

Centerpiece

Issue 3
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Quarterly Newsletter

BACK TO SCHOOL

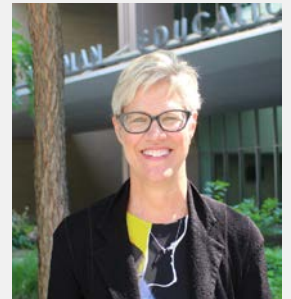
*... and research,
and accomplishments
that are to be celebrated!*

Join us in congratulating Dr. Kelle Moley on the receipt of one of the most prestigious awards bestowed by the Washington University School of Medicine.

A SUCCESS STORY: 2017 2ND CENTURY AWARD

Kelle H. Moley, MD, James P. Crane professor of obstetrics and gynecology in the Department of Obstetrics and Gynecology, and director of Center for Reproductive Health Sciences has received the 2017 2nd Century Award.

First bestowed in 1991 as part of the School of Medicine centennial celebration, the 2nd Century Awards recognize those whose long-



Kelle H. Moley, MD

term commitment and participation have truly made a difference, enabling the medical school to move forward in its second century with both strength and confidence.



The award, designed by Heikki Seppa, retired professor of the Sam Fox School of Design & Visual Arts at Washington University, symbolizes both collaborative efforts and the positive results that characterize past achievements of the School of Medicine. Made of the most valued materials, gold and silver to signify the school's highest purpose - the healing of humanity - the award is fashioned from a flat triangular sheet into a strong form suggesting the corners of the world from which knowledge is gathered. This knowledge, refined and expanded by dedicated researchers, teachers and clinicians, is manifested as a pure silver flame in the center. The black base represents the work still ahead, challenging and as yet unknown.

AWARDS AND ACCOMPLISHMENTS (MORE ON PAGE 2)

Katherine Fuh, MD, PhD, assistant professor in the Department of Obstetrics and Gynecology, has received a new grant entitled "Predictive Kinome for Treatment of Chemoresistant Ovarian Cancer". The project uses a new therapy to inhibit an exciting new protein, DDR2, and improve response to chemotherapy. The project will span across two years and is funded by the Mary Kay Foundation.

Yong Wang, PhD, assistant professor in the Department of Obstetrics and Gynecology, has received a new \$3.75 million award entitled "Quantification of neuroinflammation in Alzheimer's disease using Diffusion Basis Spectrum Imaging" funded by NIH/National Institute of Aging. Inflammation in the brain may play an important role in the transition from normal cognition to dementia but currently we lack easily accessible tools to identify neuroinflammation. This study will enable Dr. Wang in collaboration with Dr. Tammie Benzinger to use a novel brain imaging test, diffusion basis spectrum imaging (DBSI), to examine inflammation during the stages of preclinical and clinical Alzheimer's disease.

Celia Santi, MD, PhD, associate professor in the Department of Obstetrics and Gynecology, has received a new NIH grant entitled "SLO3 K Channel: A Novel Target for Contraception". Dr. Santi aims to acquire a deeper understanding of the role of ion channels in sperm fertility. Her team will produce lead molecules that can be developed into an innovative class of non-hormonal and reversible female contraceptives.

NEW FACES IN THE HALLWAYS

Dr. Molly Greenwade, Clinical Fellow in the Department of Obstetrics and Gynecology, Division of Gynecologic Oncology, is a member of the Fuh lab.



Alaina Derse

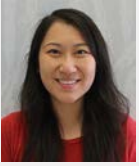
Dr. Michael Thompson has joined the Department of Pediatrics as Instructor. He conducts the research part of his appointment in the Moley lab. **Alaina Derse** has joined the Department of Pediatrics as a Research Technician II. She is working with Dr. Thompson and is stationed in the Moley lab.



Dr. Molly Greenwade



Dr. Michael Thompson



Brooke Liang

Manasi Malik is an MSTP student in the Molecular Cell Biology program. She has chosen Dr. England's lab for her thesis laboratory affiliation.



Manasi Malik

Brooke Liang is an MD/MA student doing her Master's research assignment in the lab of Dr. Mysorekar.



Gerry Serwald

Emilee Kotnik is a first year DBBS PhD student in the Molecular Genetics and Genomics program. She is currently rotating in Dr. Fuh's lab.



Emilee Kotnik



Capers Zimmerman

Keenan Bates is a first year DBBS PhD student in the Developmental, Regenerative and Stem Cell Biology program. He is rotating in Dr. Moley's lab.



Keenan Bates

Gerry Serwald is an undergraduate student gaining laboratory experience in the England lab.

Capers Zimmerman is an undergraduate working in the Fuh lab.

MORE ACCOMPLISHMENTS (continued)

Dr. Yong Wang, assistant professor in the Department of Obstetrics and Gynecology, has received an award entitled "PET-MRI Imaging of White Matter Damages and Inflammation in AD" from the BrightFocus Foundation. The 3-year study aims to develop and validate a novel PET-MRI imaging method by integrating amyloid PET and diffusion basis spectrum imaging (DBSI) to simultaneously measure white matter demyelination and inflammation in vivo.

Dr. Caihong Wang, presented a poster at the Gordon Research Conference on Cell Biology of Metals in July 23-28, 2017 held in West Dover, Vermont.

Dr. Sarah England served as the Medical College of Wisconsin Research Day Speaker. She presented a talk named "Modulation of uterine contraction; something old, something new".

Dr. Indira Mysorekar was an invited speaker at the Institute for Human Infections and Immunity, University of Texas Medical Branch, Texas (September 2017) and at the ASM Microbe Annual Meeting held in New Orleans, Louisiana in June 2017. She also gave a short talk at the International Continence Society Annual Meeting in Florence, Italy.

FIVE FUN FACTS YOU DIDN'T KNOW ABOUT:

Chetan Joshi, PhD

Favorite place to visit one day:

Normandy, France and Volgograd, Russia

Favorite music: Country and classical

Favorite food: Anything vegetarian

Favorite holiday: Diwali and Christmas

Favorite guilty pleasure: An Indian

regional sweet dish "posu"



STAT 2017 WUNDERKIND: Bin Cao, PhD



Bin Cao, PhD, research scientist in the Mysorekar Lab, has been awarded the 2017 STAT WUNDERKIND honor for his role in building a model that showed Zika virus crosses the placenta and can infect fetal cells. The award recognizes the "next generation of scientific superstars" as they "attempt to answer some of the biggest questions in medicine".

Carmel Martin-Fairey, PhD

Carmel Martin-Fairey, PhD, postdoctoral research scholar (England Lab), has received a research fellowship award entitled "Role of peripheral oscillators in the timing of birth" funded by the NIH/NICHHD. The study will



test whether the maternal circadian clock plays a key role in determining the timing of birth by regulating clocks within the brain, the uterus and the cervix and to understand the role of progesterone in this process.

TV SCREEN

Dr. Sarah England was portrayed in the Washington People segment and was featured in a [KSDK story](#) on a new preterm birth study conducted in the Washington University March of Dimes Prematurity Research Center.



NEW PUBLICATIONS (SINCE JULY 2017)

ENGLAND LAB:

1. **The unique N-terminal sequence of the BKCa channel α -subunit determines its modulation by β -subunits.** Lorca RA, Ma X, England SK. PLoS One. 2017 Jul 27;12(7):e0182068. doi: 10.1371/journal.pone.0182068. eCollection 2017. PMID: 28750098

FUH LAB:

1. **Inhibition of the receptor tyrosine kinase AXL restores Paclitaxel chemosensitivity in uterine serous cancer.** Palisoul ML, Quinn JM, Schepers E, Hagemann IS, Guo L, Reger K, Hagemann AR, McCourt CK, Thaker PH, Powell MA, Mutch DG, Fuh KC. Mol Cancer Ther. 2017 Sep 13. pii: molcanther.0587.2017. doi: 10.1158/1535-7163.MCT-17-0587. [Epub ahead of print] PMID: 28904132

KOMMAGANI LAB:

1. **Growth regulation by estrogen in breast cancer 1 (GREB1) is a novel progesterone-responsive gene required for human endometrial stromal decidualization.** Camden AJ, Szwarc MM, Chadchan SB, DeMayo FJ, O'Malley BW, Lydon JP, Kommagani R. Mol Hum Reprod. 2017 Sep 1;23(9):646-653. doi: 10.1093/molehr/gax045. PMID: 28911214

MOLEY LAB:

1. **Human antibodies to the dengue virus E-dimer epitope have therapeutic activity against Zika virus infection.** Fernandez E, Dejnirattisai W, Cao B, Scheaffer SM, Supasa P, Wongwiwat W, Esakky P, Drury A, Mongkolsapaya J, Moley KH, Mysorekar IU, Screaton GR, Diamond MS. Nat Immunol. 2017 Sep 25. doi: 10.1038/ni.3849. [Epub ahead of print] PMID: 28945244

2. **Testicular cells exhibit similar molecular responses to cigarette smoke condensate ex vivo and in vivo.** Esakky P, Hansen DA, Drury AM, Felder P, Cusumano A, Moley KH. FASEB J. 2017 Aug 24. pii: fj.201700405R. doi: 10.1096/fj.201700405R. [Epub ahead of print] PMID: 28842431

MYSOREKAR LAB:

1. **Human antibodies to the dengue virus E-dimer epitope have therapeutic activity against Zika virus infection.** Fernandez E, Dejnirattisai W, Cao B, Scheaffer SM, Supasa P, Wongwiwat W, Esakky P, Drury A, Mongkolsapaya J, Moley KH, Mysorekar IU, Screaton GR, Diamond MS. Nat Immunol. 2017 Sep 25. doi: 10.1038/ni.3849. [Epub ahead of print] PMID: 28945244

2. **Gestational Stage and IFN- λ Signaling Regulate ZIKV Infection In Utero.** Jagger BW, Miner JJ, Cao B, Arora N, Smith AM, Kovacs A, Mysorekar IU, Coyne CB, Diamond MS. Cell Host Microbe. 2017 Sep 13;22(3):366-376.e3. doi: 10.1016/j.chom.2017.08.012. PMID: 28910635

3. **Microbial communities in placentas from term normal pregnancy exhibit spatially variable profiles.** Parnell LA, Briggs CM, Cao B, Delannoy-Bruno O, Schrieffer AE, Mysorekar IU. Sci Rep. 2017 Sep 11;7(1):11200. doi: 10.1038/s41598-017-11514-4. PMID: 28894161

4. **Maternal microbiomes in preterm birth: Recent progress and analytical pipelines.** Parnell LA, Briggs CM, Mysorekar IU. Semin Perinatol. 2017 Aug 17. pii: S0146-0005(17)30082-4. doi: 10.1053/j.semperi.2017.07.010. [Epub ahead of print] Review. PMID: 28823578

5. **Vaccine Mediated Protection Against Zika Virus-Induced Congenital Disease.** Richner JM, Jagger BW, Shan C, Fontes CR, Dowd KA, Cao B, Himansu S, Caine EA, Nunes BTD, Medeiros DBA, Muruato AE, Foreman BM, Luo H, Wang T, Barrett AD, Weaver SC, Vasconcelos PFC, Rossi SL, Ciaramella G, Mysorekar IU, Pierson TC, Shi PY, Diamond MS. Cell. 2017 Jul 13;170(2):273-283.e12. doi: 10.1016/j.cell.2017.06.040. PMID: 28708997

6. **Inhibition of autophagy limits vertical transmission of Zika virus in pregnant mice.** Cao B, Parnell LA, Diamond MS, Mysorekar IU. J Exp Med. 2017 Aug 7;214(8):2303-2313. doi: 10.1084/jem.20170957. Epub 2017 Jul 10. PMID: 28694387

Photo credit: The Fuh Lab: This preliminary image shows that cancer cells not expressing DDR2 (red) are unable to clear away mesothelial cells (green). The yellow color shows the ability of the mesothelial cells (green) to surround the cancer spheroid (red) in cells without DDR2, suggesting interactions to study further.

