



Banner  
University Medical Center  
Phoenix

**The University of Arizona Phoenix Campus**  
**The Women's Institute**  
2020-2021 Annual Report



EXCELLENCE IN WOMEN'S HEALTH

# Women's Health Update Quarterly Newsletter

## Announcement:

**THE DEPARTMENT OF OB/GYN AT BANNER UNIVERSITY MEDICAL CENTER PHOENIX, PROUDLY ANNOUNCES THE LAUNCH OF THE WOMEN'S HEALTH UPDATE QUARTERLY NEWSLETTER!**

Banner University Medical Center Phoenix (BUMCP) is known for specialized and highly collaborative care models. The Arizona Perinatal Trust bestowed specialty program accreditation in 2017 for the groundbreaking work with Placenta Accreta. It was the first specialty program of its kind to be designated as a Placenta Accreta Spectrum Center of Excellence.

The OBGYN Department at BUMCP strives to serve our community through public service, clinical care expertise, academic re-search and medical education. We hope you enjoy sharing in our activities through the Women's Health Update Newsletter.

If you would like to receive an electronic or paper copy of the Women's Health Update Newsletter, please contact us at [BUMCP\\_Womens\\_Health\\_Update@BannerHealth.com](mailto:BUMCP_Womens_Health_Update@BannerHealth.com).

June 2021

## Women's Health Update

  
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Presented by the Department of OBGYN at Banner University Medical Center – Phoenix

### Filling the Gap in Women's Health Research | Nichole Duran Mahmert, MD

Here at Banner University Medical Center Phoenix (BUMCP), we are diligently working to build a robust clinical research program within the department of Obstetrics and Gynecology. Over the past 5 years in partnership with the University of Arizona College of Medicine Phoenix (UACOMP) we have grown our scholarship opportunities and output considerably. Our medical students, residents, fellows, faculty, basic/translational scientists, and clinical research staff have worked alongside each other to guide our scholarship vision. Scholarship in the form of research, advocacy, technology development, quality improvement, and community outreach are all important avenues to

### Welcome

The OBGyn Department at BUMCP strives to serve our community through public service, clinical care expertise, academic research and medical education. We hope you enjoy sharing in our activities through the *Women's Health Update* Newsletter. We welcome any questions, comments or feedback you may wish to communicate. Please contact us at: [BUMCP\\_Womens\\_Health\\_Update@bannerhealth.com](mailto:BUMCP_Womens_Health_Update@bannerhealth.com)

### High Priority Issues in Women's Healthcare Research

necessary research and to implement evidence-based health care. A few key topic areas that require further investigation include maternal health and menstrual disorders.

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## Introduction from the Chair of Obstetrics and Gynecology



On December 31st, 2021, I will be retiring from my role as Chairman for the Department of Obstetrics and Gynecology at the University of Arizona College of Medicine – Phoenix/ Banner – University Medical Center Phoenix.

In my over three decades in the department, and nearly a decade as Departmental Chair, I have been privileged to witness, and participate in the evolution of the best and most happy residency in obstetrics and gynecology in the nation.

I remain honored to have assumed the role of chairman in 2012 from Dr. John Mattox who created a “jewel” of a department. My only obligation in this transition was to polish the “jewel” to enhance its beauty and luminescence.

Together with Program Directors, Dr. Laurie Erickson and now, Dr. Brian MacArthur, Associate Program Director, Dr. Kelley Saunders, amazing faculty members, (employed and private) and an unbelievable support staff, we have made this “jewel” absolutely brilliant! With all confidence, I hand the position of Professor and Chair of OB/GYN, to my esteemed colleague, Dr. Jamal Mourad, who will act as Interim Chair until a permanent replacement has been found.

Over the last 10 years together we have:

- Expanded the resident class size to 9 per year.
- Established elective rotations in Africa, China, Peru, and Ireland.
- Developed a partner residency program with the University of Buea, Cameroon.
- Started a fellowship program in Minimally Invasive Gynecologic Surgery (MIGS).
- Started a fellowship in Maternal Fetal Medicine.
- Initiated a fellowship in Female Sexual Medicine.
- Created a multidisciplinary departmental Patient Quality and Safety Committee.
- Assisted with the merger with Banner and the University of Arizona to create the Banner University Medical Center Phoenix (Formerly Banner Good Samaritan).
- Established a formal Department of Obstetrics and Gynecology Basic Science, Translational and Clinical Research Program.
- Formalized Resident Research Day-including visiting professors, and a annual research publication showcasing our resident’s research.
- Created and published our Department’s Annual Report and shared with every academic ObGyn department in the country.

- 
- Created a nationally-acclaimed Obstetric Critical Care Simulation conference utilizing virtual reality, flipped classroom, and hands-on simulation tools to educate providers and reduce maternal morbidity and mortality.
  - Established and operationalized our Department's Equity, Diversity and Inclusion Committee.
  - Launched a maternal-fetal early warning system on labor and delivery to reduce severe morbidity.

These are just a few noteworthy changes that have "sparkled" from the "jewel" over the last decade. Many thanks to the multiple, talented leaders in our department that have made these evolutionary changes possible.

Lastly, and with primary importance, I am indebted to the numerous, amazing residents with whom I have worked and contributed to their training over the last 32 years. Particularly memorable is our Annual Resident Retreat which just celebrated its 25th year.

Memories of camaraderie, fun, and professional development remain crystal clear. I will always consider the stories shared such as "The Empty Cup", "Tasting the Strawberry", "Harmony not Balance", and "Board Breaking" as cherished times and a career highlight.

In Closing, I will be remaining in Phoenix, AZ and the Dean, Guy Reed, has graciously extended me the honor of continuing as a Professor in the department to provide personal and professional mentoring to students, residents, fellows and faculty, as I move into life's next chapter.

Please remember I am only a phone call (or Zoom, Teams, etc.) away!

There is always time for a cup of coffee and a good conversation.....)

With sincere gratitude and utmost appreciation,



**Michael R. Foley, MD**

Professor and Chair

Department of Obstetrics and Gynecology University of Arizona College of Medicine – Phoenix

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"Discovering personal life harmony and focusing on positive situational framing, allows happiness to flourish and success to inevitably follow."

- Michael R. Foley, MD

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# The Women's Institute Faculty Members

## Head Faculty

|                         |   |
|-------------------------|---|
| Michael R. Foley, MD    | Professor & Chair of Obstetrics and Gynecology  |
| Brian MacArthur, MD     | Program Director, Obstetrics and Gynecology Residency. Clinical Assistant Professor   |
| Jamal Mourad, DO, FACOG | Interim Chair of Obstetrics and Gynecology (January 2022), Division Director, Minimally Invasive Gynecologic Surgery Fellowship Director, Minimally Invasive Gynecologic Surgery Clinical Associate Professor |

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## Division and Fellowship Directors

|                               |   |
|-------------------------------|---|
| Megan C. Cheney, MD           | Banner University Women's Institute Clinical Assistant Professor  |
| Lexine M. Hebets, MD          | Division Director, Integrative Medicine Clinical Assistant Professor  |
| Melissa Herbst-Kralovetz, PhD | Associate Professor, Basic Medical Sciences   |
| C. Kevin Huls, MD, MSc        | Division Director, Maternal Fetal Medicine, Fellowship Director, Maternal Fetal Medicine Fellowship, Clinical Assistant Professor |
| Steven J. Laband, MD, MS      | Division Director, Clinical Gynecology, Clinical Assistant Professor  |
| Nichole D. Mahnert, MD        | Division Director, Research, Associate Program Director, Minimally Invasive Gynecologic Surgery Fellowship, Assistant Professor   |
| Shazia A. Malik, MD, FACOG    | Division Director, Female Pelvic Medicine and Reconstructive Surgery, Clinical Assistant Professor                                |
| Laura T. Mercer, MD           | Clerkship Director, Obstetrics and Gynecology, Clinical Associate Professor   |
| Drew V. Moffitt, MD           | Division Director Reproductive Endocrinology-Infertility, Clinical Assistant Professor  |
| Jamal Mourad, DO, FACOG       | Center Director of Minimally Invasive Gynecologic Surgery, MIGS Fellowship Director, Clinical Associate Director                  |
| Suma P. Rao, MD               | Neonatal Intensive Care Unit Director, Clinical Assistant Professor   |
| Amy Reyes, MSN, RN            | RN Director, Women and Infant Services and Neonatal Intensive Care Unit   |
| Jordan H. Perlow, MD          | Chair – Promotions/Banner Committee, Clinical Professor   |
| Silvana Qoshlli, MD           | Medical Director of Department of Obstetric Anesthesia, Clinical Assistant Professor  |
| Kelley T. Saunders, MD, MPH   | Associate Program Director, Obstetrics & Gynecology Residency, Clinical Assistant Professor                                       |
| Michael A. Urig, MD           | Vice-Chair, Division Director, Obstetrics and Gynecology Clinical Associate Professor   |
| Debra Wickman, MD, NCMP, CSC  | Division Director, Women's Sexual Health, Female Sexual Health Fellowship Director, Clinical Assistant Professor                  |
| Lyndsay J. Willmott, MD       | Division Director, Gynecologic Oncology, Assistant Professor  |
| Candice P. Wood, MD           | BUMCP Site Director, Obstetrics & Gynecology Clerkship, Clinical Assistant Professor  |

# The Women's Institute Faculty Members



## Michael R. Foley, MD

Professor and Chair of Obstetrics & Gynecology  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Dr. Foley received his medical degree in 1984 from Chicago Medical School. His residency in Obstetrics and Gynecology and fellowship in Maternal Fetal Medicine

were completed at The Ohio State University Hospital in 1988 and 1990, respectively. Dr. Foley has published numerous scientific articles and is a reviewer for several medical journals. He is a national and international lecturer as well as an award-winning teacher and author. He has also served as a Board Examiner in the subspecialty of Maternal Fetal Medicine.

He is considered a national authority on Critical Care Medicine in Obstetrics. Dr. Foley is Past President of the Society for Maternal Fetal Medicine - National (2008) and the recipient of the Society for Maternal Fetal Medicine Lifetime Achievement Award (2013). He is the Lead Editor of *Obstetric Intensive Care: A Practical Manual*, first edition published in the spring of 1997. The fifth edition was recently published in 2018 (McGraw-Hill). He is also a co-editor of *Critical Care Obstetrics*

6th ed. published in 2018 (Wiley-Blackstone). Dr. Foley is a founding instructor and faculty member for the Dan O’Keeffe, M.D. SMFM Academy for Leadership and Development which is in its sixth year of operation, training hundreds of medical leaders and professionals. He is a sought- after motivational speaker and mentor.

Dr. Foley is an eighth-degree black belt (Grand Master) and the co-founder of The Center for Humane Living, a 501(c)3 organization whose mission is “To inspire all people to live peaceful and compassionate lives.” He has been teaching martial arts and conflict management out of his center for the past 30 years. Dr. Foley has written an award-winning book, *The Art of Humane Living – Martial Arts as a Path to Peace* (Chaos Publishing 2004). He has also authored the highly acclaimed *Ancient Wisdom for Life Fulfillment* (Chaos Publishing 2010) and most recently, *INHALE- Reflections from a Beginner on the Path to Mastery* (Chaos Publishing 2019). He is married to Dr Lisa Dado who is a pediatric anesthesiologist. They have three children, Bonnie (33), Molly (30) and Michael (28).



## Brian MacArthur, MD

Residency Program Director of Obstetrics & Gynecology  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

After earning a BA in Linguistics from Pomona College and an MD from Oregon Health and Science University, Dr. MacArthur completed his residency

at Banner Good Samaritan Medical Center in 2009. He joined a rural OB/GYN practice in eastern Oregon and remained there for four years before returning to Phoenix as an obstetric hospitalist. He has been active in department leadership since 2018 and became the OB/GYN Clerkship Site Director in the same year.

He presented workshops at the 2018 and 2019 CREOG & APGO annual meetings and at the 2018 APGO Faculty Development Seminar. In 2019 he was recognized as an ACOG District VIII Mentor of the Year. Special interests include trauma in pregnancy and open-source medical education. His priorities as program director are to recruit applicants who reflect the diversity of the community we serve and to ensure that every resident has an opportunity to achieve peak success in an area of strength during their training.



**Jamal Mourad, DO, FACOG**

Interim Chair of Obstetrics & Gynecology – January 2022  
Minimally Invasive Gynecologic Surgery Fellowship Director  
Clinical Associate Professor  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Following graduation from the University of Rochester, Rochester, New York, Dr. Mourad received

his medical degree from the New York College of Osteopathic Medicine. He then completed his residency in Obstetrics and Gynecology at Banner Good Samaritan Medical Center and graduated in 2000. After completion, he joined a prestigious group in the Phoenix area where he practiced for 13 years and held a leadership position.

Dr. Mourad specializes in the treatment of Fibroids, Endometriosis, Heavy periods, Cervical incompetence, Pelvic pain, Ovarian cysts, Pelvic prolapse, Urinary incontinence, Ectopic pregnancy, Polyps. It is his passion to provide his patients with the least invasive,

yet with the most comprehensive care available. For numerous years Dr. Mourad has been recognized as a “Top Doc” by Phoenix Magazine. Over his career he has received various teaching awards including Resident Educator of the Year from the University of Arizona. Dr. Mourad is very active in research projects and has written several publications. He has been invited to speak at numerous national and international presentations.

Dr. Mourad joined the faculty in 2013 as the Director of Minimally Invasive Gynecologic Surgery and is an Associate Clinical Professor at the University Of Arizona College Of Medicine – Phoenix. Dr. Mourad became the Director of the Fellowship in Minimally Invasive Gynecologic Surgery in 2015.



**Megan Cheney, MD, MPH, FACOG**

Women’s Institute Medical Director  
Clinical Assistant Professor  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Megan Cheney, MD MPH is a board-certified obstetrician gynecologist at Banner University Medical Center Phoenix and a Clinical

Assistant Professor at the University of Arizona College of Medicine – Phoenix. She is also the medical director of the clinic in the Women’s Institute.

Dr. Cheney completed residency at University of Arizona College of Medicine – Phoenix. She received her medical degree and master’s in public health from University of Arizona College of Medicine – Tucson and

her undergraduate degree from Washington University in St. Louis.

Dr. Cheney’s clinical practice as a general OBGYN includes the treatment of abnormal uterine bleeding, abnormal cervical cytology, ovarian cysts, and pregnancy. She is passionate about screening for inherited cancer syndromes such as BRCA 1 and 2. She enjoys continuity of care and performing in-office hysteroscopy. She was recognized in Phoenix Top Docs Magazine in 2019. She is the recipient of a grant from the March of Dimes to establish group prenatal care in Phoenix.





### **Karen Franklin, MD**

Maternal & Fetal Medicine Fellowship Associate Director  
Phoenix Perinatal Associates / Obstetrix Medical Group of Phoenix  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Dr. Franklin is a board certified maternal-fetal medicine physician with Phoenix Perinatal Associates who has practiced in Arizona since

2016. Dr. Franklin attended Arizona State University for her undergraduate degree where she received a bachelor's degree in biology and a minor in French. She then attended the University of Vermont to

receive her medical degree. Dr. Franklin completed residency training in obstetrics and gynecology at Tufts Medical Center in Boston, Massachusetts. Following residency, she completed a fellowship in maternal-fetal medicine at Washington University in St. Louis, Missouri, where she also obtained a master's degree in clinical investigation at the Institute of Clinical and Translational Sciences.



### **Kisti Fuller, MD**

Maternal & Fetal Medicine Specialist  
Phoenix Perinatal Associates / Obstetrix Medical Group of Phoenix  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Dr. Fuller attended medical school at St George's University. She completed both OB/GYN residency and MFM fellowship at the

University of Connecticut. Following fellow-ship, she took a position at Phoenix Perinatal Associates in 2014. Since joining Phoenix Perinatal, Dr. Fuller has been involved in working with the accreta team, developing the MFM fellowship and leadership overseeing outpatient services.

Dr. Fuller's research interests include exercise in pregnancy and postpartum, gestational diabetes, antenatal steroid administration and other aspects of prenatal care. Dr Fuller is experienced in performing chorionic villus sampling and fetal therapy. She has been the recipient of resident teaching awards in 2017 and 2020.



### **Kendra Gray, DO**

Maternal & Fetal Medicine Specialist  
Clinical Assistant Professor  
Phoenix Perinatal Associates / Obstetrix Medical Group of Phoenix\ University  
of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Dr. Kendra Gray is a Maternal Fetal Medicine physician who completed both her residency and fellowship at

the University of Arizona College of Medicine. She has a passion for teaching and is an Assistant Professor at A.T. Still University College of Medicine and a Clinical Assistant Professor at The University of Arizona College of Medicine. Dr. Gray has been honored to serve her community and state as a member on the Maternal Mortality Review Committee which reviews all maternal deaths in the state of Arizona. This work has sparked her clinical and research interest in systems-based approaches to improving clinical care for mothers. She has a particular passion for critical care medicine as well as obstetrical and fetal surgeries including those related to maternal obesity, placenta accreta

spectrum disorders, maternal trauma, cerclage and fetal intervention. She has additional training in prenatal genetics and performs both chorionic villus sampling (CVS) and amniocentesis.

Dr. Gray has multiple publications and has received several awards from the community, organizations, and academic centers she is proud to serve. She enjoys lecturing to other healthcare providers and considers herself a medical conference enthusiast stating that she is “energized by continually learning the latest evidenced based care options to offer my patients.”

Dr. Gray was born and raised in Cleveland, Ohio but has been proud to call Arizona her home since relocating to the Valley in 2004. She lives with her husband and two children. She enjoys hiking, baking, and anything that involves laughing with her family and friends.



### **C. Kevin Huls, MD, MSc**

Center Director of Maternal Fetal Medicine Director of MFM Fellowship  
Clinical Associate Professor  
Phoenix Perinatal Associates / Obstetrix Medical Group of Phoenix  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Dr. C. Kevin Huls, MD, MSc has 13 years of experience as a Maternal-Fetal Medicine (MFM) physician with Banner

University Medical Center. He initially joined the MFM practice Phoenix Perinatal Associates following fellowship training at the University of Wisconsin. In 2012 he joined the core faculty for the Department of Obstetrics and Gynecology Residency Training Program and faculty for University of Arizona College of Medicine – Phoenix.

In collaboration with multiple specialties, Dr. Huls was part of the planning and implementation of the Center

of Excellence for Placenta Accreta. The Center was Arizona’s first Center of Excellence accredited by the Arizona Perinatal Trust, which oversees maternal and neonatal services statewide. He lectures to national audiences, researches and publishes on placenta accreta in pregnancy. In 2017 Dr. Huls was named the Maternal-Fetal Medicine Fellowship Director for the University of Arizona at Banner University Medical Center. He represents Banner University Medical Center by having an active role with the Arizona Maternal Mortality Committee, the Arizona AIM Initiative as well as multiple leadership roles within Banner and in Arizona.



### **Steven J. Laband, MD, MS**

Director of Benign Gynecology  
Associate Program Director, Clinical Gynecology Clinical Assistant Professor  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

After attending Stanford University and receiving his Master's and Bachelor of Science in Biology and Medical Microbiology with honors and

distinction, Dr. Laband obtained his MD at the Icahn School of Medicine at Mount Sinai in New York City.

From there, he relocated to Phoenix where he has been part of the BUMCP family for over thirty years.

In addition to serving on various committees, his duties include Clinical Assistant Professor, Associate Director, and Section Head of the Gynecology Division.



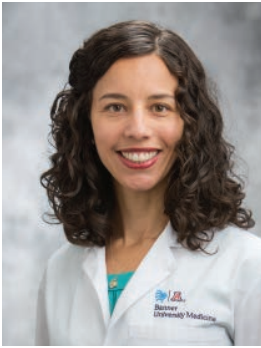
### **Michael Leovic, MD**

Maternal Fetal Medicine Specialist  
Phoenix Perinatal Associates / Obstetrix Medical Group of Phoenix  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Following completion of his fellowship in maternal-fetal medicine here at the University of Arizona College of Medicine – Phoenix, Dr.

Michael Leovic joined Phoenix Perinatal Associates in July 2020. He has been in the valley since 2013 when he first began residency training in obstetrics & gynecology with our department. His medical

school education was completed at The Ohio State University College of Medicine. His clinical interests include multidisciplinary care in the critically-ill obstetric patient, evaluation and management of placenta accreta spectrum disorders, and fetal growth restriction. In his free time, he enjoys relaxing with his girlfriend Alex, playing with his cats Bro & Archie, and staying active with running, stand-up paddle boarding, and biking.



### **Nichole Duran Mahnert, MD**

MIGS Associate Program Director  
Clinic Research Education Leader  
Clinical Assistant Professor  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Dr. Nichole Mahnert received her bachelor's degree in nutrition and Spanish from the University of Arizona.

She then attended the University of Wisconsin School of Medicine and Public Health for medical school. She took one year to pursue the Doris Duke clinical research fellowship at University of Texas Southwestern in Dallas. Following graduation from medical school she went on to Obstetrics and Gynecology residency at Kaiser Permanente Santa Clara in Northern California. After working as a generalist for two years in Shanghai, China she returned to the United States to complete a fellowship in Minimally Invasive Gynecologic Surgery (MIGS) and Chronic Pelvic Pain at the University of Michigan. She worked in California before returning to her home in Phoenix to take a position at Banner

– University Medical Center as a Clinical Assistant Professor in Obstetrics and Gynecology and the MIGS Fellowship co-director. She is involved in resident gynecologic surgery and simulation education and directs the resident research program.

Dr. Mahnert's areas of specialty lie in minimally invasive gynecologic surgery including laparoscopy, vaginal surgery and hysteroscopy. She has special interests in fibroids, abnormal bleeding, pelvic pain and endometriosis. Her current research projects encompass reproductive tract and gut microbiome in relation to gynecologic conditions, peri-operative pain control, chronic pelvic pain and endometriosis diagnosis and treatments, surgical quality and safety, health care disparities in obstetrics and gynecology, and advocacy for women and diversity in medicine.



### **Shazia A. Malik, MD, FACOG**

Director of Urogynecology and Pelvic Reconstructive Surgery  
Clinical Assistant Professor  
Valley Urogynecology Associates  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Dr. Malik has been practicing in the Valley since 2007 after having completed both a Minimally Invasive

Gynecologic Surgery (MIGS) and a Female Pelvic Medicine & Reconstructive Surgery fellowship (FPMRS). She was admitted to medical school from high school and attended a 6 year combined BA/ MD program at the University of Missouri Kansas City. She completed residency at Mt Sinai Hospital in Chicago. She continued to complete her MIGS fellowship at the Nezhat Pelvic Institute in Atlanta, GA and her FPMRS at the University of Southern California in Los Angeles.

She is very involved with the medical school and residency program, serving on multiple committees for years. She is currently the division director and has been since 2011. She is also involved in clinical studies and serving on national and international society committees.

Her passion lies in educating women on their conditions involving pelvic floor disorders and improving their quality of health. She is dedicated to providing compassionate care to women of diverse backgrounds. She feels that these disorders are frequently ignored and misunderstood by other medical practitioners and patients.



**Maria Manriquez, MD, FACOG, FASAM**

Professor of Obstetrics & Gynecology  
Director, Pipeline Admissions Program  
Director of Pain and Addiction Curriculum  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Maria Manriquez, M.D.,  
FACOG is a University of  
Arizona College of Medicine  
Alumnus and currently directs

the Pipeline Admissions and UMG Pain and Addiction Curriculum at the University of Arizona College of Medicine Phoenix. Dr. Manriquez brings vast experience in program direction that spans undergraduate education, medical education, graduate and continued medical education. Her service includes vice chair then chair of the Arizona section of American College of Obstetricians and Gynecologist (ACOG). She has served as At-Large Fellow for District VIII on the advisory council for ACOG. Dr. Manriquez is immediate past program chair for the Council of Resident Education and Gynecology (CREOG). Dr Manriquez is one of two ACOG representatives to the AAMC CFAS.

She has served in past as program director and vice chair at Valleywise Health. She developed and now directs the Pathway Scholars Program at UACOMP, a program addressing diversity in the physician workforce. The program prepares underrepresented in medicine students for medical school through a yearlong curriculum designed to position them to thrive once they matriculate.

Dr. Manriquez continues clinical practice focusing on substance use-disorders in pregnancy and parenting women in the Banner University Women’s Institute. Her research and advocacy focus are aimed at investigating innovations in prenatal care models addressing preterm delivery rate, substance use disorders in pregnancy and care coordination.



**Laura Mercer, MD, MBA**

Associate Professor of Obstetrics & Gynecology  
Clerkship Director of Obstetrics & Gynecology  
Intercession Course Director  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Dr. Laura Mercer earned her bachelor’s degrees from Northern Arizona University and her medical and business

degrees from the University of Arizona. She completed her specialty training in obstetrics and gynecology at the University of Arizona College of Medicine – Phoenix.

Dr. Mercer is an associate professor at The University of Arizona College of Medicine Phoenix and is the Medical Student Clerkship Director for students as they are introduced to the best specialty medicine has to offer. She additionally runs a longitudinal course called Intersections, which aims to prepare students as well-rounded physicians for residency and

beyond. Dr. Mercer’s interests include contraception, adolescent health, minimally invasive surgery, health equity, continuous quality improvement, and medical student and resident education. She remains actively involved in the American College of Obstetricians and Gynecologists (ACOG), where she serves on several section, district and national boards and committees. A past recipient of the Association of Professors in Gynecology and Obstetrics (APGO) William N. P. Herbert MD Promising Educator Award and ACOG Medical Student Recruitment award, Dr Mercer was selected by the graduating class of 2021 for the Stuart D Flynn, MD, Master Educator Award, University of Arizona College of Medicine – Phoenix.



### **Jordan H. Perlow, MD**

Associate Director: Maternal-Fetal Medicine  
Immediate-Past Director Maternal Fetal Medicine Division: Clinical Professor  
Phoenix Perinatal Associates / Obstetrix Medical Group of Phoenix  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Dr. Perlow has been providing care to high-risk pregnant women at Phoenix Perinatal Associates and Banner

University Medical Center – Phoenix, for the past 30 years, and is Clinical Professor at the University of Arizona College of Medicine. He is a graduate of the Northwestern University Medical School, completed his residency in obstetrics and gynecology at Rush University Medical Center/Rush Medical

College in Chicago and then completed fellowship training in Maternal-Fetal Medicine at the University of California Irvine and Long Beach Memorial Medical Center. Dr. Perlow has been a career-long volunteer with the March of Dimes and was awarded the Distinguished Volunteer Service Award for the March of Dimes; it's highest honor. Dr. Perlow regularly serves as

a judge of scientific papers for the Society of Maternal Fetal Medicine and is a reviewer of research submitted for publication in the American Journal of Obstetrics & Gynecology, and Obstetrics and Gynecology. He has lectured extensively in the United States and throughout the world, teaching throughout India, the Philippines, Kuala Lumpur Malaysia, Brazil, Mexico and Israel. He has served as President of the Phoenix Obstetrical and Gynecologic Society and is immediate-past Director of Maternal-Fetal Medicine at Banner University Medical Center – Phoenix, where he led the establishment of a unique obstetrical high-BMI care program, and co-led the formation of a world-class center of excellence for multidisciplinary team care of patients with the highly life-threatening complication of invasive placentation.



### **Suma Rao, MD**

Chief of Department of Pediatrics  
Medical Director of Neonatal Intensive Care Unit  
Neonatal ECMO Program Director  
Clinical Assistant Professor – Department of Child Health, Division of Critical Care  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Suma Rao, MD, is a Board-Certified Neonatologist, a member of Arizona

Neonatology, a division of Mednax, for the past 13 years. She completed her Fellowship in Neonatal-Perinatal Medicine from Northwestern University, Chicago, IL. She has been in BUMCP since 2010. Currently, she serves as Chief, Department of Pediatrics and Medical Director of NICU, BUMCP. She is also the Neonatal ECMO program director at BUMCP and a Clinical Assistant Professor, University of Arizona College of Medicine, Phoenix.

Dr. Rao has been actively involved in clinical research and has been a Principal Investigator or Sub-investigator for several clinical studies in the NICU. She has collaborated with faculty from University of Arizona and published many articles. She was the NICU rotation liaison for pediatric residents from Phoenix Children's Hospital. She has played a key role in education for NICU nurses. She has actively participated in several CQI projects in the NICU.

The Section Head reports directly to the Chair, Department of Obstetrics and Gynecology. The Section Head serves as the leader of the division, responsible for achieving programmatic excellence as a senior faculty leader. The Section Head has responsibilities that include maintaining and enhancing graduate medical education training in the division and providing leadership and oversight to divisional activities.



### **Amy Reyes, MSN, RN, RNC-OB**

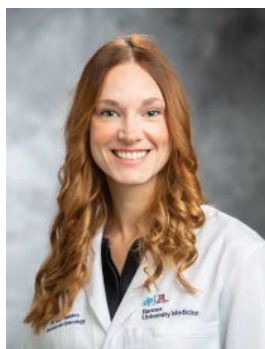
RN Director for Women's and Neonatal Intensive Care Unit  
Banner – University Medical Center Phoenix

Amy Reyes joined B-UMCP on October 18, 2021 as the new RN Director for Women's and NICU. Amy brings with her more than 23 years' experience in nursing in the specialty area of Women's and

Infant services. Amy is from Oregon where she worked in a variety of hospital systems from small community to large trauma centers. She has been a leader for 15 years in all areas of WIS including high risk Labor & Delivery and Level II NICU.

Amy received her Master of Science in Nursing from University of Phoenix, holds a BS in Nursing and advanced board certification in inpatient obstetrics. Amy maintains current certification in ACLS, PALS, BLS, NRP and TNCC. Amy is a member of AWHONN and the Northwest organization of Nurse Executives and Leaders.

In her free time, Amy loves to spend time with her family which includes 4 children. Her oldest daughter is 22 and lives in LA, her 19-year-old son attends Grand Canyon University, a daughter who is a senior in high school and a daughter who is 9. Amy enjoys mountain biking, swimming, and traveling.



### **Kelley T. Saunders, MD, MPH, FACOG**

Associate Program Director of Obstetrics & Gynecology Residency Program  
Clinical Assistant Professor  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

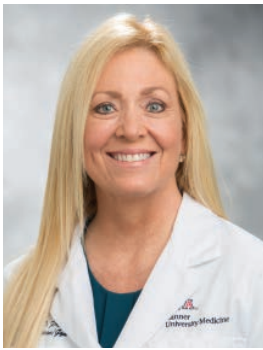
Dr. Kelley T. Saunders attended Arizona State University where she received a Bachelor of Science in mathematics. After receiving her master's in public

health and medical degree from the University of Arizona College of Medicine - Phoenix she graduated from our own University of Arizona College of Medicine Phoenix

Upon completion of residency, she joined our faculty as a clinical assistant professor at the University of Arizona College of Medicine – Phoenix, is a sit leader for the Integrative Medicine in Residency program through the University of Arizona Andrew Weil Center for Integrative Medicine, and is the Associate Program Director for the OBGYN Residency. She is a member of the Graduate Medical Education Resident Wellness Committee and

Patient Safety-Quality Improvement Committee. She serves as a co-chair for the annual Graduate Medical Education High Value Idea Competition which supports collaboration amongst disciplines, focusing on quality and reduce cost of care.

Dr. Saunders enjoys all aspects of Obstetrical and Gynecological care. She has an interest in integrative health and wellness for the prevention of disease. Her current research projects include utilization of telehealth services in the postpartum period, media portrayals of OBGYN and their effect on patient perceptions, and adverse childhood experiences and their impact on pregnancy related outcomes.



## **Debra Wickman, MD, FACOG, NCMP, CSC**

Director of Female Sexual Medicine, Vulvar Medicine and Menopause Health  
Female Sexual Health Fellowship Director  
Clinical Assistant Professor of Obstetrics and Gynecology  
University of Arizona College of Medicine  
Banner – University Medical Center Phoenix

Dr. Debra Wickman earned her medical degree from the University of Washington in Seattle, then stayed to complete her residency training in Obstetrics and Gynecology at the same institution. She went on to obtain fellowship training in female sexual medicine at the University of California, Los Angeles. She was in private practice for more than ten years prior to joining the faculty in 2014.

She brings a unique blend of mind-body medicine to her field of expertise, having also completed certification through AASECT as a sexuality counselor. She is an avid public speaker and workshop leader, having presented for multiple years at the annual meetings of ACOG and AASECT. She has developed her own form of sexological gynecology with the Integrative Pelvic Exam, based on the 4-D Wheel of Sexual Experience, exploring the realms of body/mind/heart/spirit as she helps women

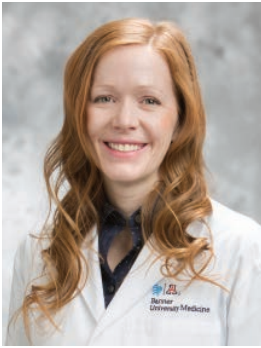
navigate the road to sexual wellness and pleasure.

Dr. Wickman's research interests include improving sexual self-esteem, helping women connect with sexual function and pleasure, restoring vaginal health in the face of chronic vaginitis or vestibulodynia; and resolving sexual pain. The freestanding center for sexual health, operating as a satellite through the Women's Institute, is thriving with a clinical service line to meet the needs of patients, and referring providers. We continue to develop sexual health programs, and plan research in sexual medicine, education for the community, and cutting-edge training for the residency program.

In early 2022, Dr. Wickman will become Director of the Fellowship in Female Sexual Medicine, as we add this new 2-year program to our postgraduate training opportunities following completion of Ob/Gyn residency.







## **Candice Wood, MD**

Director of Perinatal Mood Disorders Clinic  
Clinical Assistant Professor  
University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix

Dr. Candice Wood attended the University of Utah where she graduated Cum Laude with a degree in Chemistry and a minor in Business.

She then attended the University of Colorado School of Medicine where she fell in love with medicine and specifically women's health. She then came to the Banner University of Arizona Phoenix for her Ob/Gyn training. During her training she found a love of teaching and happily accepted a job as a faculty member in the residency program where she has been for the last 14 years. Soon, Dr. Wood will be starting a Perinatal Mood Disorders clinic.

Dr. Wood enjoys taking care of adolescents all the way up to postmenopausal patients and beyond

and everything in between. She especially loves the opportunity for long term care over these different phases of life that Obstetrics and Gynecology allows. She has recently taken a special interest in women's mental health and worked to obtain a certification in perinatal mood disorders. She is passion-ate about empowering woman to live their best life physically and mentally. She is actively seeking out ways to break down barriers to diagnose and treat perinatal mood disorders and work to find ways to prevent them.

Outside of work, Dr. Wood is busy with her husband and six children. She loves running, pilates, and cooking. But more than anything she loves being with her husband watching their kids play sports, dance, or perform one of their original plays.



## **Michael Urig MD, FACOG**

President, Board of Directors  
Chief of Service, Department of Obstetrics & Gynecology Women's Health Arizona  
Banner – University Medical Center Phoenix

After graduating from the University of Colorado Medical School, Dr. Urig came to Phoenix where he completed his residency at what was then known as Good

Samaritan Medical Center (now Banner University) in 1989. Following residency, he joined Maricopa OB/GYN Associates (MOGA) which is one of the primary teaching groups at Banner. He serves as President of Women's Health Arizona, the largest group of private practice OB/GYN physicians in the state.

Dr. Urig has been on the teaching faculty in this department for more than 30 years and is currently the associate chair and Center Chief of Obstetrics. Dr. Urig is an associate clinical professor at the University of Arizona – College of Medicine, Phoenix. Dr. Urig serves on many hospital committees including serving as chief of service for many years. He is a coleader on the Clinical Consensus Group for the Banner system and plays an integral role in assuring evidence based medicine is used to optimize patient care throughout the system.

# Department of Obstetrics and Gynecology Residency Program

The University of Arizona College of Medicine – Phoenix  
Banner – University Medical Center Phoenix



The quality and reputation of this wonderful program rests squarely on the shoulders of 36 bright, compassionate, and selfless residents and the generosity of faculty members whose commitment to education advances the knowledge and skills of our residents every single day. As the pandemic changes the shape of medical education and the conditions of the healthcare work environment, we continue to look for opportunities to improve an already excellent training program. To better support our residents over the past year, we have increased the number of ombudspersons for each residency class and implemented an individual mentorship program for our interns. We have engaged more faculty members and department leaders in the resident recruitment process. Our residents and faculty have demonstrated incredible resilience, and they continue to be thoughtful about their duty as healthcare leaders. They have developed the agility necessary to adapt to new policies that affect their ability to learn and spend time together. We do not know how things will change

for us over the next year, but we are more confident than ever in our ability to respond to any new challenges that arise. We remain committed to creating a safe environment for our learners while continuing to provide the breadth of clinical and surgical experience that they require to ultimately practice independently.



# Medical Student Education

Banner – University Medical Center Phoenix is a core clerkship site for the University of Arizona College of Medicine – Phoenix where third year students work with our outstanding faculty and residents during their core clerkship in obstetrics and gynecology and fourth year students return for a variety of electives. We also host students from Midwestern University College of Osteopathic Medicine, AT Still School of Osteopathic Medicine and visiting students from medical schools across the country.

The ongoing innovation at the University of Arizona College of Medicine - Phoenix places an emphasis on adult learning theory with an integration of a multi-disciplinary, team-based care in an evolving health care system. No longer do students sit through "lectures"... instead, they are engaged in hands-on problem solving based on real and simulated patient experiences. Through a flipped-classroom model, learners do their reading and preparation before didactic sessions and have access to multimedia resources for self-study. When brought together in teams with faculty mentors, they participate in case-based care and hands-on simulation of obstetric and gynecologic clinical experiences. This approach augments a robust exposure to the field of obstetrics and gynecology through participation in patient care at Banner – University Medical Center Phoenix.



# Obstetrics and Gynecology Residency Program



## Our Program

- Nine residents per year
- No night float; specialized night rotation for interns
- Night call at only one hospital
- Traditional 24-hour call schedule years two through four

## Teaching & Education

- Clinical clerkship site for University of Arizona
- State-of-the-art simulation education and training at SimET Center with DaVinci trainer at Banner – University Medical Center Phoenix
- Dual-console DaVinci robots in operating rooms
- Daily protected educational lectures
- Consistently at or above 50th percentile nationally for operative numbers

## Benefits

- Annual resident retreat
- Third-year and fourth-year elective time
- Meal card allowance and up to twice weekly catered lunch
- Four weeks of paid vacation annually, along with a flexible holiday schedule
- Free health insurance for residents and their families
- Specialized OB/GYN resident call rooms adjacent to L&D
- Moonlighting permitted for qualified upper-level residents
- Financial assistance with board and USMLE costs
- Financial assistance for global health opportunities

## Beyond Residency

- Demonstrated success in fellowship match across all sub-specialties
- About 50 percent of graduates stay in Arizona to practice

## Patient Population

- 5,500 deliveries per year
- Diverse patient population
- Central tertiary care center with large referral area
- Work side-by-side with other residency programs including: General Surgery, Orthopedic Surgery, Psychiatry, Internal Medicine, Med/Peds, Family Medicine, Emergency Medicine and fellows across many specialties

## Research

- Supported research by faculty mentors in field of resident's choice
- University assistance with statistical analysis
- Funding provided for traveling to presentations

# Banner Simulation Centers

Banner Health runs one of the largest multidisciplinary simulation education programs in the United States to train physicians, nurses, allied health care professionals and emergency responders to treat a range of patients, from infants to adults. We are transforming health care delivery through simulation, learning, and research across Banner from our four locations in Mesa, Tucson, and Phoenix in Arizona and Loveland in Colorado.

At Banner's simulation centers, we use mannequins, simulators and virtual-reality programs to train the next generation of health care professionals in an environment that mirrors real-life medical situations. Hundreds of medical students, residents, physicians and nursing staff are educated using simulations each year.

Here at Banner – University Medical Center Phoenix, we moved into a newly built simulation space in May 2019. Our cutting-edge medical mannequins breathe, blink, code, seize, bleed, speak and even give birth, all with programmable complications to simulate potential medical conditions. Participants can practice their

response to critical medical emergencies and hone their skills in commonly performed procedures such as inserting chest tubes or central lines.

With this training, health care providers can acquire the skills needed to deliver safer and the highest quality of patient care.

## Key Features Offered

- Only testing center in Arizona for Fundamentals of Laparoscopic Surgery and Fundamentals of Endoscopic Surgery Testing Center
- Speciality Units including birthing suite
- Operating room
- 24/7 Virtual Reality room for Residents
  - Laparoscopic and Hysteroscopic Trainers
  - OB Ultrasound trainer
  - DaVinci robotic virtual trainer



## Simulation Medical Center Staff

Karen Josey, M.Ed. BSN, CHSE  
Sr. Director of Simulation – Banner Health

Carrie Brandon, MS, RN  
Simulation Director

Kerri Bolstad, BSN, RN  
Simulation Director

Lorena B. Smith, MSN-L, BSN, RN  
Simulation Director

## Women's Quality and Patient Safety Council

The Women's Institute utilizes a multidisciplinary team model to oversee quality and patient safety outcomes to deliver reliable, value-based care. Quality indicators are identified annually by the leaders of the specialty areas that comprise the Women's Institute. These areas include OB, NICU, Well Newborn, OB Anesthesia, GYN/ GYN Oncology, and The Women's Center Clinic.

Inpatient indicators such as management of postpartum hemorrhage, hypertension in pregnancy, safe surgery compliance, infection rates, timeliness of antibiotic administration to infants exposed to chorioamnionitis, frequency of use of general anesthesia for cesarean sections and identified Vermont Oxford indicators are examples of the types of clinical outcomes that are reviewed and trended. Outpatient indicators include depression screening, postpartum follow-up rate, no show rate, and referrals made to other specialties.

Additionally, the Joint Commission's Perinatal Core Measures, patient satisfaction, length of stay, and the Nursing Sensitive Quality Indicators (CAUTI, CLABSI, falls, etc.) are integrated into our quality monitoring model. Our Specialty Programs (Accreta, Fetal Surgery, Virtual ICU, High BMI, Substance Use Disorder & OB Trauma) also have identified indicators that are reviewed.

Sustained results that consistently meet, or exceed, benchmarks is our consistent focus. Items that are not meeting identified targets are discussed and assigned to defined owners for investigation, correction and monitoring. Our Women's Institute team connects to the facility's Quality & Patient Safety Council through a defined reporting structure.



Council Members Representing Only Part of the 30 Members who Dedicate their Knowledge and Compassion to Women's Patient and Quality Safety Council

# Obstetrics

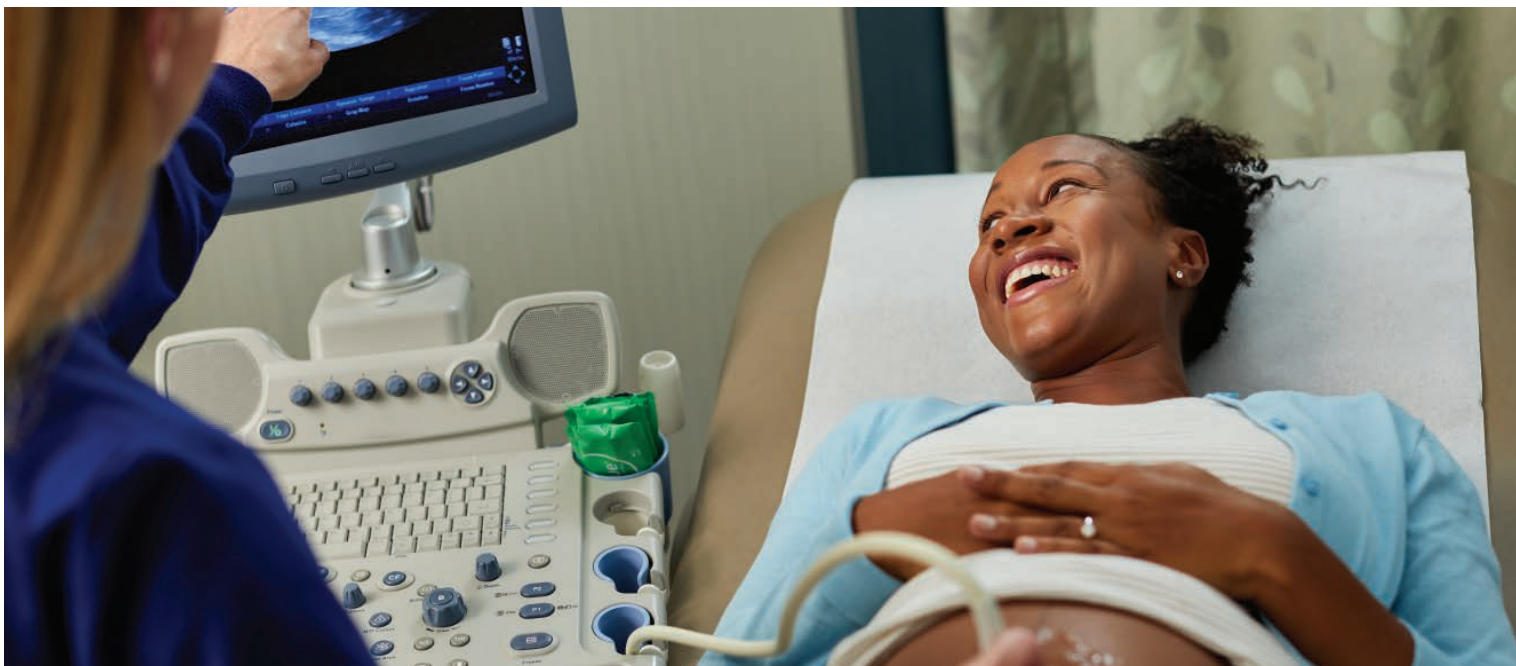
Our inpatient obstetrical unit provides 28 Labor and Delivery Rooms (LDR's). Each LDR is designed for the spectrum of natural, unmedicated labor in a family-oriented environment, to the high-risk ICU level care for complicated labor and delivery. Over 5,000 deliveries are performed each year in our unit. A supportive environment is provided for our patients who desire minimal intervention, active movement during labor, minimal monitoring, and the option for labor tubs. Skin-to-skin bonding is emphasized in all deliveries, even cesarean sections, immediately after delivery with "the golden hour" and is considered very important for initiation of bonding and breastfeeding. Midwifery has been instituted and plans are in place for the growth of the midwifery practice in the department. We have instituted the use of nitrous oxide as an added option for pain relief during labor. There are four obstetrical surgical suites on the unit, including one dedicated to multiple gestations. One surgical suite and its anteroom have been made a negative pressure OR for COVID-19 patients and patients under investigation.

Banner – University Medical Center Phoenix has implemented policies and processes to verify that all deliveries prior to 39 weeks gestation are medically indicated utilizing the most current national guidelines. We also have been at the forefront of utilizing evidenced-

based outpatient cervical ripening protocols. Outpatient cervical ripening lowers the risk of labor interventions, cesarean section, and complications while also improving patient satisfaction, resource utilization, and reducing costs. We recently expanded our recommendation for outpatient cervical ripening to include all deliveries at 39 weeks gestation and beyond who do not meet established medical criteria for inpatient induction.

The development of an Obstetrical Rapid Response team comprised of nurses, resident physicians, anesthesiologists, obstetricians, and maternal fetal medicine specialists has allowed us to respond to emergencies anywhere in the hospital. Twenty-four-hour in-house anesthesia, maternal fetal specialists, neonatal specialists, and obstetricians allow us to respond to all of the needs of our patients at all times.

Indicators such as elective delivery before 39 weeks, length of stay, readmissions, incidence of postpartum hemorrhage, percent-age of patients threatening delivery before 34 weeks who receive steroids, and breast-feeding success are just some of the indicators that are evaluated on a regular basis to maximize safety, insure excellent outcomes, and provide better quality care.



# Gynecology

The Division of Gynecology at Banner – University Medical Center Phoenix involves outpatient and inpatient management encompassing the spectrum of Women's Health issues. Comprehensive Women's Care includes:

- Well Woman Visits
- Menstrual abnormalities
  - Anovulation and infrequent periods
  - Heavy periods
    - Hormonal treatment
    - In Office endometrial ablation
- Fertility evaluation and treatment
- Abnormal pap smears and cervical dysplasia precancerous changes
  - Colposcopy
  - Chemical ablative and excisional procedures
- Contraception and family planning
  - Hormonal contraception
    - Birth control pills
    - Contraceptive ring
    - Depo-provera
    - Birth control patch
  - Long-acting reversible contraception
    - Hormonal IUD
    - Copper IUD
    - Hormonal implants
  - Permanent contraception
- Polycystic ovarian syndrome
- Pelvic pain
- Endometriosis
- Menopause management
- Postmenopausal bleeding
- Gynecological ultrasound
- Ovarian cysts
- Diagnosing, treating and counseling for sexually transmitted infections





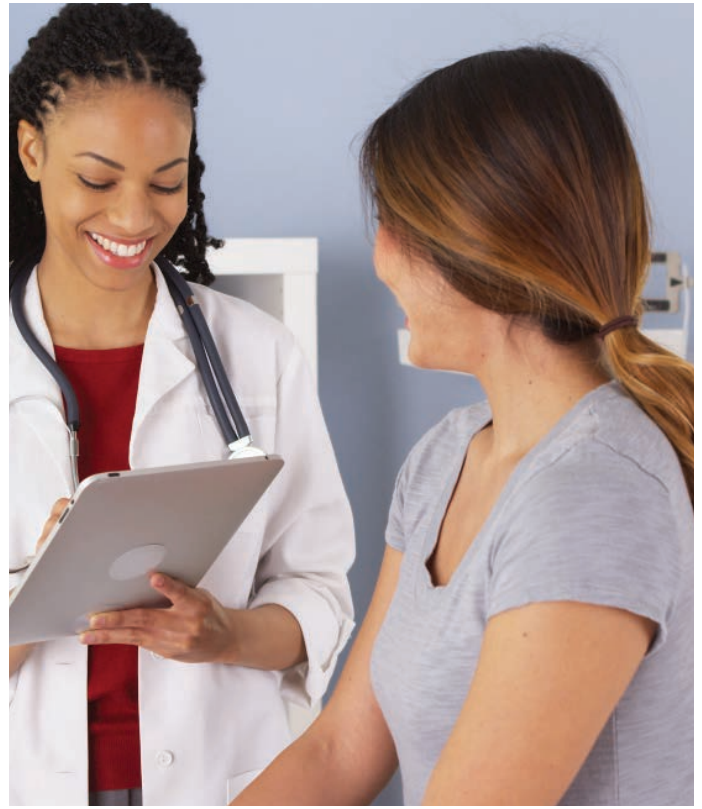
Uterine fibroids: medical management and surgical management including:

- Hysteroscopic resection
- Fibroid removal (myomectomy)
- Hysterectomy
  - Endometrial ablation
  - Medical management

A variety of surgical approaches for diagnosis and treatment of various conditions tailored to patients individual needs.

- Vaginal
- Laparoscopic
- Robotic
  - Mini laparotomy
  - Laparotomy

Ongoing development involves Integrative Gynecology and a surgical gynecology consensus group to determine the best surgical route for each individual patient. We work closely with other specialists when a patient's disease process requires expertise out-side of our scope.



# Gynecologic Oncology

The Division of Gynecologic Oncology at Banner – University Medical Center Phoenix is dedicated to helping women with the diagnosis and treatment of reproductive tract malignancies, pre-malignancies or suspected malignancies.

## Conditions Treated include:

- Endometrial Cancer
- Ovarian Cancer
- Cervical Cancer
- Vulvar and Vaginal Cancer
- Gestational Trophoblastic Disease
- Complex Gyn Cases / Adnexal Mass
- Surgical Management of Placenta Accreta Spectrum

**OUR MISSION** is to provide comprehensive and multidisciplinary care resulting in the most up to date and innovative treatment for these conditions. Special attention is made to provide a caring and supportive environment by using a dedicated unit that uses expertise in nursing care, oncology pharmacists/case managers, nutrition specialists, genetic counselors and gynecologic oncologists.

## Our GYN oncology services include:

- Minimally invasive and robotic surgical teams
- Cancer genetics program
- Direct access to national clinical trials research
- Inpatient and outpatient surgery
- Chemotherapy and radiation oncology
- Integrated care with palliative care services

## Special Features of the GYN oncology division:

- Manage complex cases from throughout Arizona
- Dedicated women's specialty service
- Expertise in surgical management for abnormal placentation (Placenta Accreta Program)
- Educate 36 OB/GYN resident physicians per year in GYN Oncology and complex Gynecologic Surgical Care
- Cancer screening and prevention program with community outreach
- Faculty appointments at University of Arizona College of Medicine
- Regional leader in gynecologic oncology
- Principal investigators in research involving:
  - PARP inhibitors
  - Immune Therapy
  - DNA vaccine therapy for cervix cancer



**Dr. Lyndsay Willmott**  
Professor Ob/Gyn  
Section Head / Gyn Oncology



**Dr. Heather Dalton**  
Assoc. Clinical Professor  
Ob/Gyn

**Gyn Oncology Referral  
Phone Number:**

**888.972.2873 (CURE)**

# Women's Health Institute

The Women's Health Institute takes a unique approach to women's health by combining academic training for obstetrics and gynecology residents and fellows with expert, individualized care by board-certified faculty physicians. This allows the practice to provide advanced care for a breadth of complicated and routine women's health issues while advancing scholarship and leading innovation.

Our Women's Health Institute is a key resource in central Phoenix because Banner - University Medical Center Phoenix is the primary referral site for high acuity women's reproductive diseases. The Institute has accomplished surgeons to perform the most complex surgeries, sexual health specialists to care for sensitive and often overlooked medical concerns, and generalists to provide compassionate continuity of care.

## Women's Institute Locations

1441 N. 12th St.  
Phoenix, AZ 85006

15810 S. 45th St., Ste. 105  
Phoenix, AZ 85048

7555 E. Osborn Rd.  
Scottsdale, AZ 85251

**Schedule an appointment at  
all three locations:**

602.521.5700



**Women's Institute Clinic Team**



**Women's Institute Addiction Medicine Team**

# Women's Sexual Health

The Sexual Medicine Program operates within the Women's Institute as a unique and innovative resource for women throughout the greater Phoenix area, and beyond. It is the only practice in Arizona dedicated to sexual health for women, and has launched new integrative programs to address both mind and body concepts crucial toward improving and resolving the sexual concerns of women. Aligned with that goal, we offer complete evaluation and care for all hormonal treatment options and diagnosis and treatment of all vulvar and vaginal pain disorders.

Because sexual concerns are often linked with other medical conditions or medication side effects, we collaborate with primary care physicians or appropriate providers in other disciplines to provide a safe and well-managed plan of care for each woman.

The Sexual Medicine Program specializes in:

- Comprehensive diagnosis and treatment of women's sexual concerns
  - Low libido/desire
  - Diminished arousal
  - Difficult or absent orgasm
  - Sexual pain
  - Sexual trauma
- Diagnosis, treatment and long-term care of vulvar disorders
  - Vaginismus and disorders of vaginal penetration
  - Vaginal stenosis/narrowing
  - Vulvar vestibulitis
  - Inflammatory vulvar disorders -Lichen Sclerosus, Lichen Planus, Lichen Simplex Chronicus, etc.
  - Sexual and body image effects from cancer treatment
  - Chronic vulvar irritation, vaginal infections
  - Sexual effects from associated medical illnesses, surgery or medications
  - Sexuality counseling related to body image, sexual trauma, cancer treatment, and/or any sexual concerns
  - Procedures to improve function:
    - Femilift vaginal laser to improve vaginal atrophy
    - Genital platelet rich plasma (PRP) injections (aka the "O Shot")
- Menopause and all options regarding hormone therapy
  - Bioidentical hormone pellets

- FDA-approved and bioidentical compounded individualized hormone regimens
- Non-hormonal treatment options
- Young women empowerment program – preventive sexuality education and counseling session to educate and promote healthy self-image and relationship dynamics
- Close collaboration with community sex therapists and psychotherapists to provide holistic care to their clients

We regularly conduct community workshops – both live and virtual, dealing with sexual health, as well as professional trainings for the medical community. Research projects in women's sexual medicine have resulted in presentations in international meetings – the World Congress of Sexual Medicine in Beijing, China; the World Association of Sexual Health in Mexico City; the International Society for the Study of Vulvovaginal Disease in Torino, Italy; and annual clinical/scientific meetings of American professional societies such as ACOG and AASECT.

We are designing a research project using technological advances in virtual reality and neuromodulation to improve sexual desire, starting with cancer survivors, and plan to launch it as an ongoing program – meeting the needs of our patients, through the lens of an evidence-based focus.

Finally, we are excited to announce our new, 2-year postgraduate Fellowship in Female Sexual Medicine, starting 2022. Our unique model of diagnosis and treatment incorporates programs that educate, empower and encourage personal growth, sexual discovery and healing for women, while we expand our reach to the next generation of compassionate physicians.



Women's Sexual Health Team, Ahwatukee Clinic

# Female Sexual Medicine Fellowship

The Banner University Medical Center – Phoenix Female Sexual Medicine Fellowship Program is a comprehensive two-year program designed to expand the fellow's knowledge base and expertise in treating the spectrum of sexual concerns – working in the outpatient clinic setting, with diagnosis and management of female arousal/desire disorders, sexual pain, difficult/absent orgasm; with women of all ages, many with multiple co-morbid conditions affecting their sexual vitality.

Our full academic integration with the University of Arizona College of Medicine allows for ample research, academic and didactic opportunities to enable the fellows to make evidence-based contributions to the rapidly growing field of sexual medicine.

Our comprehensive curriculum encompasses all facets of female sexual medicine, acknowledging there are significant co-morbidities that must also be primarily managed to provide the most comprehensive care for our patients. Menopause presents many challenges related to shifts in hormone production that affect the body and mind. The fellows will become well-versed in all options for hormone supplementation, as well as non-hormonal options to treat the breadth of midlife symptoms. Systemic hormone regimens as well as local vaginal treatments will be mastered. Sexual pain is another far-reaching category that requires advanced knowledge and skills to help resolve. The fellows will become adept with managing vestibulodynia, vulvodynia, vaginal stenosis, high tone pelvic floor dysfunction and all types of inflammatory vulvitis. There will be collaboration with the MIGS team in treating chronic pelvic pain and pudendal neuralgia. Fellows will perform related surgical procedures such as vulvar vestibulectomy and labiaplasty.

Helping women with intimate concerns requires a high level of trust and rapport. It is vital to gain skills in the art of counseling, guiding and tuning-in to multiple aspects of human behavior and how to effectively interact – to motivate and inspire patients toward a satisfying life at all levels. This is a crucial component to the Fellowship.

Our diverse core faculty includes physicians and personnel from several specialties allowing for exposure to a variety of different procedures and techniques to maximize the fellow's clinical repertoire.



Female Sexual Medicine Team

During the two-year program, in addition to the foundational sexual medicine clinic experience, the fellows gain exposure to cancer survivorship, integrative medicine, pelvic floor medicine/physical therapy, urogynecology, nutrition, and sex therapy/sexology.

Fellows actively participate in teaching OB/GYN residents and medical students. The fellows present a Grand Rounds topic related to Female Sexual Medicine twice a year. Each fellow is expected to present yearly at the national level, with the intention of submitting a manuscript for a peer reviewed publication. At the conclusion of the two years, fellows will be well-prepared to function as highly sought referral consultants in either academic medicine or private practice, according to their professional choice.



**Debra Wickman, MD, FACOG, NCMP, CSC**  
Director of Female Sexual Medicine  
Female Sexual Health  
Fellowship Director  
Clinical Assistant Professor

# Female Pelvic Medicine and Reconstructive Surgery

The Division of Female Pelvic Medicine and Reconstructive Surgery at Banner – University Medical Center Phoenix consists of double-boarded fellowship trained physicians who are experts in the care of women with advanced pelvic floor disorders.

They treat several common conditions such as:

- Moderate to severe pelvic organ prolapse
- Stress Urinary incontinence (Participated in ongoing clinical trial regarding the treatment of stress urinary incontinence)
- Fecal incontinence
- Overactive bladder
- Genitourinary fistulas
- Bladder pain syndrome
- Defecatory dysfunction
- Urethral diverticula
- Genitourinary syndrome
- Recurrent cystitis
- Genitourinary mesh implant complications
- Perineal and anal sphincter injury due to obstetric complications

Patients have the opportunity to have a consultation to discuss all options for management including conservative and surgical measures and in office therapy.

- Mesh revision and removal
- Rectovaginal fistula repair

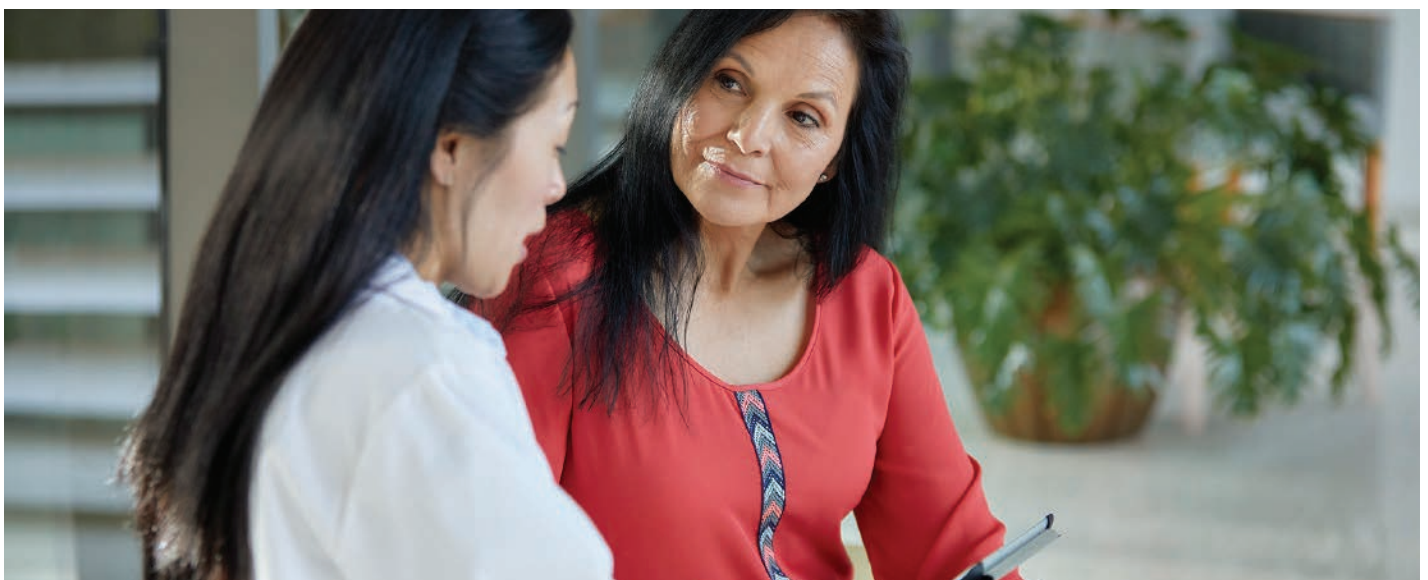
- Vesicovaginal fistula repair
- Urethral diverticulectomy
- Thermal radiofrequency treatment of vagina for atrophy (ThermiVA)
- Minimally invasive surgery for pelvic organ prolapse
- Sacrospinous ligament suspension
- Uterosacral ligament suspension
- Abdominal sacral colpopexy
- Hysteropexy
- Anterior repair
- Posterior repair
- Enterocele repair
- Perineoplasty
- Obliterative vaginal surgery

Surgical management of stress urinary incontinence has multiple options, including:

- Mid urethral sling
- Autologous fascial sling
- Retropubic urethropexy
- Urethral bulking injection

We offer multiple advanced therapies for overactive bladder:

- PTNS (Peripheral Tibial Nerve Stimulation)
- Sacral neuromodulation (Interstim and Axonics)
- Pelvic floor muscle therapy
- Intravesicular Botox injections



## Chronic Pelvic Pain and Endometriosis Clinic

We have created a comprehensive chronic pelvic pain and endometriosis clinic to care for the complex needs women encounter in the diagnosis and treatment for these associated conditions. Our clinic offers compassionate, quality care and incorporates a holistic approach. Within our office we offer a seamless diagnostic approach with advanced pelvic ultrasound capabilities. We collaborate with our key partners including gastroenterology, urology, radiology, physical therapy, nutrition and naturopaths. We provide a

balance of medical and surgical treatments to meet the diverse needs of our patients.

This year our multidisciplinary team will learn together from international leaders and experts in the field. We will primarily focus on novel ultrasound diagnostic technology and clinical applications. We continue to build our treatment options to ultimately improve the quality of care we provide for women in our community.



# Reproductive Endocrinology and Infertility

Banner – University Medical Center Phoenix provides compassionate, comprehensive, individualized care for women with a variety of infertility and reproductive endocrine conditions. These include:

- Unexplained infertility
- Male factor infertility
- Fallopian tube disease
- Uterine disease
- Amenorrhea
- Polycystic ovarian disease
- Ovulatory disorders
- Recurrent pregnancy loss
- Endometriosis
- Diminished ovarian reserve
- Advanced maternal age
- Complicated menopausal syndromes
- Recessive genetic disorders
- Galactorrhea
- Pelvic inflammatory disease (PID)

Our treatment programs include:

- Ovulation induction
- Superovulation and insemination
- State-of-the-art In Vitro Fertilization (IVF)
- Minimal stimulation/Gentle IVF
- Laser-assisted pre-implantation genetic screening
- Assisted hatching
- Fertility preservation
- Egg and blastocyst vitrification
- Embryo banking
- Fresh donor egg services
- Frozen donor egg services
- Embryo donation
- Gestational carrier
- Hormonal therapy
- Minimally invasive surgery

Our physicians are all fellowship-trained, board certified and have over 20 years of experience. They are not only leaders in their field but have led the implementation of procedures to make each patient's experience safe and reduce the risk of multiple pregnancies.





## High-Risk Pregnancy

The Division of Maternal Fetal Medicine (MFM) at Banner – University Medical Center Phoenix is dedicated to providing the utmost in compassionate state-of-the-art medical care to women with high-risk pregnancies.

We treat a wide variety of maternal and fetal conditions at any gestational age which increases risks for adverse outcomes. These include:

- High-order multiples
- Placenta accreta
- Placenta previa
- Pre-term labor
- Premature rupture of membranes
- Maternal cardiac conditions
- Morbid obesity
- Fetal anomalies (such as omphalocele, neural tube defects, and cardiac defects)
- In Utero procedures (Periumbilical Sampling, Intrauterine Transfusion, Shunt Placement)

We accept transports of patients by fixed-wing aircraft or via helicopter from across Arizona to receive their care at Banner – University Medical Center Phoenix.

A team of Maternal-Fetal Medicine and Neonatal specialists are available 24/7 to provide bedside care. We work closely in caring for critically-ill pregnant patients with a readily available, highly specialized diverse team of:

- Intensivists
- Cardiologists
- Pulmonologist
- Trauma surgeons
- Gynecologic oncologists
- Urologists
- Interventional radiologists



## Substance Use Disorder in Pregnancy

Banner – University Medical Center Phoenix OB department is proud to announce a new Substance Use Disorder in Pregnancy Program. Our large interdisciplinary team, led by Addiction Medicine, Toxicology, Maternal Fetal Medicine, and Neonatology experts, has been working for over a year to establish a program focuses on comprehensive care of pregnant women with Substance Use Disorder. Collaborative patient care is provided in the outpatient setting at our Women's Health and Family Medicine Institutes, as well as inpatient in our Obstetric units. Social work and case management teams are instrumental in connecting patients with the individual resources they need. The Neonatal Abstinence Syndrome (NAS) program cares for infants after delivery in both our Neonatal Intensive Care Unit and Newborn Nursery. Some select newborns and their families have even been able to be discharged to an outpatient NAS treatment program successfully minimizing the time in the hospital.

The HEAL program launched in January 2021. This program provides behavioral health care, peer support and wellness coaching services. We welcomed our first HEAL baby in April 2021. The program is supported by the Halle Foundation and an AHCCCS grant.



# Obesity

Maternal obesity has been increasingly recognized as significantly associated with adverse pregnancy outcomes. In fact, essentially all adverse perinatal morbidities have been found to occur more often in the setting of maternal obesity. This modifiable risk factor has been looked at as a potential reason that we have sadly seen a rising maternal mortality rate in the United States over the past several decades.

As it is also well described that increasing degrees of obesity impart higher perinatal risks, the Department of Obstetrics and Gynecology Division of Maternal-Fetal Medicine (MFM) at BUMCP has developed a multidisciplinary comprehensive care team-approach program for providing specialized care of the obese

gravida, with particular focus on women with Class III obesity; BMI >40. Incorporating MFM physicians, neonatology, anesthesiology, bariatric and trauma surgical consultants, dedicated nursing staff, nutritionists and social services, in addition to the utilization of specialized equipment most suitable to the obese gravida designed to enhance patient safety, our aim is to achieve the highest level of care possible for these at-risk women.

Post-delivery, continuity of care with our Bariatric Medicine providers allows for an ongoing approach to maximizing health through the opportunity for weight loss using medically supervised non-surgical as well as minimally invasive bariatric surgery options.

## High Body Mass Index (BMI) in Pregnancy

Obesity in pregnancy increases the risk of maternal and fetal complications. With numbers of obese childbearing-age women rising, Banner University Medical Center Phoenix recognized the community need to provide specialized care for these families. In 2019, we developed a standardized interdisciplinary team approach to care for patients with a High BMI in Pregnancy (Pre-pregnancy BMI  $\geq 40$ ). This program combines our Women's Institute's expert high risk obstetric and neonatal care with the expert medical and surgical care of obese patients with our Bariatric Center. The team includes experts from Obstetrics, Maternal Fetal Medicine, Trauma Surgery, Bariatric Surgery, Anesthesiology, Neonatology, as well as Nursing, Nutrition, Social Work/Case Management, among others. Our experienced doctors and nurses provide personalized care for each family and are trained in any complications that may arise during pregnancy or delivery. We have specialized equipment utilized for patients with a high BMI. This coordinated approach throughout pregnancy and delivery helps to improve outcomes for both the mother and the newborn. After delivery, our Bariatric providers are available to discuss any weight loss goals and resources including our weight loss program that includes both medically supervised non-surgical and minimally invasive bariatric surgery programs.



## Pregnancy and Cardiovascular Disease

The Department of Obstetrics and Gynecology works closely in collaboration with the Division of Cardiology in identifying women at risk for heart disease. There are traditional risk factors that put women at risk for cardiovascular disease, but there is more research being done identifying sex-specific risk factors, particularly risk factors that appear during pregnancy, that uniquely identify women at a higher risk of cardiovascular disease within the following 10 years. Together we are identifying women at risk and with a team approach, we are assessing risk and working with our women patients to help them reduce their future risk of heart disease and stroke. Our approach to the life-long care of women is a unique collaboration of the Women's Institute and the Heart Institute.

Dr. Martha Gulati serves as the Chief of Cardiology at University of Arizona Phoenix, but serves also as the Center Director of the Women's Heart Center at BUMCP. This is the only women's heart center in the city of Phoenix and in the state of Arizona. She is recognized as an international expert in the prevention of cardiovascular disease in women, with a focus on female-specific risk factors for heart disease, with an emphasis on adverse pregnancy outcomes. Identification of women at risk at the earliest stages gives us the greatest opportunity for intervention and the ability to change the trajectory of future risk for cardiovascular disease.

## Enhanced Recovery After Cesarean Section



Enhanced Recovery After Surgery (ERAS®) is a multimodal evidenced based perioperative care pathway that is shown to decrease hospital length of stay, improve recovery time, improve patient outcomes, and increased patient satisfaction. ERAS pathways are used in multiple specialties and focus on a patient partnership that views the surgical experience from the prehospital visit through the postop recovery. At Banner – University Medical Center Phoenix, a multidisciplinary team including Nursing, Physicians, Anesthesia, Nutrition, and Pharmacy have come together to develop an Enhanced Recovery After Cesarean Section (ERACS) pathway specific for obstetrical patients. Evidence based components of the ERACS pathway focus on pain management, early ambulation, nausea and vomiting prevention, nutrition, infection prevention, and risk assessment. Positive

outcomes seen with the initial cesarean pathway included decreased hospital length of stay, decrease postpartum opioid and antiemetic use, and patient satisfaction. BUMCP now utilizes ERACS for all cesarean section surgeries. Recently, we have partnered with the Women's Health Clinical Consensus Group to implement the ERACS pathway for the Banner Health. ERACS displays innovation in obstetric care at Banner – University Medical Center Phoenix.

# Specialty Programs

## Placenta Accreta

With a commitment to excellence in the care of patients with abnormal placentation, Banner – University Medical Center Phoenix developed a multidisciplinary approach utilizing a team of highly-skilled specialists. Our comprehensive care management program addresses patient and family needs throughout the pregnancy, at the time of delivery, and postpartum.

An individualized plan of care is created for each mom-to-be by a team of experts in maternal fetal medicine, trauma surgery, gynecological oncology, anesthesiology,

interventional radiology, urology, neonatology, nursing, social work and case management.

Our experienced doctors and nurses are prepared to care for these highly complex pregnancies and deliveries, and for any emergencies that may arise. Patients have the knowledge and peace of mind that Banner - University Medical Center Phoenix has the resources to promptly assemble highly skilled specialists from multiple disciplines should the need arise.

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## Virtual ICU

*The following abstract summarizes a Viewpoint article published in the American Journal of Obstetrics and Gynecology in December 2016 (Leovic M, Starikov R, Robbins H, and Foley M.)*

Management of the critically-ill pregnant patient presents a clinical dilemma in which there is sparse objective data to determine the optimal setting for the provision of high quality care to these patients. This clinical scenario will continue to present a challenge for providers as the chronic illness and comorbid conditions continue to become more commonly encountered in the obstetric population. Various care models exist across a broad spectrum of facilities that are characterized by differing levels of resources; however, no studies have identified which model provides the highest level of care and patient safety while maintaining a reasonable degree of cost-effectiveness.

The health care needs of the critically-ill obstetric patient calls for clinicians to move beyond the traditional definition of the “ICU” and develop a well-rounded, quickly-responsive, and communicative interdisciplinary team that can provide high-quality, unique, and versatile care that best meets the needs of each particular patient. We propose a model where a “Virtual ICU” team composed of pre-selected specialists from multiple disciplines (maternal-fetal medicine, neonatology, obstetric anesthesiology, cardiology, pulmonology, etc.) participate in the provision of individualized, pre-contemplated care



that is readily adapted to the specific patient's clinical needs, regardless of setting. With this team-based approach, an environment of trust and familiarity is fostered amongst team members and well-thought-out patient care plans are developed through routine “pre-brief” discussions regarding individual clinical care for parturients anticipated to require critical care services. Incorporating debriefings between team members following these intricate cases will allow for the continued evolution of care as the medical needs of this patient population change as well.

## Obstetric Anesthesia

The division of Obstetric Anesthesiology at Banner – University Medical Center Phoenix consists of board certified anesthesiologists who head a team of highly trained medical professionals who bring state-of-the-art anesthesia care to all our obstetric patients. As part of our commitment to the highest level of both high risk and routine obstetric care, we staff the labor and delivery floor 24/7, 365 days a year.

We are the providers of education and training to both anesthesia residents and OB/GYN residents during elective time. We have designed and implemented a core curriculum which combines didactic teaching with supervised hands-on experience.

We are experienced in treating the highest risk, critically ill patients at Banner – University Medical Center Phoenix, and are well versed in life-saving fluid resuscitation, invasive monitoring, advanced airway management as well as complex pain management problems.



The Department of Obstetric Anesthesia works closely and collaboratively with our “virtual” obstetric intensive care team, our simulation department and Banner Health’s Women’s Institute. Team members from Obstetric Anesthesiology regularly participate in multi-disciplinary obstetric board checkout rounds to provide insight, teaching and up-to-date consultations.



## Integrative Medicine Program

The Integrative Medicine in Residency (IMR) program is a competency-based, interactive, online curriculum in integrative medicine designed for incorporation into residency education through the University of Arizona Andrew Weil Center for Integrative Medicine. It is currently used in family medicine, internal medicine, pediatrics, and psychiatry residencies across the country. The University of Arizona College of Medicine – Phoenix is one of the only OB/GYN residency programs to implement this curriculum for select interested residents in their 2nd, 3rd, or 4th year of training.

We are currently in our 7th year of participation in the IMR program with dedicated faculty to facilitate resident completion over the course of an academic year. Residents learn integrative approaches to common conditions in women's healthcare. The innovative online curriculum covers evidence-based topics in nutrition, exercise, pain management, vitamins, minerals, supplements, mind-body techniques and more. It has a strong focus on physician wellbeing and encourages multidisciplinary collaboration. Upon completion, residents have a broader understanding of complementary and alternative treatments with an enhanced focus on the therapeutic relationship between women's healthcare practitioners and their patients.



# Department of Obstetrics & Gynecology

## Minimally Invasive Gynecologic Surgery Program

### Our Commitment to Excellence

Our Minimally Invasive Gynecologic Surgery Program offers a number of advantages:

- Delivery of exceptional care
- Outpatient clinic conveniently located on the Banner – University Medical Center campus
- The expertise of locally and nationally renowned medical and surgical leaders in all specialties
- Multi-disciplinary care at every level
- State-of-the-art equipment: hysteroscopy, laparoscopy, and robotics
- A robust vaginal surgery program
- Collaboration with Women's Sexual Medicine
- High volume experience with complex procedures



### Minimally Invasive Gynecology Surgery Faculty (L to R):

Dr. Rachael Smith, Assistant Director

Dr. Jamal Mourad, Director

Dr. Nichole Mahnert, Assistant Director



# Minimally Invasive Gynecologic Surgery

## Division of Surgical Gynecology

At The Women’s Institute, we strive to provide and deliver exceptional care in the least invasive approach. While offering state-of-the-art, safe and compassionate treatment plans, we continuously track our patients’ data and results so that we can understand what measures, procedures and treatments offer the best possible outcomes.

Our patients can expect a caring and welcoming environment where academia and clinical medicine come together to deliver the highest possible quality care.

## Clinical Services

### Office Procedures

- Endometrial Ablation
- Hysteroscopy
- Cystoscopy
- Colposcopy
- IUD Insertion and removal
- Hymenectomy
- D&C
- Pelvic Floor Botox
- Pudendal Nerve Block
- LEEP

### Minimally Invasive Surgery

- Hysterectomy
  - Vaginal
  - Laparoscopic
  - Robotic
  - Mini laparotomy
- Ovarian cystectomy
- Endometriosis, DIE
- Robotic and Laparoscopic Myomectomy
- Adenomyosis
- Repair of pelvic prolapse, sacrocolpopexy
- Incontinence treatment, Laparoscopic Burch Procedure
- Ectopic Pregnancy
- Uterine Niche/C-section scar Deffect Repair

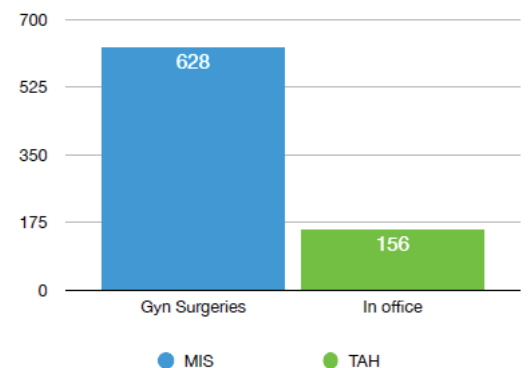
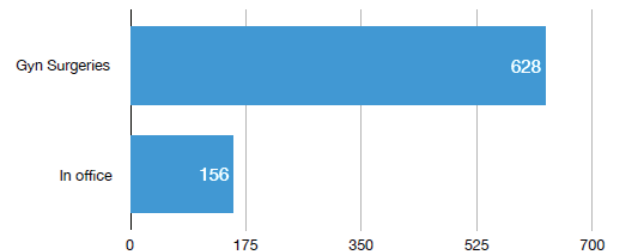
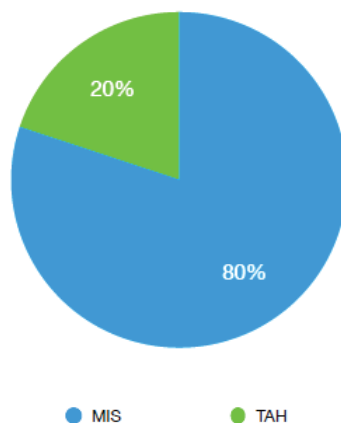
### Medical Treatment

- Hormone replacement
  - Pellets
  - Bio-identical hormones
- Couples therapy

## 2020-2021

| The Women’s Insitute – BUMCP |     |
|------------------------------|-----|
| Gyn Surgeries                | 628 |
| In Office                    | 156 |

| GYN Procedures 2020-2021 |      |
|--------------------------|------|
| Total GYN                | 2362 |
| Total HYST               | 872  |
| TVH                      | 93   |
| TAH                      | 94   |
| RTLH                     | 437  |
| TLH                      | 253  |
| Hysteroscopy             | 292  |
| Robotic R–Myomec         | 378  |





## 2020-2021

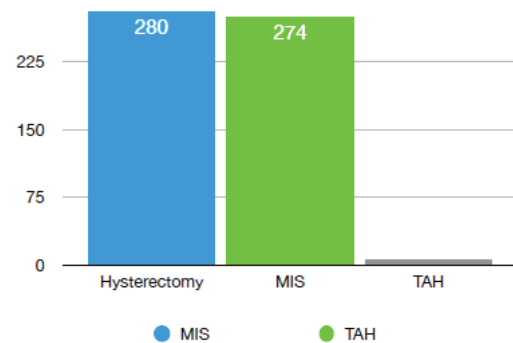
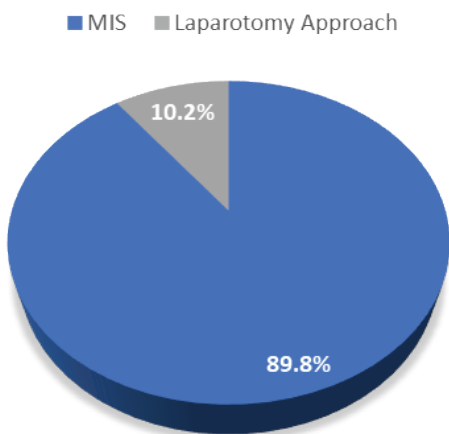
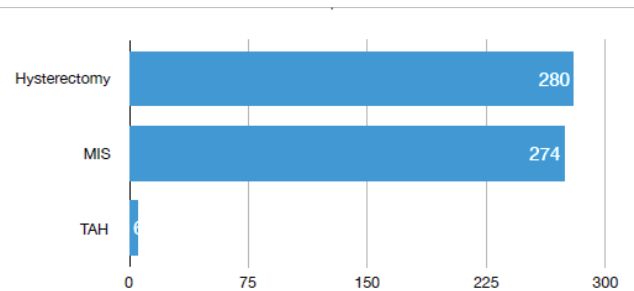
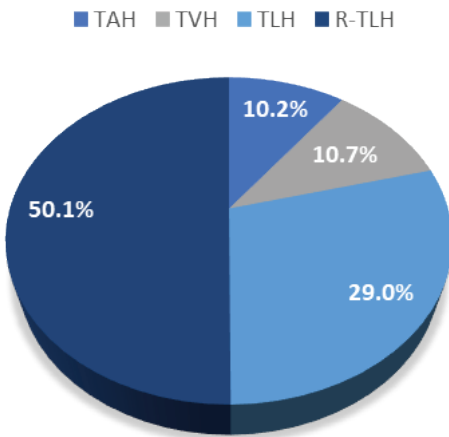
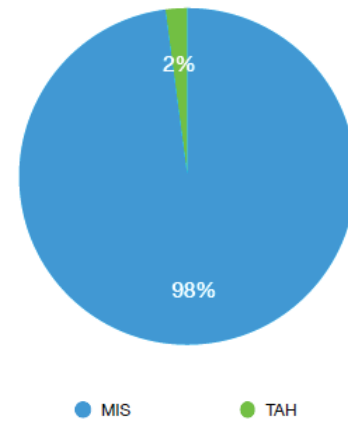
Hysterectomies performed: 872

Minimally invasive approach: 783 (89.9%)

Laparotomy approach: 89 (10.2%)

| Hysterectomy at BUMCP 2020-2021 | n(%)        |
|---------------------------------|-------------|
| Total Number of Hysterectomies  | 872 (100%)  |
| Abdominal Hysterectomy          | 89 (10.2%)  |
| Vaginal Hysterectomy            | 93 (10.7%)  |
| Laparoscopic Hysterectomy       | 253 (29%)   |
| Robotic Hysterectomy            | 437 (50.1%) |

| The Women's Institute – BUMCP |     |
|-------------------------------|-----|
| Hysterectomy                  | 280 |
| MIS                           | 274 |
| TAH                           | 6   |



# Minimally Invasive Gynecologic Surgery Fellowship



The Banner – University Medical Center Phoenix MIGS Fellowship Program is a comprehensive 2-year program designed to advance the fellow's surgical skills and confidence level in multiple areas of surgical gynecology. Our full academic integration with the University of Arizona College of Medicine allows for ample research, academic and didactic opportunities to enhance the fellow's learning and training experience.

Our comprehensive curriculum encompasses all facets of MIGS, including vaginal hysterectomy, hysteroscopic procedures, in-office endometrial ablation and tubal occlusion procedures, laparoscopy and robotics. Our diverse core faculty includes surgeons from several specialties allowing for exposure to a variety of different procedures and techniques to maximize the fellow's surgical repertoire. During the two-year program, the fellows rotate through the general gynecology service, general surgery, colorectal surgery, urology, female pelvic medicine reconstruction surgery and gynecology-oncology. At the end of their training program, fellows have the ability to function as independent gynecologic surgical consultants.

Fellows actively participate in teaching of OB/GYN residents and medical students. The fellows present a Grand Rounds topic related to MIGS twice a year and conduct daily morning GYN Rounds with the residents.

Our unique, state-of-the-art Banner Simulation Center offers our fellows a unique opportunity for surgical simulation training, allowing 24/7 access to hysteroscopic, laparoscopic and robotic skills set training. We are the only simulation program in the world that is accredited as an entire system. As such, each fellow is expected to present every year at the national level with the intention of submitting a manuscript for a peer review publication.

We also offer a Master of Science (MS) degree in CTS from the University of Arizona. The Clinical Translational Sciences (CTS) Graduate Program is designed to provide a strong foundation in clinical translational sciences for post baccalaureate and postgraduate candidates. The mission of the Master's Program is to provide an avenue for the fellow to gain more experience in and exposure to the diverse areas of the clinical translational science and to offer a mechanism to obtain in-depth knowledge in a specific area of biomedical research. To this end, fellows participate in a specific laboratory or clinical research project working with a CTS faculty mentor.

## **MIGS core faculty are:**

**Dr. Jamal Mourad, Director**

**Dr. Nichole Mahmert, Assistant Director**

**Dr. Kelly Roy, Assistant Director**

# Maternal Fetal Medicine Fellowship

The Maternal Fetal Medicine (MFM) fellowship at Banner – University Medical Center Phoenix is the first MFM subspecialty program for Banner, the city of Phoenix and the University of Arizona in Phoenix. The training program compliments and elevates the current residency training program at the hospital. This is a three year specialized training program for the care of complicated pregnancies, research methodology, education, and teaching. The mission of the fellowship is to provide clinical focus, stimulating research, develop master teachers, develop compassionate communicators, leadership in self and others, and to develop versatility and special interests for the fellow.



The fellowship takes one fellow per year and provides them with an 18-24 month of clinical experience plus 12-18 months of research. The core clinical rotations include Labor and Delivery, High-Risk antepartum, Adult ICU, Neonatal ICU, ultrasound imaging, outpatient MFM and genetics. Additional rotations for our program are Neonatal ICU and simulation, and electives available in pediatric cardiology and family planning. The fellows will pursue additional clinical experience based on their interests, research, and career development. Each fellow is paired with a faculty research mentor who helps in developing hypothesis-based research questions, methodology to answer questions and to create projects to test that hypothesis.

During their training, fellows participate in team-based clinical care and perform advanced procedures. Ultrasound guided procedures include amniocentesis, chorionic villous sampling, percutaneous umbilical cord sampling, and intrauterine transfusions. Fellows are exposed to fetal interventional procedures such as bladder shunt and chest tube placement, radio frequency cord ablation, and exutero intrapartum therapy (EXIT) procedures. Additional time is spent within the Center of Excellence for Placenta Accreta taking care of abnormally invasive placentation with specialists from interventional radiology, trauma surgery, anesthesia, and gynecology-oncology. These specialized procedures enhance the fellow's ability to collaborate with multiple specialties and engage change in a large health care system.

There are several unique aspects of our MFM fellowship program. The fellow spends a one month elective creating and utilizing OB simulation with the Banner Simulation Center in Mesa AZ. The fellow participates in national conferences held here in Phoenix including the Society of Maternal Fetal Medicine's Obstetric Critical Care course in the fall. Lastly, fellows receive additional training, mentoring and coaching in leadership with Dr. Michael Foley and the Society of Maternal-Fetal Medicine's Leadership Academy.

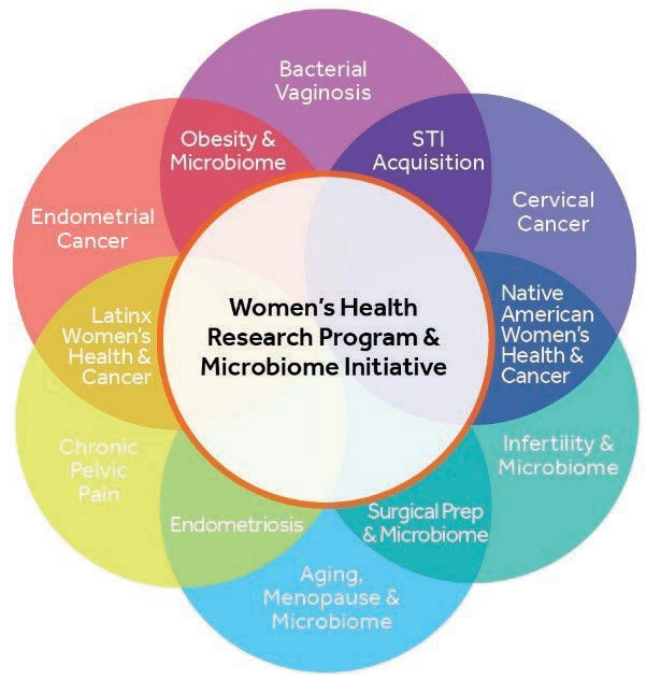
## Women and Infant Service Interdisciplinary Care Conferences

In our commitment to provide exceptional, leading care of high-risk pregnancies, Banner – University Medical Center Phoenix has established an Interdisciplinary Care Conference program. Patient care conferences are performed bimonthly, or more often if needed, discuss complex maternal cases that require advanced interdisciplinary services. Medical conditions include maternal heart conditions, pulmonary hypertension, cancer, neurosurgery, kidney/liver disease, and other medical or surgical complications. Team members include MFM & MFM Fellows, OBGYN & OBGYN Residents, OB Anesthesia, Intensive Care, Cardiology, Neonatology, cross departmental nursing leadership, bedside nursing, and other specialties as needed. Team members review the patient's history, diagnosis, and determine a plan of care for pregnancy and delivery. The care conference not only bridge care between specialties, but also the inpatient and outpatient settings. Care plans are then developed that assist team members with care coordination and communication, ultimately improving patient care and outcomes.

# Basic Science Research

Translational Science helps to achieve healthcare innovation, bridging the gap between patient and Biomedical Research. Melissa Herbst-Kralovetz, PhD has brought together OBGYN Faculty, multidisciplinary and specialty physicians, and students from across Arizona to study the microbiome and the associated local genital microenvironment and how it impacts women's gynecologic and obstetric health. The Women's Health Microbiome Initiative, launched in 2017, aims to bring physicians and scientists in vast areas of gynecologic health, birth outcomes, and gynecologic cancer adding a high translational value to clinical practice.

Despite hurdles set forth by the COVID-19 pandemic, the collection of clinical samples has continued with collaborative efforts by the OBGYN Department Residency Program candidates and the clinicians and surgeons at Banner – University Medical Center Phoenix. Dr. Herbst-Kralovetz and her lab team have deciphered valuable data to identify microbial communities and inflammatory profiles in the female reproductive tract from patients with gynecologic cancer. One project is focused on endometrial cancer and the Herbst-Kralovetz lab has extracted and processed samples for over 200 women who were enrolled at three sites, Banner – University Medical Center Phoenix, Valleywise Health, and Dignity Health. Through this collaboration, which included Arizona Oncology Physician Dana Chase, MD, the team has been able to facilitate multiple projects and scholarly activities. Rachel Mendoza (MS2), a part of the Herbst-Kralovetz Lab team, was selected for the College of Medicine – Phoenix Office of Equity, Diversity and Inclusion Diversity, Equity and Inclusive Excellence & Innovation Research Grant. Her project will focus on healthcare disparities of women with endometrial cancer, looking retrospectively at patients who were not captured in the initially enrolled cohort. Airam Mellisa Arce-Parra, a FRONTERA 2021 10-week summer intern, presented data on the research cohort at the Undergraduate Research Opportunities Consortium (UROC) poster session, focusing on stress scales of the endometrial cancer patient cohort. Recently, the newest added postdoctoral researcher to the Herbst-Kralovetz Lab, Dr. Nicole Jimenez, was awarded the highly competitive Sidney Hopkins, Mayola B. Vail, and Patricia Ann Hanson Postdoctoral Fellowship from the Community Foundation of Southern Arizona. Dr. Jimenez proposal will decipher the oncogenic contributions of specific vaginal bacterial species in order to understand



their role in gynecologic cancer utilizing multiomic approaches coupled with in vitro 3-D human cell models.

The Herbst-Kralovetz lab contributed multiple high impact publications to the field, that include a Collaborative Review Article on Microbiome, Endometriosis, Infertility and Chronic Pelvic Pain Published in Human Reproduction Update . This publication was led by Dr. Herbst-Kralovetz (COM-P) and included collaborators; Leslie Farland, ScD, MSc (UA Mel and Enid Zuckerman College of Public Health, Tucson) and Nichole Mahnert, MD (BUMC-P MIGS Surgeon) on the role of microbiome and estrobolome in patients with endometriosis, infertility and chronic pelvic pain. Through our partnership with the Native American Cancer Prevention (NACP), the University of Arizona Cancer Center (UACC), Northern Arizona University (NAU), Valleywise Health (formally Maricopa Integrated Health System – MIHS), and the Native Americans for Community Action Clinic – NACA, clinical and self-collections samples have been acquired from patients in underrepresented and understudied groups, both Native and Hispanic Women. The focus of Native American Women was highlighted in a review article on designing inclusive HPV Vaccines among Native Americans Published in Current Oncology. All efforts are focused to promote HPV vaccination awareness and cervical cancer screening.

The research findings from multiple studies have assisted the Herbst-Kralovetz team with new information to envision further ways to study the microbiome. "I wanted to share this exciting work with a broad audience and encourage others to pursue re-search on the microbiome and gynecologic cancer to ensure we have high quality and robust findings to support future interventions that aim to modulate the microbiome," Dr. Herbst-Kralovetz said. "This is a fascinating new area of research. We need more research on this topic and in women's health in general" Review of Women's Health Advancements: More Research and Funding Needed - March 16, 2020, Teresa Joseph, UA News.

Dr. Herbst-Kralovetz continues to engage with several collegiate and community groups, inspiring fellow female University of Arizona Faculty and community leaders to empower and recognize each other's success. In June of 2021, as a leader in Women in Medicine and Science (WIMS) and Women Inspiring Scientific Progress (WISP), she was highlighted in the UAHS Health Sciences Connect Newsletter, "Fixing the 'Leaky Pipeline' to Elevate Women to Leadership" promoting the advancement, leadership, and success for women in all roles within academic medicine and science. Dr. Herbst-Kralovetz has continued her efforts to enhance awareness in the state of Arizona promoting biomedical research at the University of Arizona and the BIO5 Institute, and inspiring local leaders in promoting women in medicine in science, gender equality, and NIH support for women's health research.



Melissa Herbst-Kralovetz, PhD

**We are grateful for these collaborative partnerships with clinics and institutions throughout Arizona.**

- Arizona Oncology
- Arizona Reproductive Medicine Specialists
- ASU School of Life Sciences
- Banner – University Medical Center Phoenix
- Dignity Health – Chandler Regional
- Native American Community Action Clinic
- NAU Pathogen/ Microbiome Institute
- UofA Bio5 Institute
- UofA Cancer Center
- UofA College of Agriculture and Life Sciences
- UofA College of Medicine – Phoenix Obstetrics & Gynecology
- UofA College of Medicine – Tucson
- UofA College of Medicine Tucson – Immunobiology
- UofA Mel and Enid Zuckerman College of Public Health
- Valleywise Health
- Wesley Community & Health Centers



## Research and Scholarship

Our Fellows and Residents have continued to excel with their research efforts, despite the impacts of the COVID-19 pandemic. With continued collaborations with the University of Arizona, College of Medicine – Phoenix, Dignity Health, and Valleywise, research has continued to excel within our department. With the shift to virtual platform presentations, our mentees have continued to disseminate ongoing research at local, national, and international conferences. The collaborative nature of our research has continued to build bridges to our local medical partners and physicians, as well as COM-P Faculty Scientists who include Robert Garfield, PhD, and Melissa Herbst-Kralovetz PhD. We have also been able to expand our Clinical Research Support Team, that includes Elisa Martinez, MBA, CCRC, Erika Flores, BS and Alice Treuth, BA. Our Clinical Research Coordinators assist in facilitating/supporting key aspects of research logistics for our staff and faculty. Novel projects with women in parturition continue under the leadership of Dr. Garfield, measuring electrical activity of the uterus.

We have continued to grow our innovative and highly interdisciplinary research initiative with the College of Medicine – Phoenix (COM-PHX) led by Melissa Herbst-Kralovetz, PhD. She is a phenomenal basic science scholar who has a joint appointment in the Departments of Basic Medical Sciences and Obstetrics and Gynecology. Dr. Herbst-Kralovetz directs the

**Elisa Martinez, MBA, CCRC**  
Clinical Research Coordinator III

**Erika Flores, BS**  
Clinical Research Coordinator II

**Alice Treuth, BA**  
Clinical Research Coordinator I

**Nichole Mahnert, MD**  
Director of Research  
602.521.5700

**Melissa Herbst-Kralovetz, PhD**  
Director, Women's Health Microbiome Initiative  
602.827.2247

For Collaboration Outreach:  
[COMPHX-WomensHealth@arizona.edu](mailto:COMPHX-WomensHealth@arizona.edu)

Women's Health Microbiome Initiative for the College of Medicine – Phoenix and in Obstetrics and Gynecology. In its 4th year, efforts have continued to examine the microbiome of the genital tract in health and disease as it relates to improving women's health outcomes. The Herbst-Kralovetz Lab welcomed Nicole Jimenez, PhD, a postdoctoral researcher from Virginia Commonwealth University, who brings a history of research in comparative genomics of vaginal bacteria especially Bifidobacterium species, understanding correlations between the vaginal microbiome reproductive health and disease, as well as maternal-infant microbial transmission. Dr. Herbst-Kralovetz continues to grow integral partnerships and new collaborations with fellow OB/GYN faculty, clinics and institutions throughout Arizona.

Scholarship is one of the major components of the Women's Institute. Under the leadership of Dr. Michael Foley, focused steps have been taken to demonstrate the importance of scholarly activity. There is a broad definition of scholarship which includes but is not



**Kendra Gray, DO**

### **UA/BUMCP Obstetrics and Gynecology Research Team Mission Statement:**

*We are committed to provide ongoing support to the Faculty, Fellows, and Residents in their Basic, Clinical and Translational Research endeavors. Our long-term goal is to facilitate the quality of Clinical Research and elevate scholarship production in the Department of Obstetrics and Gynecology.*

limited to research. Designing innovative educational programs, actively participating in educational organizations at a local, regional and national level, quality improvement projects and any contribution to the scientific literature are examples. The department held its 2nd Annual Fellowship Research Day on May 7th, 2021. Dr. Kendra Gray, 2020-MFM Fellowship Graduate and Banner – University Medical Center Phoenix Physician, received the First Place award, presenting the collaborative project Simultaneous Measurement of Electrical Activity of Uterine Abdominal, and Pelvic Floor Muscles During the Second and Third States of Labor (published in **AJOG-MFM**). This is an example of a collaborative effort to highlight the Fellows' research from the Obstetrics and Gynecology Minimally Invasive Surgery, Maternal Fetal Medicine and Pediatric/ Adolescent Gynecology fellowship programs from around the phoenix metroplex and Tucson.

The Obstetrics and Gynecology Department physicians and nurses at Banner – University Medical Center Phoenix are actively engaged in scholarship on a local, national, and international level. This includes authoring or editing books and book chapters, independent research or in collaboration with a resident, lecturing at a conference, developing educational materials, writing an article for a peer reviewed journal, etc.

Banner – University Medical Center Phoenix takes pride in the recognition of our scholarship and has established ways to fund residents' travel and provides an annual award given at our House Commencement in June.



Lelan McCann, MD, Gabriella Smith, MD, Addison Alley, MD, Melissa Herbst-Kralovetz, PhD, Taylor Norton, MD, & Nichole Mahmert, MD



# 2021 Graduating Chief Research Projects

*Impact of Pneumoperitoneum Pressure During Laparoscopic Hysterectomy: A Randomized Controlled Trial*

Emily Biller, MD

*Frequency of Uricemia Testing in the Diagnosis of Preeclampsia*

Greg Epstein, MD

*Parental Leave Among Obstetrician-Gynecologists*

Emily C. Fanning, MD

*Postpartum Visit Retention Using Telehealth during the COVID-19 Pandemic*

Ann Lee, MD

*Surgical Equipment and Medication Price Awareness Amongst Obstetrician Gynecologists*

Michelle Nguyen, MD

*Vaginal Breech Delivery Simulation to Improve Resident Comfort and Skill*

Kelsie Ovenell, DO

*Evaluating the Use of Second Line Antibiotics in Penicillin Allergic Patients Who Undergo Benign Hysterectomy Who Are Candidates for First Line Antibiotics*

Nura Sobhanian, MD

*Risk Factors for Postpartum Readmission in Patients Diagnosed with Hypertensive Disorders of Pregnancy: A Retrospective Cohort Study*

Nicole M. Spencer, MD

*Virtual Reality for the Treatment of Post-operative Pain After Laparoscopic Hysterectomy for Benign Indications*

Stephanie Y. Tufano, MD



## **OB/GYN Chief Graduating Class of 2021 (L to R)**

Doctors Emily Biller, Ann Lee, Nicole Spencer, Stephanie Tufano, Kelsie Ovenell, Emily Fanning, Brian MacArthur (Residency Program Director), Michelle Nguyen, Greg Epstein



# Banner – University Medical Center Phoenix 2022 Educational Conferences

## Critical Care in Obstetrics - An Innovative and Integrated Model for Learning the Essentials

Banner – University Medical Center Phoenix, the Society for Maternal Fetal Medicine, and the University of Arizona College of Medicine Phoenix are proud to offer the seventh annual hands-on and very popular symposium in Critical Care in Obstetrics.

**When:** November 10th – 12th, 2022

**Where:** Scottsdale Resort at McCormick Ranch, Scottsdale, AZ

**Host:** Michael R Foley, MD

Banner University Medical Center – Phoenix partners with the Society for Maternal-Fetal Medicine to offer this innovative and integrated program that will address essential learning in the discipline of Critical Care Obstetrics. Integrating pre-recorded digital didactic sessions (ensuring materials), virtual on-line simulations, case-based facilitated group learning, and bedside preceptor-directed simulation drills form the basis for this progressive and original program.

The educational materials (on-line video and PowerPoint presentations), case discussions and bedside skills/simulations by the symposium faculty will help participants face the challenging world of obstetrics and better equip them to handle emergency situations.

In 2022 we will continue to offer several additional opportunities to attendees on their scheduled afternoon off, as well as the following pre-conference labs that will take place on Wednesday, November 9th.

- Transthoracic Echocardiography in Pregnancy – Basic Examination and Clinical Application in Critically Ill Obstetric Patients
- Practicing for Patients Instructor Course: Learning to Run In-Situ Obstetric Emergency Simulations at Your Institution

To register, please call: **602.230.2273 (CARE)**  
or [www.bannerhealth.com/230CARE](http://www.bannerhealth.com/230CARE)

## Who should attend?

- MFM Physicians and Fellows
- Emergency Room Physicians
- Certified Nurse Midwives
- OB/Gyn Residents
- Practicing OB Physicians
- Nurse Practitioners
- OB Hospitalists
- Medical Students
- Obstetrical Nurses



Dr. Lisa Dado teaching airway management.



Virtual reality experience.

# Neonatal Intensive Care Unit

Banner – University Medical Center Phoenix originally opened in 1911 and was then called Arizona Deaconess Hospital. When a new hospital was built in 1923, it had room for 105 patients, five operating rooms and a special obstetrical delivery unit and Arizona’s first incubator. The hospital has always been a leader in obstetrics, and in the 1960s opened a neonatal intensive care unit and hired the state’s first neonatologist to care for premature babies. When the NICU opened in 1964, Arizona went from 40th in infant mortality to fifth within 10 years. The hospital already had been well-known for its promoting mother-baby bonding, a practice it had been following since the 1940s. Banner – University Medical Center Phoenix has delivered more high order multiples – triplets, quadruplets, and quintuplets – than any other facility in the world and in 2007 sextuplets were delivered here. The six babies and mom did fine.



NICU Nursing Team

Today the hospital’s Labor and Delivery and ultrasound departments use state-of-the-art equipment and software to ensure patients receive the most recent innovative technology. Services range from basic fetal testing to complex therapeutic procedures, including identifying if fetal surgery needs to be performed fetal surgery while the baby is still in the womb. Banner – University Medical Center Phoenix also provides comprehensive care to the families of developing babies diagnosed with a congenital defect.

BUMCP is certified as a Level III Perinatal/Neonatal Center by the Arizona Perinatal Trust, which allows the hospital to care for patients with Obstetrical/Neonatal medical conditions at different stages of pregnancy and early neonatal gestation. BUMCP NICU provides

comprehensive care to the some of the most premature and vulnerable newborns with emphasis on family centered care; in addition, it offers state of the art programs such as retinal camera exams for eye disease in premature infants; and whole body hypothermia therapy. It offers the very best in education and support.

BUMCP NICU has partnered with the Banner Addiction medicine clinic and offers an outpatient treatment program for neonatal opioid withdrawal syndrome. The Banner – University Medical Center Phoenix NICU is also an active center of nursing education, training tomorrow’s medical and nursing providers. Additionally, BUMCP is active in NICU research participating in and creating multiple trials both in Arizona and across the United States. The NICU has a robust Continuous Quality Improvement Program with a goal to provide evidence based care.



NICU Provider Team



NICU Research Team

# Nursing

Banner – University Medical Center Phoenix holds the recognition of being designated as a Magnet Facility, a prestigious status awarded to health care organizations in recognition of nursing excellence. Magnet status is the highest national credential for professional nursing practice and about 9% of US hospitals have achieved Magnet recognition. Banner – University Medical Center Phoenix has been awarded this distinction four times since June 2005 by the American Nurses Credentialing Center. Magnet certification is based on provision of a cultural foundation focused on nurses' involvement and decision-making to deliver quality and safe nursing care to achieve positive patient outcomes. We promote nurses' professional growth, enlist enthusiasm for evidence-based care and process improvement, and enhance collegial relationships between all team members. Approximately 9% of all hospitals nationwide have attained Magnet status.

Banner – University Medical Center Phoenix is certified by the Arizona Perinatal Trust (APT) as a Level 3 Perinatal facility, which recognizes our ability to provide care for pregnancies of all gestational ages. Whether low-risk or high-risk, we recognize that every birth is a unique experience and work to provide that special memory for patients and families through comprehensive specialty care, family education and support. In 2016, we were also awarded Specialized Service recognition for our high-risk Accreta program, which is currently the only such program in Arizona. Banner – University Medical Center Phoenix perinatal nurses and physicians had recognized the community need and worked together to create and implement a comprehensive interdisciplinary program that is providing excellent outcomes.

Our Women's Institute Inpatient service consists of OB Triage, Labor and Delivery, Antepartum, Postpartum/ Nursery, NICU, and GYN oncology units. Within this diversity of clinical subspecialties, there is concentrated emphasis on collaborative communication, continual learning, evidence-based practice & research. Being a recipient of the IBCLC Care Award, a global recognition for lactation support, is one example of this synergy.

Our interdisciplinary team includes RNs, patient care assistants, surgical techs, lactation consultants, educators, clinical nurse specialists, and unit leaders. Many of our nurses have achieved additional certification in their specialty, have advanced in the Clinical Ladder program, participated in numerous evidence-based



practices and research. In collaboration with physicians, our nurses also deliver needed specialty care to pregnant patients housed outside of the perinatal service through provision of a co-management care model.

Our Women's Institute Outpatient service is elevating the standard of care for women in Arizona and beyond with a delivery model that promotes collaboration through an interdisciplinary approach to care. Its services span everything from routine obstetrics and gynecology, to the more complex maternal-fetal medicine, breast health, diseases of the female reproductive system, menopause management, pelvic pain, sexual health, and more. Physicians, nurse practitioners, medical assistants, schedulers, office staff, and practice leaders comprise the healthcare team. Increased collaboration between the inpatient and outpatient services continues to occur in order to provide seamless care delivery to patients.

Our work environment is one that is built on collaboration, learning and mutual respect. Teamwork among nursing, resident physicians, attending physicians, outpatient and ancillary departments is the basis for our care delivery model.

For all our patients, we are dedicated to provide quality, individualized, holistic nursing care in a compassionate, family-centered environment.

# Obstetrics & Gynecology Faculty

These physicians make it possible for The Women's Institute to be able to say we are **making health care easier, so life can be better.**

Mariana Amaya, MD  
Martin Arellano, MD  
Ali Azadi, MD  
Randall Ball, MD  
Candice Wood, MD  
Heather Zechman, MD  
Belinda Beck, MD  
Alka Bennion, MD  
Snehalkumar Bhoola, MD  
Matthew Borst, MD  
Cesar Castro-Marin, MD  
Dana Chase, MD  
William Chavira, MD  
Megan Cheney, MD, MPH, FACOG  
Emily Cyr, MD  
Heather Dalton, MD  
Gregory Desanto, MD  
Pooja Doehrman, MD  
Lydia Ehlenberger, MD  
John Elliott, MD  
Laurie Erickson, MD  
Kari Evans, MD  
Michael Foley, MD  
Kisti Fuller, MD  
Caroline Geer, MD  
Denise Gentles-Ford, MD  
Jill Gibson, MD  
Kendra Gray, DO, MS, FACOG  
David Greenspan, MD  
Melissa Herbst-Kralovetz, PhD  
Jordan Arnett, MD  
Robert Garfield, MD  
Carol Hahn, MD  
Karen Franklin, MD  
Lexine Hebets, MD  
Michael Herve, MD  
J. Blake Higley, MD  
Kathleen Horowitz, MD  
W David Huff, MD  
C. Kevin Huls, MD  
Madison Hustedt, MD  
Paul Isaacson, MD  
Brock Jackson, MD  
Steven Laband, MD, MS

Michael Leovic, MD  
Monique Lin, MD  
Brian MacArthur, MD  
Nichole Mahnert, MD  
Shazia A Malik, MD, FACOG  
Maria Manriquex, MD, FACOG, FASAM  
Kate Maroney, MD  
Paul Marshburn, MD  
Staci Mayer, MD  
Laura Mercer, MD, MBA  
Drew Moffitt, MD  
Janet Moore, MD  
Jamal Mourad, DO  
Linda Nelson, MD, PhD  
Steven Nelson, MD, PhD  
Thomas Waliser, MD  
Amy Williamson, MD  
Noor Zwayne, MD  
Shane Lipskind, MD  
Rachael Smith, DO  
Chijioke Soribe, MD  
Chien Oh, MD  
David Orenstein, MD  
Avinash Patil, MD  
Jordan Perlow, MD  
Enriqueta Porras, MD  
Celeste Pottorff, DO  
Kathleen Powers, MD  
Elizabeth Reynoso, MD

Deanna Rolstead, MD  
Mary Romero, MD  
Kelly Roy, MD  
Kelley Saunders, MD, MPH, FACOG  
Kathleen Schwartz, MD  
Dennis Scribner, MD  
Michael Smith, MD  
Diane Spieker, MD  
Eleanor Stanley, MD  
Nicole Stegman, MD  
Daniel Stone, MD  
Mani Tehranchi, MD  
Neil Trachtenberg, MD  
Michael Urig, MD  
Felipe Videla, MD  
Debra Wickman, MD, FACOG, NCMP, CSC  
Danielle Williams, MD  
Marneece Williams, MD  
Lyndsa Wilmott, MD  
Shana Wingo, MD  
Candice Wood, MD  
Heather Zechman, MD  
Taylor Jenkins, MD  
Lauren Engler, MD  
Natasha Makarova, MD  
Ryan Stratford, MD  
Kelly Kantartzis, MD  
Lynn Strickland, MD



# Faculty Scholarship Activity

## The Women's Institute

### Books/ Chapters/Papers/ Publications

- Galhotra S, Mourad J. Intraoperative view of ovarian vein coils for embolization. *Am J Obstet Gynecol.* 2021 Jul;225(1):92-93. doi: 10.1016/j.ajog.2021.02.026. Epub 2021 Feb 22. PMID: 33631111.
- Smith RB, Mahnert ND, Foote J, Saunders KT, Mourad J, Huberty J. Mindfulness Effects in Obstetric and Gynecology Patients During the Coronavirus Disease 2019 (COVID- 19) Pandemic: A Randomized Controlled Trial. *Obstet Gynecol.* 2021 Jun 1;137 (6):1032-1040. doi: 10.1097/AOG.0000000000004316. PMID: 33957663; PMCID: PMC8132566.
- Smith RB, Mahnert ND, Hu C, Steck-Bayat K, Womack AS, Mourad J. Impact of Re- tained Cystoscopy Fluid after Laparoscopic Hysterectomy: A Randomized Controlled Trial. *J Minim Invasive Gynecol.* 2021 Feb;28(2):288-296. doi: 10.1016/ j.jmig.2020.05.024. Epub 2020 Jun 4. PMID: 32505857.
- Spencer N, Galhotra S, Mourad J. Ectopic Adrenal Cortex in the Adnexa. *J Minim Inva- sive Gynecol.* 2021 Jul;28(7):1271-1272. doi:10.1016/j. jmig.2020.11.010. Epub 2020 Nov 22. PMID: 33238210.
- Womack AS, Smith RB, Mourad J, Mahnert ND. Perioperative pain management in minimally invasive gynecologic surgery. *Curr Opin Obstet Gynecol.* 2020 Aug;32 (4):277-284. doi: 10.1097/ GCO.0000000000000639. PMID: 32453128. Smith RB, Brink J, Hu C, Gerkin R, Perlow JH, Mourad J. Robotic.
- Transabdominal Cerclage vs Laparotomy: A Comparison of Obstetric and Surgi- calOutcomes. *J Minim Invasive Gynecol.* 2020 Jul-Aug;27(5):1095-1102. doi: 10.1016/j. jmig.2019.08.014. Epub 2019 Aug 15. PMID: 31421250.
- Munro MG, Advincula AP, Banks EH, Auguste TC, Chahine EB, Grace Chen CC, Curlin HL, Jorgensen EM, Kim JH, King CR, Lucas J, Milad MP, Mourad J, Siedhoff MT, Solnik MJ, Destephano CC, Thayn K; Essentials in Minimally Invasive Gynecology (EMIG) Steering Committee. Essentials in Minimally Invasive Gynecology Manual Skills Con- struct Validation Trial. *Obstet Gynecol.* 2020 Jul;136(1):83-96. doi: 10.1097/ AOG.0000000000003936. PMID: 32541289; PMCID: PMC7316146.
- Steck-Bayat KP, Henderson S, Aguirre AG, Smith RB, Mahnert NM, Gerkin RD, Mourad J. Prospective randomized controlled trial comparing cephalad migration in robotic gynecologic surgery using egg-crate foam versus the Pink Pad<sup>®</sup>. *J Robot Surg.* 2020 Apr;14(2):343-347. doi:10.1007/ s11701-019-00990-7. Epub 2019 Jun 29. PMID: 31256328.



# Faculty Scholarship Activity

## Maternal Fetal Medicine Fellowship

**Doctors:** Kevin Huls M.D., Kisti Fuller M.D., Karen Franklin M.D., Michael Leovic M.D., Kendra Gray D.O.

### Books/ Chapters/Papers/ Publications

- Gomez D and Fuller K. An Extremely Preterm Delivery. *Neoreviews*. 2021. PMID 34210814
- Rodel RL, Gray KM, Quiner TE, Braescu AB, Gerkin R, Perlow JH. Cesarean wound closure in body mass index 40 or greater comparing suture to staples: a randomized clinical trial. *Am J Obstet Gynecol MFM* 2021 Jan;3(1):100271
- Gray KM, Murphy L, Chauhan M, McCann L, Gerkin R, Starikov RM, Garfield R. Simultaneous measurement of electrical activity of uterine, abdominal, and pelvic floor muscles during the second and third stages of labor. *Am J Obstet Gynecol MFM*. 2020 Nov;2(4):100171 PMID:33345944
- Gray KM, Murphy L, Buckner B. Osteopathic considerations for the pregnant patient with COVID-19. *J Am Osteopath Assoc*. 2020 Aug 7. PMID 32776139
- Mackeen AD, Durie D, Lin M, Huls CK, Qureshey E, Paglia MJ, Sun H, Sciscione A. Foley plus oxytocin compared with oxytocin for induction after membrane rupture. *Obstet Gynecol* Jan 2018; 131: 4-11.
- Huls CK and Detlefs C. Obstetric Trauma. *Semin Perinatology*. 2018 Feb;42(1):13-20. PMID: 29463389 DOI: 10.1053/j.semperi.2017.11.004
- Ludwig R and Huls CK. Placenta Accreta. *Obstetric Intensive Care Manual, Fifth Edition*. McGraw-Hill. May 2018
- Leovic MP, Robbins HN, Starikov RS, Foley MR. Multidisciplinary obstetric critical care delivery: The concept of the "virtual" intensive care unit. *Seminars in Perinatology* 2018 42(1):3-8
- Gray KM, Rodel RL, Gerkin R, Bodea-Braescu A, Huls CK. Trends in 24-hour urine protein in pregestational diabetics as predictors for the dev. *Clinical Obstetrics, Gynecology and Reproductive Medicine*. 2018;4(3):1-5. doi:10.15761/COGRM.1000222.
- Hermann C, Lee A, Gray K, Huls CK. Coccidioidomycosis in Pregnancy: A Retrospective Review [7J]. *Obstet Gynecol*. 2018;131.
- Garite TJ, Combs CA, Maurel K, Das A, Huls K, Porreco R, Reisner D, Lu G, Bush M, Morris B, Bleich A, the Obstetrix Collaborative Research Network. A multi Center prospective study of neonatal outcomes at less than 32 weeks associated with indications for maternal admission and delivery. *Am J Obstet Gynecol* 2017;217:72.e1-9.
- Fuller KP, DeGroff S, Borgida AF. Neonatal outcomes based on steroid time for infants delivered between 23 and 34 weeks gestational age. *Clinical and Experimental Obstetrics and Gynecology*. Clin Exp. Obstet. Gynecol. Vol 0, n. 2, 2017.
- Hannaford KE, Tuuli MG, Odibo L, Macones GA, Odibo AO. Gestational Weight Gain: Association with Adverse Pregnancy Outcomes. *Am J Perinatol*. 2017 Jan;34(2):147-154. doi: 10.1055/s-0036-1584583. Epub 2016 Jun 29. PMID: 27355980
- Gray, KM, Francois, KE, Olla, D, Foley, MR, Gerkin, R. Length of Stay in Balloon Catheters for Cervical Ripening in the Outpatient Setting in Moderate Risk Term Populations. *Obstetrics & Gynecology*: May 2017, doi: 10.1097/01.AOG.0000514767.71210.94

## Neonatal Intensive Care Unit (NICU)

### Books/ Chapters/Papers/ Publications

- Transcutaneous Bilirubin Monitoring in Preterm Infants of 23–34 weeks gestation. American Journal of Perinatology, 2021. Jennifer Weber, Nataly Vadaz, Christine Wade, Becky Micetic, Richard Gerkin, Suma Rao
- Defining normal healthy term newborn automated hematologic reference intervals at 24 hours of life. Archives of Pathology, 2020. Barbara Ianni, Holly McDaniel, Elena Savilo, Christine Wade, Becky Micetic, Scott Johnson and Richard Gerkin
- NEC-zero recommendations from scoping review of evidence to prevent and foster timely recognition of necrotizing entero- colitis. Maternal Health Neonatol Perinatol. 2017 Dec 18;3:23. Gephart SM, Hanson C, Wetzel CM, Fleiner M, Umberger E, Martin L, Rao Suma, Agrawal A, Marin T, Kirmani K, Quinn M, Quinn J, Dudding KM, Clay T, Sauberan J, Eskenazi Y, Porter C, Msowya AL, Wyles C, Avenado-Ruiz M, Vo S, Reber KM, Duchon J.
- Neonatal Nurse Practitioner Certification Intensive Review: 2019, Chapter 23: Musculoskeletal Review: Christina Olsen NNP
- Neonatal Nurse Practitioner Certification Intensive Review: 2019, Chapter 25: Eyes, Ears, Nose, Mouth and Throat Review: Christina Olsen NNP

- Pediatric Academic Societies Annual Meeting 2021: Abstract: Review of Newborns with confirmed or suspected chorioamnionitis and economic impact of utilizing a EOS calculator: Isabel Abbott, Becky Micetic, Christine Wade, Pooja Rangan, Suma Rao
- Pediatric Academic Societies Annual Meeting 2021: Abstract: Retrospective review of cases of neonatal sepsis in a community hospital: Mark Baker, L. Castro, Julianna Diddle, P. Johnson, B Bhattarai, Christine Wade, Becky Micetic, Kartik Mody

### A Snapshot of Continuous Quality Improvement Projects in the NICU:

- Apnea and Bradycardia Guideline
- Therapeutic Hypothermia Protocol
- Neonatal Abstinence Syndrome Protocol
- Neonatal Sepsis Guideline
- Micropremie baby Protocol
- NICU Hypotension management guideline
- Head Ultrasound Guideline
- Retinopathy of Prematurity Guideline
- Neonatal Seizures management protocol
- Hypoglycemia protocol

# Faculty Scholarship Activity

## Megan Cheney, ND, MPH, FACOG

**Specialty:** Obstetrics & Gynecology

### Public Relations Media Interviews

- Live interview. Human Papilloma Virus Vaccination. Good Morning Arizona, Channel 3 News. 6 June, 2016.
- Live interview. Human Papilloma Virus Vaccination. Good Morning Arizona, Channel 3 News. 6 June, 2016.
- Tapped interview. Home Birth vs. Hospital Birth. Channel 12 News. 2017
- Tapped interview. Marijuana Use in Pregnancy. Channel 10 News. 2017
- Expert interview. Labor and Birthing Positions. The Bump Magazine. 2017
- Expert interview. Fetal Kick Counts. The Bump Magazine. 2018
- Expert interview. Heart-shaped Uterus. The Bump Magazine. 2018.
- Panel interview. Meet the Expert Series – OBGYN, Banner University Medicine community outreach.

### Local/National/International Presentations:

- Basics of OBGYN Coding and EMR Documentation. Department of OBGYN at University of Arizona. Phoenix, AZ. August 2021.
- New ASCPP Cervical Cancer Screening Guidelines, Department of OBGYN at University of Arizona. Phoenix, AZ. June 2021.
- Pregnancy of Unknown Location. Department of

- OBGYNat University of Arizona. Phoenix, AZ. August 2019, June 2020.
- Fetal Aneuploidy Screening. Department of OBGYN at University of Arizona. Phoenix, AZ. April 2020.
- Antepartum Testing: Indications and Timing. Department of OBGYN at University of Arizona.
- Office Gynecology. Department of OBGYN at University of Arizona. Phoenix, AZ. April 2019.
- Opportunistic Salpingectomy. Minimally Invasive AZ. April 2015, March 2016, April 2017.
- Cervical Cancer Screening. Banner University Medical Center Department of Internal Medicine. Phoenix, AZ. February 2012, March 2015, March
- Cost-Effective Practices in OBGYN Care. Banner University Medical Center Department of Family Medicine. Phoenix, AZ. October 2013.

### Books/ Chapters/Papers/ Publications

- **Cheney, M.** (2016). Genetics and Cancer Screening. In M. Olsen (Ed.), Office Care of Women (pp. 39-47). New York, NY: Cambridge University Press.
- Beienburg, C., So, V., **Cheney, M.**, Gerkin, R. "A Retrospective Study of Orthopedic Surgeon Screening for Athletic Triad in Female Patients Presenting with Stress Fractures." ACOG District V, VIII, & IX Annual Meeting. Ritz-Carlton, Kapalua. 5 Oct. 2019. Poster Presentation.

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## Michael R Foley, MD

**Specialty:** Maternal & Fetal Medicine, Obstetrics & Gynecology

### Public Relations Media Interviews

- Arizona Historical Society: Oral History Interview. February 3, 2021

### Local/National/International Presentations:

- UA Pathway Scholars Grand Rounds: DIC in Pregnancy. November 30, 2021. In-Person.
- BUMCP OB/GYN Resident Retreat & Lecture. October 15-16, 2021. In-Person.

- SMFM Colorado Leadership Seminar. October 6-10, 2021. Denver, CO. In-Person.
- BUMCP MIGS Fellowship Didactics: Ancient Wisdom for Work-Life Fulfillment. September 24, 2021. Virtual.
- BUMCP MFM Fellowship Didactics: DIC in Pregnancy. August 18, 2021. Virtual.
- University of New Mexico – ECHO Grand Rounds: DIC in Pregnancy. June 21, 2021. Virtual.
- UA OB Emergencies SIM (PPH, Shoulder Dystocia, Maternal Code). June 6, 2021. In-Person.



## Michael R Foley, MD (cont.)

- SMFM First Year Fellow Retreat: Avoiding Burnout. March 21-22, 2021. Virtual.
- Gilbert Physician Retreat: Ancient Wisdom for Life Fulfillment. March 5, 2021. In-Person.
- BUMCP OBGYN Resident Noon Conference: Cardiac Disease in Pregnancy Made Easy. February 23, 2021. Virtual.
- OB/GYN Morbidity and Mortality Conference – Faculty Observer. February 10, 2021. In-Person.
- The LINK Grand Rounds - Bhutan: DIC in Pregnancy. February 5, 2021. Virtual.
- UA Pathway Scholars Grand Rounds: DIC in Pregnancy. February 1, 2021. In-Person.
- Putting the “M” in MFM. Moderator for course: SMFM Sepsis in Pregnancy. January 27, 2021.
- CREOG Lecture: Pulmonary Failure, OBGYN Resident Noon Conference, 1/8/2020 BUMCP, Phoenix, AZ
- OBGYN Lecture: OB Emergencies Simulation (PPH, Shoulder Dystocia, Maternal Code), 1/22/2020 UA -HSEB B416, B427, B428, Phoenix, AZ
- SMFM Conference, Critical Care Presentation, Feb. 3-9, 2020. Gaylord, Texan Resort Hotel & Convention Center.
- Pathway Scholars Lecture: Clotting Cascade, Feb. 10, 2020. University of Arizona. Phoenix, AZ.
- Lecture: Hypertensive Emergencies, Feb. 18, 2020. Midwestern University. Glendale, AZ.
- Course/Lecturer: SMFM High Impact Practice Management, Feb. 28-29, 2020. BUMCP, Phoenix, AZ.
- The Link, Bhutan Lecture: Hypertensive Emergencies. September 25, 2020. Virtual.
- Ancient Wisdom for Modern Surgery Lecture, December 19, 2020, BUMCP - Phoenix, AZ, Surgery Grand Rounds

### Books/ Chapters/Papers/ Publications

- “Critical Care in Obstetrics: A Strategy for Addressing Maternal Mortality”. Cesar Padilla 1, Metabel Markwei ScM 2, Sarah Rae Easter 3, Karin A Fox 4, Amir A Shamshirsaz 5, **Michael R Foley** 6. Published 12/22/2020. PubMed ID 33359175. Critical care in obstetrics: a strategy for addressing maternal mortality - Pub-Med (nih.gov).
- “Risk Assessment of the Cardiac Pregnant Patient”. Samuel C Siu 1, Kari L Evans, **Michael R Foley**. Published December 2020. PubMed ID 33141525. Risk Assessment of the Cardiac Pregnant Patient - PubMed (nih.gov).
- Publication: DIC Book Chapter – “Operative Techniques in Obstetrics Surgery”. Wolters Kluwer, Pilar Rainey, **Michael R Foley**. 2020.
- “Maternal Complications of Multifetal Pregnancy”

written by Sarah Rae Easter, MD, **Michael R Foley, MD** \*Included Chapter in Book Title: “Twins and Medical Complications - Management of Multiple Pregnancy” Published Fall 2020.

- “Disseminated Intravascular Coagulation in Pregnancy” written by Pilar Rainey, DO1, **Michael R Foley, MD2**. 1Maternal-Fetal Medicine Fellowship, Banner University Medical Center, Phoenix, Arizona USA. 2Department of Obstetrics and Gynecology, University of Arizona College of Medicine, Banner University Medical Center, Phoenix, Arizona USA. \*Included in Book Title: “Operative Techniques in Obstetric Surgery” Michael Belfort, MD. Published by Wolters Kluwer. 2021.
- “Risk Assessment of the Cardiac Pregnant Patient.” Samuel C. Siu, MD, SM, MBA, **Michael R. Foley, MD**, Kari L. Evans, MD. Clinical Obstetrics and Gynecology. Volume 63 No 4, Pages 815-827. December 2020. www.clinicalobgyn.com
- Diabetic Ketoacidosis in Pregnancy, **Michael R. Foley**; Ravindu P. Gunatilake; Obstetric Intensive Care Manual, 5th edition McGraw-Hill. 2020
- “Maternal Complications of Multifetal Pregnancy” written by Sarah Rae Easter, MD1, **Michael R Foley,2**. 1Division of Maternal-Fetal Medicine, Division of Critical Care Medicine, Brigham and Women’s Hospital, Boston, Massachusetts USA. 2Department of Obstetrics and Gynecology, University of Arizona College of Medicine, Banner University Medical Center, Phoenix, Arizona USA. \*Included in Book Title: “Management of Multiple Pregnancy” Published Fall 2020.
- Reuters Health, **Foley MR**. Virtual Reality May Help Relieve Pain During Childbirth. The New York Times Article. February 12, 2020.
- Chauhan, M. MD, Gray, K. DO, **Foley MR**, MD. Bleeding in Pregnancy. Chapter Submission. 2020

### Online Articles:

- Art in Medicine, University of Arizona College of Medicine. “Photography” <https://artinmedicine.wixsite.com/art-in-medicine/post/michael-foley-md> . July 2020
- “Critical Care in Obstetrics: A Strategy for Addressing Maternal Mortality” written by Cesar Padilla, MD; Metabel Markwei, SCM; Sara Rae Easter, MD; Karin A. Fox, MD; Amir A. Shamshirsaz, MD; Michael R. Foley, MD. American Journal of Obstetrics & Gynecology. 2021. Online Article: ISSN 0002-9378. <https://doi.org/10.1016/j.ajog.2020.12.1208>. (<https://www.sciencedirect.com/science/article/pii/S0002937820325928>). Ajog.org

# Faculty Scholarship Activity

## Kendra Gray, DO, MS, FACOG

**Specialty:** Maternal & Fetal Medicine, Obstetrics & Gynecology

### Local/National Leadership Positions:

- Arizona Maternal Mortality Review Committee Member
- Arizona Maternal Mortality Review Committee Co-Chair
- Arizona Osteopathic Medical Association Board of Trustees Member
- ACOG Simulations Working Group
- Society of Maternal Fetal Medicine State Liaison Arizona
- Arizona Health Care Cost Containment System Pharmacy & Therapeutics Committee

### Local/National/International Presentations:

- Endocrine Emergencies: Diabetic Ketoacidosis and Thyroid Storm in Pregnancy, The Society of Maternal Fetal Medicine (SMFM) Critical Care in Obstetrics Course, November 11, 2021 (Oral Presentation)
- Clinical Management of Obstetrical Hemorrhage: How to Keep Your Cool When All You See is Red, St. John's Ob/Gyn CME Invited Guest Lecture, March 24, 2021, Virtual, Santa Monica California.
- Intraamniotic Infection and Inflammation, Pediatric Neonatology Clinical Consensus Group, Banner University Medical Center; February 22, 2021, (Oral Presentation)
- Pregnancy as a Predictor of Future Health. AOMA 98th Annual Convention; April 2, 2020. (Oral Presentation)
- Labor and Losses: A Look at Maternal Mortality in the State of Arizona, AOMA 98th Annual Convention; April 3, 2020. (Oral Presentation)
- Obesity in Pregnancy: More than a Number, Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) Spring Meeting; February 29, 2020, Phoenix AZ. (Oral Presentation)

### Books/ Chapters/Papers/ Publications

- Y Daher, ET Austin, BT Munter, L Murphy, **KM Gray**, The History of Medical Education: A Commentary on Race, *J Osteopath Med* 2021; 121(2): 163–170, February 2021.
- Rodell RL, **Gray KM**, Quiner TE, Braescu AB, Gerkin R, Perlow JH, Cesarean Wound Closure in BMI 40 or Greater Comparing Suture to Staples: A Randomized Clinical Trial, *American Journal of Obstetrics & Gynecology MFM* (2020), doi: <https://doi.org/10.1016/j.ajogmf.2020.100271>.
- Garfield, R.E., Murphy, L., **Gray, K.** et al. Review and Study of Uterine Bioelectrical Waveforms and Vector Analysis to Identify Electrical and Mechanosensitive Transduction Control Mechanisms During Labor in Pregnant Patients. *Reprod.Sci.* (2020). <https://doi.org/10.1007/s43032-020-00358-5>
- **Gray, KM**, Murphy, L. Simultaneous Measurement of Electrical Activity of Uterine, Abdominal and Pelvic Floor Muscles During the Second and Third Stages of Labor. *AJOG MFM, Research Letters*, 2020.
- **Gray, KM**, Murphy, L. Buckner, B. Osteopathic Considerations for the Pregnant Patient with COVID-19, *JAOA*, November 2020. Published ahead of Print online August 10, 2020.

### Additional Activity

- Reviewer Panel: Comprehensive Handbook Obstetrics & Gynecology, Thomas Zeng, 3rd Edition
- Honors and Awards
- American Osteopathic Foundation James M. Lally, DO, National Emerging Leader 2021
- APGO Excellence in Teaching Award, 2021
- Arizona Osteopathic Medical Association Emerging Leader Award, 2021

## Melissa Herbst-Kralovetz, PhD

Associate Professor, University of Arizona College of Medicine – Phoenix, Banner – University Medical Center Phoenix

### National Leadership Positions

- NIH NCI P20 Cancer Health Disparities Study Section; Member; 2020
- Department of Defense Congressionally Directed Medical Research Programs (CDMRP) Online Discovery Endometriosis Award (DIS-EM) of the Peer Reviewed Medical Research Program (PRMRP); Panel Member; 2020

### Local/National/International Presentations:

- Women Inspiring Scientific Progress (WISP), Phoenix, Arizona. Jan. 2020. Microbiome Research and Women's Health
- Townhall on Advancing STEM Equity at Minority Serving Institutions at the University of Arizona. Tucson, Arizona. Jan. 2020. Gender Equity in STEM
- Anaerobe 2020 Virtual Congress, Jul. 2020. Leveraging Human 3-D Models and Omics to Study Host-Vaginal Microbiota Interactions
- Womens Health Collaborative: Journal Club, Sep. 2020. The Vagina Chronicles: The Vagina Chronicles: Infection, Microbiome, Pregnancy.
- Banner – University Medical Center Phoenix, Obstetrics and Gynecology MFM Fellows Research Seminar, virtual. Sep. 2020. Applying “Omics” Research to Improve Women's Health
- USC Department of Translational Genomics - Virtual Distinguished Lecture Series, virtual. Nov. 2020. Predicting features of the cervical cancer microenvironment through integrated multi-omics analyses
- UACC Collaborative Grand Rounds, virtual. Nov. 2020. Predicting Features of The Cervical Cancer Micro-environment by Integrating
- Vincent Center for Reproductive Biology At Massachusetts General Hospital Virtual Seminar Series, virtual. Nov. 2020. Integrating Multi-Omics Analyses to Predict Features of the Cervical Cancer Microenvironment
- Uniformed Services University of Health Sciences, virtual. Mar. 2021. Employing Human 3-D Models and Multi-omics Approaches to Study Host- Vaginal Microbiota Interactions

- UA Department of Medicine GR, virtual. Apr. 2021. Translating Women's Health Using Multi-Omics Analyses
- EUROGIN 2021. Virtual – Germany. June. 2021. Interaction between HPV and Microbiota using Immune and Metabolic Profiling.

### Books/ Chapters/Papers/ Publications

- Łaniewski P, **Herbst-Kralovetz MM**. Bacterial vaginosis and health-associated bacteria modulate the immunometabolic landscape in 3D model of human cervix. *NPJ Biofilm Microbiomes*, 2021 (accepted, ahead of print)
- Salliss ME, Farland LV, Mahnert ND, **Herbst-Kralovetz MM**. The role of gut and genital microbiota and the estrobolome in endometriosis, infertility and chronic pelvic pain. *Hum Reprod Update*. 2021. dmab035
- Bordeaux SJ, Baca AW, Begay RL, Gachupin FC, Caporaso JG, **Herbst-Kralovetz MM**, Lee, NR. Designing inclusive HPV cancer vaccines and increasing uptake among Native Americans—a cultural perspective review. *Curr Oncol*. 2021. PMID: 34590604
- Salliss ME, Maarsingh JD, Garza C, Laniewski P, **Herbst-Kralovetz MM**. Veillonellaceae family members uniquely alter the cervicovaginal metabolic microenvironment in a human three-dimensional epithelial model. *NPJ Biofilms Microbiomes*. 2021. PMID: 34230496
- Laniewski P, Owen KA, Khnanisho M, Brotman RM, **Herbst-Kralovetz MM**. Clinical and personal lubricants impact growth of vaginal *Lactobacillus* species and colonization of vaginal epithelial cells: an in vitro study. *Sex Transm Dis*. 2021. PMID: 32842049
- Jackson R, Maarsingh JD, **Herbst-Kralovetz MM**, Van Doorslaer K. 3D oral and cervical tissue models for studying papillomavirus host-pathogen interactions. *Curr Protoc Microbiol*. 2020. PMID: 33232584
- Laniewski P, Cui H, Roe DJ, Chase DM, **Herbst-Kralovetz MM**. Vaginal microbiota, genital inflammation, and neoplasia impact immune checkpoint protein profiles in the cervicovaginal microenvironment. *NPJ Pre-cis Oncol*. 2020. PMID: 32802959

# Faculty Scholarship Activity

## Melissa Herbst-Kralovetz, PhD (cont.)

- Ilhan ZE, Laniewski P, Tonachio A, **Herbst-Kralovetz MM**. Members of Prevotella genus distinctively modulate innate immune and barrier functions in a human three-dimensional endometrial epithelial cell model. *J Infect Dis*. 2020. PMID: 32515473
- Laniewski P, Ilhan ZE, **Herbst-Kralovetz MM**. The microbiome and gynaecological cancer development, prevention and therapy. *Nat Rev Urol*. 2020. PMID: 32071434
- Muzny CA, Laniewski P, Schwebke JR, **Herbst-Kralovetz MM**. Host-vaginal microbiota interactions in the pathogenesis of bacterial vaginosis. *Curr Opin Infect Dis*. 2020. PMID: 31789672
- Gardner JK, Laniewski P, Knight A, Haddad LB, Swaims-Kohlmeier A, **Herbst-Kralovetz MM**. IL-36gamma is elevated in cervicovaginal epithelial cells in women with bacterial vaginosis and in vitro after infection with microbes associated with bacterial vaginosis. *J Infect Dis*. 2020. PMID: 31586390

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## Brian MacArthur, MD

**Specialty:** Obstetrics & Gynecology

### Local/National Leadership Positions:

- BUMCP OBGYN Chief of Service
- Phoenix Perinatal Associates Hospitalist Medical Director

### Local/National/International Presentations:

- **MacArthur BC**, Gray K, Mercer L, Burke A. Trauma: from Improvisation to Orchestration. 2019 CREOG & APGO Annual Meeting.
- Mercer L, **MacArthur B**, Morosky C. Message in a Bottle: How Checklists Can Help You Transform a Postpartum Visit from a Photo-op into the Basis for Interconception and Well Women Care. 2018 CREOG & APGO Annual Meeting.

- **MacArthur B**, Mercer L, Morosky C. Hacking Health Education: An Open-Source Makeover for the Health Care Curriculum. 2018 APGO Martin L. Stone, MD Faculty Development Seminar.

### Books/ Chapters/Papers/ Publications

- **MacArthur BC**, Foley MR, Gray K, Sisley A. Trauma in Pregnancy: a collaborative approach to mother and fetus. *American Journal of Obstetrics and Gynecology*. 220(5):465-468.e1, 2019 May.

## Nichole Duran Mahnert, MD

**Specialty:** Obstetrics & Gynecology

### Books/ Chapters/Papers/ Publications

#### Refereed Journal Articles

- Steck-Bayat KP, Henderson S, Aguirre AG, Smith RB, **Mahnert N**, Gerkin RD, Mourad J. Prospective randomized controlled trial comparing cephalad migration in robotic gynecologic surgery using egg-crate foam versus the Pink Pad. *Journal of Robotic Surgery*. 2020 Apr;14(2):343-347. PMID: 31256328.
- Womack SA, Smith RB, Mourad J, **Mahnert ND**. Perioperative pain management in minimally invasive gynecologic surgery. *Curr Opin Obstet Gynecol* 2020 Aug;32(4):277-284. PMID: 32453128.
- Smith RB, **Mahnert ND**, Hu C, Steck-Bayat K, Womack AS, Mourad J. Impact of retained cystoscopy fluid after laparoscopic hysterectomy: A randomized controlled trial. *Journal of Minimally Invasive Gynecology*. 2020 June;S1553-4650. PMID: 32505857.
- Smith RB, **Mahnert ND**, Foote J, Saunders KT, Mourad J, Huberty J. Mindfulness effects in obstetric and gynecology patients during coronavirus disease 2019 (COVID-19) pandemic: a randomized controlled trial. *Obstetrics and Gynecology*. 2021 June1;137(6):1032-140. PMID: 33957663.
- Salliss ME, Farland LV, **Mahnert ND**, Herbst-Kralovetz MM. The role of gut and genital microbiota and the estrobolome in endometriosis, infertility and chronic pelvic pain. *Hum Reprod Update*. 2021 Oct 27. PMID 34718567.

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## Shazia A. Malik, MD, FACOG

**Specialty:** Gynecology

### Local/National Leadership Positions:

- Faculty for a PIE program at UACOMPGME which is called "Personal Best: Coaching and Emotional Intelligence" that just started now.

### Local/National/International Presentations:

- Yearly lectures to Ob/Gyn residents at University of Arizona COM Phoenix (1-3/ year) Yearly lectures to Ob/Gyn residents at Creighton/ MIHS, St Joseph's Hospital, Phoenix, Arizona (1-3/ year) Yearly lectures to medical students of the University of Arizona PHX COM (3-5/ year) Faculty for the 1st year Anatomy Lab, University of Arizona PHX COM.

### Books/ Chapters/ Papers/ Publications:

- "Vaginal Energy Based Devices: A Clinical Consensus Statement from the American Urogynecologic Society (AUGS)", J Alshiek, B Garcia, V Minassian, C Iglesia, A Clark, E Sokol, E Sokol, M Murphy, **SA Malik**, A Tran, SA Shobeiri. *Journal of Female Pelvic Medicine & Reconstructive Surgery*. 2020 May;26(5):287-298.

### Trials:

- Primary Investigator in a multi-centered trial that will begin mid 2021: Comparison of single incision sling with transobturator sling for treatment of stress urinary incontinence by Caldera Medical.

# Faculty Scholarship Activity

## Maria Manriquez, MD, FACOG, FASAM

**Specialty:** Obstetrics & Gynecology

### Local/National/International Presentations:

- Addiction and Substance Use Disorder in Pregnancy and Universal Screening. PAPAN Taskforce for Southern Arizona. *Virtual Conference*. April 28, 2020.
- Substance Use Disorder in Pregnancy. 2020 High Risk Prenatal Program Annual Conference. August 7, 2020.
- Substance Use Disorder in Pregnancy. Maternal Mortality Summit . August 18, 2020.
- Are Maternity Care Homes Cost effective? An evaluation of a public health systems maternity care home and Ob Triage visits. Pacific Coast Obstetric and Gynecologic Society. September 12, 2020.
- Libre Initiative Round Table with Vice President of the United States Michael Pence. *Telemedicine in care of Vulnerable Populations*. September 18, 2020.
- FASD and Alcohol Use in Pregnancy. Oregon Health and Science University (OHSU) ObGyn Grand Rounds. November 6, 2020.
- 3rd Annual Reimagine Health Research Symposium, Moderator: Disease Management and Closing Lectures Sessions, University of Arizona College of Medicine Phoenix. January 21, 2021.

- Withdrawal Management for Pregnant and Parenting Women with Substance Use Disorder. Banner University Medical Center. ObGyn resident didactic session series. March 11, 2021
- Fundamental of Opioid Use Disorder Treatment in Pregnancy. Pick Your Poison 2021 Conference. Center for Toxicology and Pharmacology Education and Research, University of Arizona. August 20, 2021
- Management of Opioid Use Disorder in Pregnancy. Nursing Grand Rounds, Banner University Medical Center. September 15, 2021

### Books/ Chapters/ Papers/ Publications:

- **Manriquez, M.** Starer, J. Parisi, V. Tracy, E. McFadden, T. Penney, L. Fetal alcohol spectrum disorder prevention program: SBIRT's role in averting fetal alcohol spectrum disorders. *Birth Defects Res.* 2019 Jul 15;111(12):829-834. doi: 10.1002/bdr2.151  
Poster Abstract presented at CREOG APGO Annual meeting in Orlando, FL February 2020

## Laura Mercer, MD, MBS

**Specialty:** Obstetrics & Gynecology

### Local/National Leadership Positions:

- ACOG Clinical Practice Guidelines, Obstetrics Committee, Member
- ACOG National Medical Student Program, Co-Director
- ACOG District VIII Medical Student Recruitment Committee, Chair
- ACOG Arizona Section Chair
- ACOG Arizona Section Junior Fellow Advisor
- Arizona Medical Association Board of Directors, Member
- Arizona Long Acting Reversible Contraception (LARC) Coalition, Member
- Phoenix OB/GYN Society, President
- College of Medicine – Phoenix, Simulation Curriculum Subcommittee, Inaugural Chair
- College of Medicine – Phoenix, Clinical Curriculum Subcommittee, Co-Chair
- College of Medicine—Phoenix, Assessment Task Force, Member
- College of Medicine—Phoenix, Assessment and Evaluation Subcommittee, Member
- College of Medicine—Phoenix, Clinical and Competency Based Education Task Force, Member

### Local/National/International Presentations:

- Sutton J, **Mercer L**, Hampton BS. "Aligning Your Purpose with Your Passion: a Primer for Setting Goals for Your Bright Future" APGO Faculty Development Seminar, Virtual, January 2021.
- Sutton J, **Mercer L**, Craig, L. "Finding the Sunshine: Fostering a Positive Culture" CREOG/APGO Annual Meeting, Orlando, Florida, February 2020.
- **Mercer L**, Erickson L, Saunders K, Norton T, Alley A. "The Scariest Coaster of their Career: A Comprehensive Strategy to Support Graduates during Oral Boards Prep" CREOG/APGO Annual Meeting, Orlando, Florida, February 2020.
- **Mercer L**, Burke A. "Get Laser Focused: Essentialism for the Medical Educator" APGO Faculty Development Seminar, Bonita Springs, Florida, January 2020.

### National Honors and Awards:

- 2020 Association of Professors in Gynecology and Obstetrics William N. P. Herbert MD Promising Educator Award

# Faculty Scholarship Activity

## Jordan H. Perlow, MD

**Specialty:** Maternal & Fetal Medicine, Obstetrics & Gynecology

### Local/National Leadership Positions:

- Chairman: Appointment, Promotion and Tenure Committee. University of Arizona College of Medicine Phoenix. Department of Obstetrics and Gynecology.

### Local/National/International Presentations:

- Thromboprophylaxis in Pregnancy: State of the Art: 2021
- MFM Fellowship Lecture; February 2021
- Congenital Cardiac Disease in Pregnancy: Risk stratification tools. Banner – University Medical Center Phoenix Resident Lecture; January 2020

### Books/ Chapters/ Papers/ Publications:

- Kari Evans MD, Pensee Wu MD, Mamas Mamas MD, Paul Kang MS MPH, **Jordan Perlow MD**, Martha Gulati MD MS. Substance Use during Pregnancy and Obstetrical Outcomes in The United States: The National Inpatient Sample 2004 to 2014. To be Presented: Society for Maternal Fetal Medicine 42nd Annual Meeting, February 3, 2022. Orlando, FL.
- Kari Evans, MD, Pensee Wu MD, Mamas Mamas MD, **Jordan Perlow, MD**, Martha Gulati MD MS. Substance use among pregnant women in the United States from 2004-2014: a descriptive study. To be Presented; Society for Maternal Fetal Medicine 42nd. Annual Meeting, February 4, 2022. Orlando, FL.

- Rodel RL, Quiner T, Gray KM, Braescu AB, Gerkin R, **Perlow JH**. Suture vs. Staples for cesarean skin closure class III obesity: A randomized controlled trial. Am J Obstet Gynecol 222:1; s732-3. 2020.
- Rodel RL, Gray KM, Quiner TE, Braescu AB, Gerkin R, **Perlow JH**. Cesarean Wound Closure in body mass index 40 or greater comparing suture to staples: a randomized clinical trial. American J Obstet Gynecol MFM. 2021 Jan; 3 (1).
- Evans K, Wu P, Mamas M, Kang P, **Perlow JH**, Gulati M; Substance Use in Pregnancy and its Association with Cardiovascular Disease. J. Am Coll Cardiology; Submitted for Publication; 2021
- Cervical and Abdominal Cerclage Textbook: Tratado de Endoscopia Ginecologica. 4Th ed.
- In Press

### Reviewer of Scientific Paper Submissions:

- Abstract submissions: SMFM Annual Clinical Meeting
- American Journal of Obstetrics and Gynecology
- American Journal of Obstetrics and Gynecology: MFM
- Obstetrics and Gynecology



## Suma Rao, MD

**Specialty:** Pediatrics, Neonatal-Perinatal Medicine

### Local/National/International Presentations:

- Poster presentation at Pediatric Academic Societies 2021: Utility of EOS calculator in reducing antibiotics for chorioamnionitis
- Poster presentation at Pediatric Academic Societies 2020: Validity of Transcutaneous Bilirubin measurements in preterm infants 23 – 34 6/7 weeks gestation

### Books/ Chapters/Papers/ Publications

- American Journal of Perinatology, 6/2021: Transcutaneous bilirubin measurements in preterm infants 23-34 weeks gestation

- Featured in University of Arizona School of Medicine: Women in Medicine and Science: Sept 2020
- COVID-19 algorithms for management of babies in the NICU and newborn nursery; published in 2020 Banner Education Toolkit
- Maternal Health & Neonatal Perinatal medicine journal: NEC-zero recommendations to prevent and timely recognition of necrotizing enterocolitis.
- Department of pediatrics articles in BUMCP physician newsletters

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## Kelley T. Saunders, MD, FMPH, FACOG

**Specialty:** Obstetrics & Gynecology

### Local/National/International Presentations:

- Mercer, Laura MD; Norton, Taylor MD; Alley, Addison MD; **Saunders, Kelley T. MD**; Erickson, Laurie MD. The Scariest Coaster of Their Career? A Comprehensive Strategy to Support Graduates During Oral Boards Prep. CREOG and APGO Annual Meeting, Orlando, FL. Co-presenter
- February 27, 2020
- **Saunders, Kelley, T., MD, MS**; Slaughter, Geoffrey, T.; Mercer, Laura, MD; Gerkin, Richard, MD, MS. Antibiotic Prophylaxis in Surgical Sterilization: Following the Recommendations. Obstetrics & Gynecology: May 2018 - Volume 131 - Issue - p 82S–83S doi: 10.1097/01.AOG.0000533379.96988.6a.
- Betancourt, Arlene MD; Brown, Melanie MD; Haddow, Susan MD; Kipp, Alex, MD; Mehta, Ashwin MD; Price, Shandis, MD; **Saunders, Kelley MD**. Panelists. Panel discussion. Wellness Committee Panel. 13th Annual IMR Faculty Development Meeting, March 12, 2021.

- Block, Amber; Ratliff, Latisa; Saunders, Kelley MD. Panelists. Panel discussion. The Impact of COVID on Birth. 4th Trimester Ecosystem Arizona Lunchtime Conversations Series. June 4, 2021.

### Books/ Chapters/ Papers/ Publications:

- Smith, Rachael B. DO; Mahnert, Nichole D. MD; Foote, Janet PhD; **Saunders, Kelley T. MD, MPH**; Mourad, Jamal DO; Huberty, Jennifer PhD Mindfulness Effects in Obstetric and Gynecology Patients During the Corona-virus Disease 2019 (COVID-19) Pandemic, Obstetrics & Gynecology: May 06, 2021 - Volume Latest Articles -Issue - 10.1097/AOG.0000000000004316 doi: 10.1097/AOG.0000000000004316

# Faculty Scholarship Activity

**Debra Wickman, MD , FACOG, NCMP, CSC**

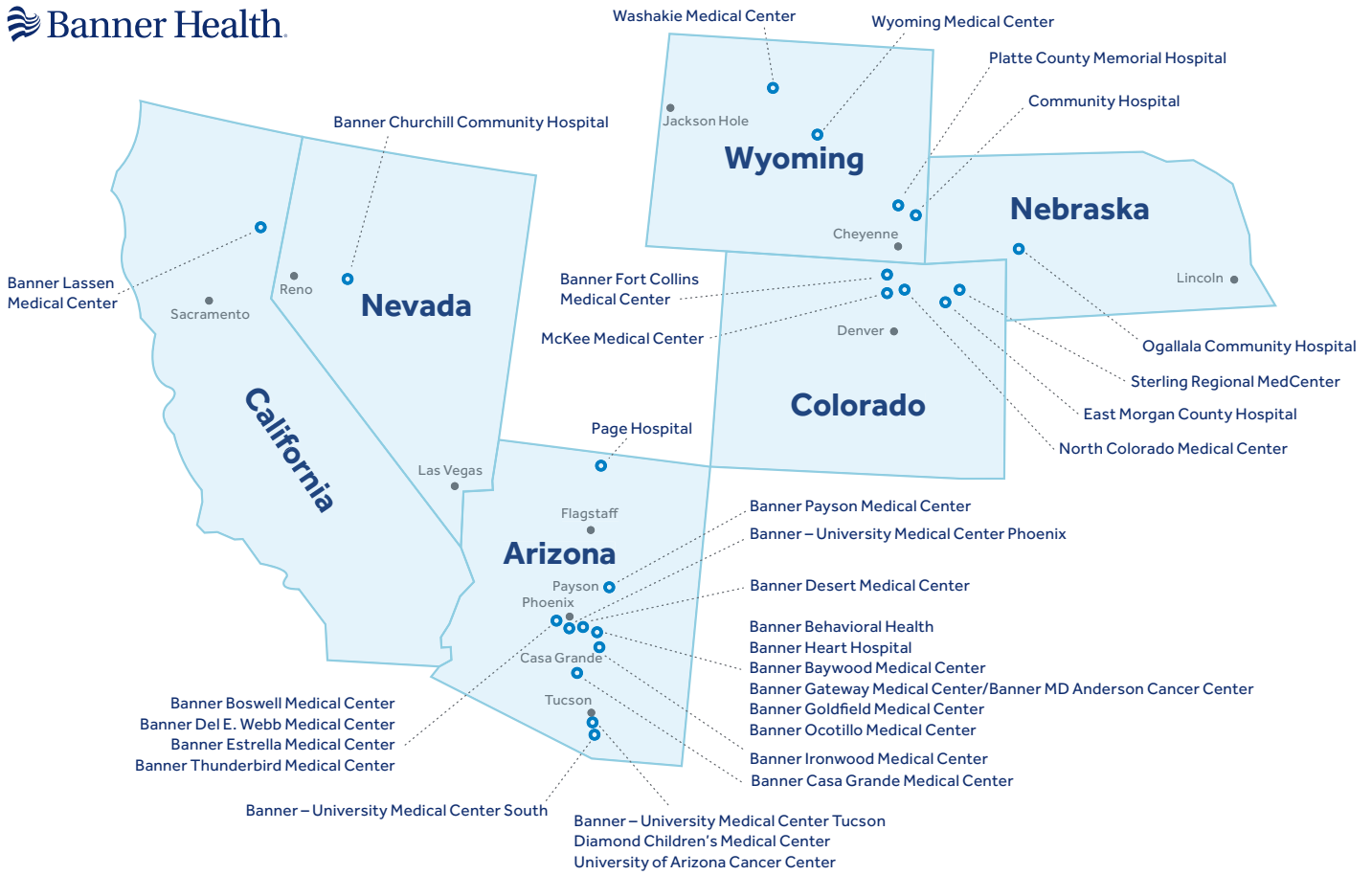
**Specialty:** Obstetrics & Gynecology

## Local/National/International Presentations:

- Expanding Sexuality After Menopause. Online Zoom Webinar, "Shine on Seniors", National Broadcast, December 16, 2020.
- Intimacy and Sexuality During the Cancer Journey. Online Zoom Webinar, Cancer Support Community Arizona. November 19, 2020.
- 5 Mysteries of the Female Body – Keys to Unlocking Buried Pleasure. Online Zoom Webinar: for Women's Institute patients, July 2020.
- 3rd Annual International Conference on Obstetrics and Gynecology, "Women's Bodies and the Power of Pleasure in Medical Care" Paris, France February 2019.
- 4th Trimester Annual Conference, "Sex and Intimacy After the Baby - Exploring the New Normal" Mesa AZ March 2019.
- WISP Luncheon, "Women's Sexuality: the Mind Body Connection" Phoenix, AZ May 2019.
- AASECT Annual Meeting, "Women's Bodies and the Power of Pleasure" Philadelphia PA June 2019.
- Health Futures Radio Segment, "Sex as a Priority for Optimal Health" Scottsdale, AZ April 2020, and September 2021.
- Society for the Study of Vulvovaginal Disease (ISSVD) "Intravaginal DHEA Relieves Localized, Provoked Vestibulodynia Unresolved with Prior Intravaginal Estradiol Therapy" Torino, Italy September 2019.
- Pacific Coast Obstetrical and Gynecological Society, "Perioperative Mindfulness Intervention in Newly Diagnosed Breast Cancer Patients" - formal discussant San Diego, CA October 2019.
- World Association of Sexual Health (WAS), "An Integrative Pelvic Exam Protocol - IPEP Improves Sexual Pleasure for Women with Decreased Genital Arousal" Mexico City, Mexico October 2019.
- ActivIntimates Seminar, "Sexual Benefits of Improving the Pelvic Floor Muscles" Phoenix, AZ November 2019.
- Arise Empowered - Breakthrough and Thrive Summit, "Treating Sexual Trauma through Mind-Body Connection" Phoenix, AZ November 2019.

## Books/ Chapters/ Papers/ Publications:

- Treatment of Sexual Dysfunction Arising from Chronic Pelvic Pain (Chapter 19). Management of Chronic Pelvic Pain: A Practical Manual. M Hibner MD, N Desai MD, M Castellanos MD, D Atashroo MD, E Banks MD, B Bendek MD, N Afuape MD, K Brandon DPT, C Butrick MD, J Carrillo MD, R Cockrum MD, M Dassel MD, K De Souza MD, K Fretz BSc, S Galholtra MD, A Gubbels MD, L Hill DPT, M Islam MD, G Lamvu MD, J Magrina MD, J Maurice MD, J Nickel MD, A Reinert MD, D Tripp PhD, **D Wickman MD**, Cambridge University Press. Nov 2021.



# THANK YOU HEALTHCARE HEROES

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