington, June 2020). The largest report to date comes from the CDC which included data from 30,415 pregnant women with symptomatic COVID-19. This study found that pregnant women infected with COVID-19 are at increased risk for ICU admission (aRR = 3.0), intubation (aRR = 2.9), ECMO (aRR = 2.4), and death (aRR = 1.7). Based on this data, the CDC has included pregnant people in their list of "high risk" populations (MMWR, October 2020).

The Pregnancy coRonavIrus Outcomes RegIsTrY (PRIORI-TY) is the first nationwide registry to include mostly non-hospitalized patients. From this, we learned that pregnant women have an atypical presentation: cough (20%), sore throat (16%) and body aches (12%). Fever was an uncommon first symptom (12%), and loss of taste or smell was rarely the initial symptom. The median duration of symptoms was 5 weeks (Afshar, December 2020).

Currently, we know that pregnant patients are at increased risk of developing severe disease and death. Pregnant patients with comorbidities such as obesity, diabetes, and older age are at even higher risk of morbidity and mortality. Notably, health disparities persist in the obstetrical population just as it does in the general population.

Vertical transmission has been one of the most debated topics since the pandemic began. A case report from France published the first case of vertical transmission (Vivanti, July 2020). Since ACE-2 receptors exist in placental tissue, vertical transmission seems biologically plausible.



From left to right: Kathy Zhang-Rutledge, Dora Melber, Lauryn Gabby

Continued on Page 3.

Covid the first year, con't

Published series including a cohort of 70 laboring women with documented COVID-19 revealed that placental pathology demonstrated higher rates of fetal vascular malperfusion(Prabhu 2020). Another cohort of 101 neonates, who were born to mothers with symptomatic COVID-19 in labor, found that only 2% of neonates tested positive after birth, and none had any clinical evidence of coronavirus disease despite rooming-in with mothers and breastfeeding (Dumitriu, October 2020). While evidence of fetal vascular malperfusion on placenta pathology raises concerns, mixed results exist regarding the risk of preterm delivery and stillbirth. The vertical transmission incidence is only 1-2%, and neonates of infected mothers generally do well. Couplet care and direct breastfeeding are likely safe.

References

1. Zaigham M, Andersson O. Maternal and perinatal outcomes with COVID-19: A systematic review of 108 pregnancies. Acta Obstet Gynecol Scand. 2020; 99(7): 823-829.

2. Ellington S, Strid P, Tong VT, et al. Characteristics of Women of Reproductive Age with Laboratory-Confirmed SARS-CoV-2 Infection by Pregnancy Status — United States, January 22–June 7, 2020. MMWR Morb Mortal Wkly Rep 2020; 69:769–775.

3. Zambrano LD, Ellington S, Strid P, et al. Update: Characteristics of Symptomatic Women of Reproductive Age with Laboratory-Confirmed SARS-CoV-2 Infection by Pregnancy Status —United States, January 22–October 3, 2020. MMWR Morb Mortal Wkly Rep 2020; 69:1641–1647.

4. Afshar Y, Gaw SL, Flaherman VJ, et al. Clinical presentation of corona virus disease 2019 (COVID-19) in pregnant and recently pregnant people. Obstet Gynecol. 2020; 136(6):1117-1125.

5. Vivanti AJ, Vauloup-Fellous C, Prevot S, et al. Transplacental transmission of SARS-CoV-2 infection. Nat Commun. 2020; 11(1):3572.

6. Prabhu M, Cagino K, Matthews KC, et al. Pregnancy and postpartum outcomes in a universally tested population for SARS-CoV-2 in New York City: a prospective cohort study. BJOG. 2020; 127(12):1548-1556.

7. Dumitriu D, Emeruwa UN, Hanft E, et al. Outcomes of neonates born to mothers with severe acute respiratory syndrome coronavirus 2 infection at a large medical center in New York City. JAMA Pediatr. *Published online Oct 12, 2020.*

UC San Diego's CO-CREATE Project

(Community-driven Optimization of COVID-19 testing to Reach and Engage underserved Areas for Testing Equity)

Aimed at improving access to COVID-19 testing in the San Ysidro community. CO-CREATE is a partnership between UC San Diego, San Ysidro Health (SYH), and The Global Action Research Center (The Global ARC). Centered at SYH's Maternal and Child Health Center, CO-CREATE is focused on increasing COVID-19 testing in pregnant women and children, as well as their families and other community members.



CO-CREATE is being carried out in two phases – an initial co-creation phase and a second testing phase. In the first phase of CO-CREATE, which was launched in December 2020, key stakeholders are helping to identify barriers and facilitators to testing by participating in surveys and interviews, and serving on our Community and Scientific Advisory Board. These stakeholders include prenatal patients, the parents/caregivers of pediatric patients, obstetric and pediatric clinical care providers, community members, scientists, and policymakers. Feedback from this initial phase of the study is being used to shape the strategies and logistics for the second phase, and includes prioritization of decentralized testing across different sites in San Ysidro and broader testing of different populations in the community.

CO-CREATE, Con't

In preparation for the launch of the testing phase in March 2021, the CO-CREATE team has been setting up a streamlined system that can be deployed at different sites across the south San Diego community of San Ysidro for registration, collection of samples in bar-coded tubes, and transport of samples to the UCSD EXCITE lab for clinical COVID testing.

Results will be available in the SYH electronic medical record by the following morning, and will be sent to participants by text, email, or phone. Participants with positive results will be contacted by phone by a clinical provider and free testing offered to their contacts. To make this fast and flexible testing system possible, the CO-CREATE team has put together a mobile testing unit and enabled the SYH electronic medical record system to send orders and receive results from the UCSD EXCITE lab.

To learn more about **CO-CREATE**, please visit our website at:

CO-CREATE-RADX.com

CO-CREATE is funded by a \$4.95M grant from the National Institutes of Health as part of the RADx-UP Rapid Acceleration of Diagnostics – Underserved Populations) initiative. CO-CREATE is jointly led by Dr. Robert Tukey, Professor in the Department of Pharmacology and the Director of the Superfund Research Center at UC San Diego, and Dr. Louise Laurent, who is a Professor and Vice-Chair of Translational Research in the Deptartment of Obstetrics, Gynecology, and Reproductive Sciences and Co-Director of the Center for Perinatal Discovery at UC San Diego. The CO-CREATE team includes experts in community outreach, dissemination and implementation science, epidemiology, infectious disease, obstetrics, pediatrics, collection and analysis of big data, and high-throughput clinical COVID testing, and depends on the enthusiasm and hard work of our clinical research coordinators, research associates, and interns.

Bench & Bedside

Unlinking Endometriosis Pain and Amenorrhea

Endometriosis is associated with different types of pain that can arise from inflammation, neuropathy, or combinations of factors. Different pain pathways may cause different types of pain experienced by women with this disease. It has been unclear whether molecular approaches to control pain experienced by patients with endometriosis would therefore require several agents targeting different pain mechanisms.

To explore this, Professor Sanjay Agarwal and colleagues examined data from 2 randomized, placebo-controlled trials, Elaris Endometriosis (EM)-I and EM-II. Premenopausal women in the trials received the gonadotropin releasing hormone (GNRH) antagonist elagolix. All participants complained of moderate to severe endometriosis-associated pain at the study onset, then recorded data daily.

Women taking placebo showed an improvement in symptoms, dropping from 81% expeiencing pain on menstrual days to just over 61%, while women taking either two doses of GNRH antagonist dropped to less than 40% on menstrual days. Significantly, the reduction in pain did not require complete suppression of bleeding, clearly dissociating these two manifestations of endometriosis. Dr. Agarwal points out that could spare patients from adverse effects of treatments currently in use, including hypoestrogenism. The challenge the conventional association of amenorrhea with symptom relief.

Other members of the team publishing the work were from the Ottawa Hospital Research Institute, in Canada, Eastern Virginia Medical School, The Colorado Center for Reproductive Medicine, and AbbVie Inc, the sponsor of the trial.

1. Agarwal S. al., J Pain Res. 2021 14:263-271. doi: 10.2147/JPR.S284703.

Fimbria Quarterly

Resident Match Results

The Match was announced on March 19th. Welcome to our new interns, who join us in July.



Keri Cowles, MD University of North Carolina

Mili Desai, MD UC San Diego



Rafa Ifthikhar, MD University of Pittsburgh

Jerry Koenig, MD Tufts University





Fimbria

QUARTERLY

Payton Ottum, MD UC San Diego

Kellie Schueler, MD University of Chicago



FETAL MEDICINE Kelsey Pinson, MD (UC San Diego)

MATERNAL.





REPRODUCTIVE ENDOCRINOLOGY & INFERTILITY Renee Rivas, MD PhD (Yale University)

FEMALE PELVIC MEDICINE & RECONSTRUCTIVE SURGERY Julie Suyama, MD, PhD (University of Pennsylvania)



Congratulations to our matching fellows, who will also be joining us in July.

GYNECOLOGIC ONCOLOGY Ioana Bondre, MD (UT Houston)



COMPLEX FAMILY PLANNING Marielle Meurice, MD (UC Irvine)

UCSD OBSTETRICS, GYNECOLOGY & REPRODUCTIVE SCIENCES





Congratulations to Steven Plaxe, MD

of the UC San Diego Department of Obstetrics, Gynecology, & Reproductive Sciences. who has been elected Director of the Division of Gynecologic Oncology American Board of Obstetrics and Gynecology (ABOG)

New Perinatal Discovery Center Hits Milestone

The UC San Diego Center for Perinatal Discovery has completed its first call for pilot projects in clinical and translational investigation. Pilot Project Awards provide exploratory funding which lasts one year and may not exceed \$10,000. Successful applicants will be informed soon. • perinataldiscovery@health.ucsd.edu



Department Announces New Chair

Following a nationwide search, The UC San Diego Department of Obstetrics, Gynecology & Reproductive Sciences announced that

Cynthia Gyamfi-Bannerman, MD

has been selected as the new Chair of the Department, starting in the summer of 2021.

Congratulations to Mark Lawson, PhD

of the UC San Diego Department of Obstetrics, Gynecology, & Reproductive Sciences who has been reappointed as the Director of the University of California President's Postdoctoral Fellowship Program for a second consecutive term.

Congratulations to Renee Sullender, MD

of the UC San Diego Department of Obstetrics, Gynecology, & Reproductive Sciences Dr. Sullender has been elected as the ACOG Junior Fellow Section Vice Chair Dr. Sullender will assume the role of Chair in March of 2022.

Funding News

Lindsey Burnett, MD, was awarded the annual IUGA Research Grant in basic science, for her proposal; Recurrent Urinary Tract Infection: The Urinary Microbiome and Metabolomic Profile. **Kellie Breen-Church, MD,** was awarded a **new R21**: Transcriptomic and epigenomic basis for reproductive dysfunction during stress.

Sheila Mody, MD, received a grant from the CYSTIC FIBROSIS FOUNDATION: CF-related symptoms and the menstrual cycle: Are they related?"

Marianna Alperin, MD, new R01: Pathways underlying recovery of injured urethral sphincter & a novel regenerative biomaterial intervention.

Amanda Lewis, PhD, and Warren Lewis, PhD, received new R21 funding: Roles of vaginal bacteria in bladder exfoliation and recurrent UTI.

Kina Thackray, PhD received a **new SBIR grant** (with Onegevity), A Multi-Omic Platform for Polycystic Ovary Syndrome Characterization and Management.

UCSD OBSTETRICS, GYNECOLOGY & REPRODUCTIVE SCIENCES

Trainee Profiles: Selina Sandoval & Renee Sullender

Fimbria Quarterly (FQ) talked with two of our newer trainees, Family planning fellow Selina Sandoval and intern Renee Sullender, to ask them about their thoughts when picking UCSD's Department of Obstetrics and Gynecology to prepare them for their future careers.

FQ: Where did you grow up?

SS: I grew up in Northern California, in Sacramento, but did my undergraduate training in Arizona.

RS: I was further away, starting in Birmingham Alabama and then doing my undergrad studies at the University of North Carolina.

FQ: So, you are both familiar with hot places. I imagine that San Diego was temperate for both of you when you interviewed. Does anything stand out about the interview process?

RS: Absolutely. Christina Lam drove me home after the interview dinner. She had a smile on her face the entire time - but she was doubled over from a ruptured cyst! Talk about dedicated.

SS: No emergencies during my interview visit. I was more struck by how well rounded the program was. I was also impressed by the research support already in place. And, certainly, I appreciated the pleasant work environment and the San Diego scenery. All of this made San Diego very attractive to me during the interview.

FQ: And you matched!

SS: I did! These past months the department here has been incredibly welcoming. I appreciate the amazing people and all the support offered to the fellows.





Selina

FQ:The Family Planning

fellowship is a new extension of UC San Diego's emphasis on forward thinking. Happy to have talented tainees here to lead the future, Selina.

What ultimately attracted you here, Renee?

RS: For me it was meeting happy residents who had similar interests and priorities. They seemed like they would be both great to work alongside and fun friends! This comraderie complemented the total training delivered at UC San Diego. Highlights for me personally were the family planning experiences, the surgical training, and the research opportunities offered here.

FQ: Have either of you brought any hobbies with you to San Diego?

SS: Exercising, sewing and crafting, certainly. Now that I am in San Diego, I definitely try to incorporate my dogs into as many other activities as possible.

RS: My newest hobby since moving to San Diego is surfing! Otherwise, I like hiking, biking, yoga, traveling, and reading.

FQ: UC San Diego has trained residents for more than 50 years - since its inception. The ACGME acredited program is highly competitive, with over 600 applicants vying for 6 spots annually. We are very happy to have you take claim one of these slots.

MEET THE PROJECTS SCIENTISTS: Critical to our research mission

Assistant Project Scientists are extremely valuable members of our research enterprise in the department. These Ph.D. researchers each have at least five years of postdoctoral experience. They provide leadership, mentoring, and research prowess within our research laboratories. In part one of this two part series, we will meet Dr. Peter De Hoff, Karen Tonsfeldt, and Abhi Sohni. Please let them introduce themselves to you!

PETER DE HOFF, PHD Assistant Project Scientist, Louise Laurent Lab

I am currently an Assistant Project Scientist in Dr. Louise Laurent's laboratory. I utilize my background in molecular biology tools-development and robotics for a number of



small RNA *next generation sequencing* biomarker discovery projects, including the early detection of pre-eclampsia.

At present, I serves as the operations technical lead of the UCSD EXCITE COVID-19 asymptomatic population testing program. Additionally, I work in *next generation sequencing* protocol development for the Rapid High Throughput SARS-CoV-2 Amplicon Sequencing Program which aims to provide genomic epidemiological surveillance.

KAREN TONSFELDT, PHD

Assistant Project Scientist, Pamela Mellon Lab

I was born and raised in Bend, Oregon, and completed my undergraduate degrees at Oregon State University. I received my PhD in Neuroscience from Oregon Health

Science University in 2014 with Dr. Susan Ingram, where I studied sex differences in the descending modulation of pain. I leapt at the opportunity to join Dr. Pamela Mellon's lab as a postdoc in 2015, when my husband matched for residency at UCSD.My project in Dr. Mellon's lab focuses on the circadian regulation of the preovulatory luteinizing hormone surge.



I am particularly interested in identifying how the circadian clock affects kisspeptin and gonadotropin-releasing hormone neurons. My work has been funded by the Training in Reproductive Sciences T32 and an individual F32 from NICHD. I have also been a mentor for the class BioClock Studio, and the trainee representative on UCSD's Center for Circadian Biology executive committee. I transitioned to project scientist in the summer of 2020.

ABHISHECK SOHNI, PHD Assistant Project Scientist, Miles Wilkinson Lab

I come from India and I obtained my PhD in Biomedical Sciences with focus on Molecular and Stem Cell Medicine from KU Leuven (Catholic University of Leuven), Belgium. My research is broadly focused on gene regula-



tion and epigenetics. I employ a multi-omics approach to identify gene regulation in stem cells and during early embryonic development. In Leuven, I characterized the role of the Tet1 gene in early embryonic development. Aside from its known role in DNA demethylation, TET1 was also involved in regulation of lineage committed gene specification and maintenance of telomere length.

At UC San Diego, in the lab of Dr. Miles Wilkinson, I use cutting-edge single cell sequencing approaches to define, precisely, the cell types present in both newborn and adult human testes. We defined markers which to identify, and isolate, spermatogonial stem cells from human testes. This opens a possibility to treat infertility using stem cells. Focusing on epigenetics, I am also evaluating the transgenerational effects of chemotherapy on transcriptome and epigenome of spermatid and sperm. Using next generation sequencing and computational approaches, I identified epimutations caused by chemotherapy that are inherited. In a project related to RNA regulation by nonsense mediated RNA decay (NMD), using embryonic stem cells and knock out mice, I am evaluating the role of NMD in pluripotency, cellular differentiation and embryonic development. Apart from research, I mentor undergraduate and graduate researchers and I also assist other research groups in the department with genomic data analysis and bioinformatics.

Next Issue: Meet Drs. Cho, Pantham and Tan.

Bench to Bedside

New Nager Study on Uterovaginal Prolapse Yields Surprises

Effect of sacrospinous hysteropexy with graft vs vaginal hysterectomy with uterosacral ligament suspension on treatment failure in women with uterovaginal prolapse:

5 year results of a randomized clinical trial.

Charles W. Nager, Anthony G. Visco, Holly E. Richter, Charles R. Rardin Yuko Komesu, Heidi S. Harvie, Halina M. Zyczynski, Marie Fidela R.Paraiso, Donna Mazloomdoost, Amaanti Sridhar, Sonia Thomas, NICHD Pelvic Floor Disorders Network.

American Journal of Obstetrics and Gynecology https://doi.org/10.1016/j.ajog.2021.03.012

As many as one in five may suffer from pelvic organ prolapse. with associated complications and discomfort. For uterovaginal prolapse, vaginal hysterectomy with suture apical suspension is commonly performed. Sacrospinous hysteropexy with graft (vaginal mesh hysteropexy) remains a controversial alternative.

At 9 clinical sites within the U.S. NIH/NICHD Pelvic Floor Disorders Network, 183 postmenopausal women with symptomatic uterovaginal prolapse were enrolled and randomized in a multi-site randomized superiority clinical trial. Among women with symptomatic uterovaginal prolapse undergoing vaginal surgery, sacrospinous hysteropexy with graft resulted in a lower composite failure rate compared to vaginal hysterectomy (adjusted hazard ratio, 0.58 [95% CI: 0.36 to 0.94], p=0.03).

This is a difference of -18% (95% CI: -33% to -3%) within 5 years. The study suggests that vaginal mesh hysteropexy procedures are, in fact, superior to native tissue vaginal hysterectomy procedures. The results suggest that the 2019 FDA ban on these products should be reconsidered.

At the Frontier

Highlighting a few recent papers from the department.

1. Growth Hormone Pulses and Liver Gene Expression Are Differentially Regulated by the Circadian Clock Gene Bmal1. Schoeller EL, Tonsfeldt KJ, Sinkovich M, Shi R, Mellon PL. Endocrinology. 2021 Apr 1;162(4):bqab023. doi: 10.1210/endocr/bqab023. PMID: 33539533

Male mice deficient in Bmal1 exhibit a female-like pattern of GH release and disrupted IGF1 signaling and the induction of femalepredominant proteins. The results explain why Bmal1 deficient males elicit less aggression from other male mice.

2. FOXO1 mitigates the SMAD3/FOXL2C134W transcriptomic effect in a model of human a dult granulosa cell tumor. Secchi C, Benaglio P, Mulas F, Belli M, Stupack D, Shimasaki S. J Transl Med. 2021 Feb 27;19(1):90. doi: 10.1186/s12967-021-02754-0. PMID: 33639972 FREE PMC

Human Adult Granulosa cell tumors universally express the FOXL2 C134W mutation, which signals together with SMAD3. The combination induces more than 700 genes, many neoplastic, that can in turn be suppressed by the tumor suppressor FOXO1.

3. Quantifying the Effects of Aging on Morphological and Cellular Properties of Human Female Pelvic Floor Muscles. Rieger M, Duran P, Cook M, Schenk S, Shah M, Jacobs M, Christman K, Kado DM, Alperin M. Ann Biomed Eng. 2021 Mar 8. doi: 10.1007/s10439-021-02748-5.

The pathophysiology underlying pelvic floor muscle dysfunction is linked strongly to age-related fibrotic degeneration and intramuscular lipid accumulation. Age related effects are amplified in pelvic floor muscle relative to control appendicular muscle.

4. Modeling preeclampsia using human induced pluripotent stem cells. Horii M, Morey R, Bui T, Touma O, Nelson KK, Cho HY, Rishik H, Laurent LC, Parast MM. Sci Rep. 2021 Mar 15;11(1):5877. doi: 10.1038/s41598-021-85230-5. PMID: 33723311 FREE PMC

Induced pluripotent stem cells derived from women with preeclampsia are found to be defective in syncytia formation, and to exhibit a blunted response to hypoxia. Bioinformatic analysis of RNA from these cells confirmed molecular defect in syncytialization and in hypoxia-induced protein expression.

Advancing women's health AND public health

A *one-of-a-kind* fellowship in an area of great need...

Every year since its establishment in 1991, one obstetrics and gynecology residency graduate has been selected for the two-year Fellowship in Complex Family Planning at UC San Diego Health. Recipients of the fellowship gain valuable experience in general family planning counselling and treatment, and are provided with unique opportunities to contribute to projects in complex and emerging areas of family planning being studied at UC San Diego. These include:

Specialized training in contraception counselling that considers the safety and efficacy of options for patients with cardiac anomalies, epilepsy, cystic fibrosis, cancer and other conditions.

Abortion and miscarriage training and research, which includes clinical care for complex cases and advanced approaches informed by a growing understanding of pain control and access issues. Because of this fellowship, patients no longer need to travel to Los Angeles to receive treatment for complex pregnancy conditions that require highly specialized hospital care.

Public health outreach and research at both the local and global level. Past fellows have been involved in projects focused on expanding access to family planning care in Tijuana, Bangladesh and in refugee communities in San Diego.

Reproductive health advocacy efforts at the local, state and national levels. Fellows are involved in lobbying and advocacy letter writing, meeting with legislators, and serving in leadership positions with the American College of Obstetricians and Gynecologists, the field's leading professional association.

Fellows also become part of the UC Family Planning Collaborative, a network of reproductive health specialists established at UC San Diego. Members gather to pursue research collaborations, review the latest findings, and discuss how they can improve patient care across UC Health's five academic medical centers.

Your opportunity to make an impact

"This fellowship helps meet the critical need for a new generation of clinicians focused on providing reproductive health access. At the same time, it expands the specialized services we can provide in San Diego and drives research that is improving standards of care for women everywhere."

Sheila Mody, MD, MPH Associate Professor of Obstetrics, Gynecology, and Reproductive Sciences Director, Division of Family Planning Director, Complex Family Planning Fellowship UC San Diego

We seek forward-thinking donors who recognize the importance of this work and are committed to supporting the future leaders of the field. You can partner with us through:

» A gift of \$15,000 to fund a fellow's research project.

» A gift of \$100,000 to support a fellow for one year.

» An endowed gift of \$1.5 million to fund the Complex Family Planning Fellowship at UC San Diego Health in perpetuity.

This substantial contribution would create a legacy of support for women and families in San Diego and around the world by helping to shape the future specialists who will work to improve standards of care and increase access to essential family planning services.

Thank you for your contributions over the years to advance vital priorities, including educational and training opportunities for fellows, research studies and care initiatives within the Department of Obstetrics, Gynecology, and Reproductive Sciences. Your generosity makes a meaningful difference in our efforts to discover and share new knowledge, provide outstanding clinical care and advance health care equity and justice to individuals within and beyond our institution.

We are proud and grateful for what you are helping us do and grow at UC San Diego and hope you will consider making a gift this spring to our

Obstetrics, Gynecology, and Reproductive Sciences Fund.

Should you have interest in supporting a specific initiative, such as one of our fellowships or a specific area of research or care, we would be happy to talk to you.

Rachel Stroud HunsingerManaging Senior Executive Director of Development(858) 246-1836rstroud@ucsd.edu