



Department of Obstetrics  
and Gynecology

2018 Annual Report

# Transforming Women's Healthcare

# For Today And Tomorrow



## Chairman's Message



**Dr. Richard Silver**

As we reflect on the past year, I am particularly proud of how our collaborative team has come together to put our new discoveries to work in real time. Every day, we incorporate the latest findings and best evidence-based practices into the excellent clinical care we offer our patients.

This commitment to continually enhance our patient care is at the heart of who we are as a Department and reflects NorthShore University HealthSystem's (NorthShore's) mission "to preserve and improve human life." Our physician-scientists compete at the highest levels and again this year have been awarded multiple National Institutes of Health (NIH) and other significant external grants in support of innovative research. Only the best ideas and most promising studies are supported at this level. We have expanded our research team, adding personnel to support these robust, growing programs. And all of our clinical staff support enrollment of patients in clinical trials and implementing new protocols into patient care settings. We look forward to continued discovery and the ability to share new knowledge and improve patient care at NorthShore and beyond.

Our clinicians have advanced new programs like Enhanced Recovery After Surgery (ERAS), improving outcomes and ensuring patient safety. With ERAS in place for gynecology, we have also implemented this vital protocol for cesarean section patients, providing essential benefits for new mothers with shorter hospitalization, better pain control and reduced use of narcotics.

We are most grateful for our philanthropic supporters. Donations from patients, families and members of our community at large are critical to our ability to pursue life-changing research and to sustain many aspects of our compassionate, personalized care.

I also extend my personal thanks to the dedicated members of this Department who work tirelessly on behalf of our patients. The initiatives and accomplishments highlighted in this Annual Report represent our shared success and, most importantly, our commitment to offering the highest level of patient care.

**Richard K. Silver, MD**

The Auxiliary of NorthShore Chair of Obstetrics and Gynecology  
 Department of Obstetrics and Gynecology  
 Clinical Professor and Chief Academic Officer  
 NorthShore University HealthSystem

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## DEPARTMENT HIGHLIGHTS

# Clinical Excellence

Department highlights reflect not only a commitment to excellence in patient care, but also a dedication to advancing knowledge through innovative research and an ability to leverage the latest findings to improve care in real time.

## Enhanced Recovery After Surgery (ERAS)

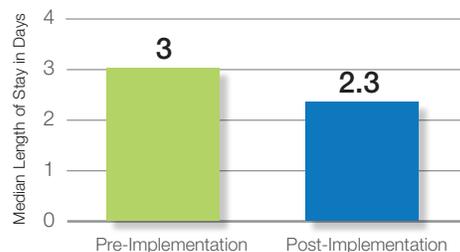
Enhanced Recovery After Surgery (ERAS) is an evidence-based, multimodal approach to perioperative care that has been shown to minimize pain, reduce complications and decrease narcotic usage. Building on the successful implementation of ERAS protocols for other surgical specialties at NorthShore, the Quality and Care Transformation Department has been instrumental in defining selected protocols in gynecology and obstetrics, supported in partnership with Elena Moore, MD (Gynecologic Oncology), Mark Neerhof, DO (Obstetrics), and Frank Tu, MD (Gynecology and Minimally Invasive Surgery). Implementation involved multidisciplinary teams that developed workflows, order sets and patient education materials. Our ERAS protocols challenge conventional wisdom for surgical patients—encouraging women to eat prior to surgery and to ambulate shortly afterwards. Key metrics for evaluating the effectiveness of the protocol include rates of

complications, need for readmission and, especially, opioid use comparing ERAS patients to historical cases in which the protocol was not yet available.

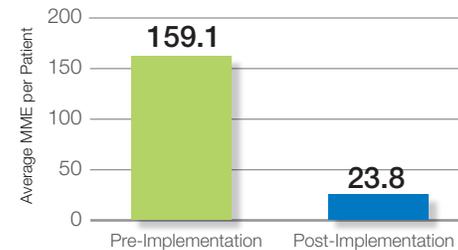
NorthShore implemented ERAS for abdominal hysterectomy in August 2018. Within months of implementation, more than 80 percent of eligible patients followed the protocol. Early results are very positive, with reductions in length of stay (25 percent) and opioid use (85 percent). Application of this protocol for laparoscopic hysterectomy is planned for 2019.

ERAS has only been used to a limited extent for cesarean section in the United States. In October, NorthShore introduced an ERAS pilot for elective cesarean section in five practice locations. Similar to the experience with abdominal hysterectomy, patients on the protocol demonstrated a reduction in length of stay (23 percent) and less opioid use for pain management (76.7 percent)—both during hospitalization and after discharge.

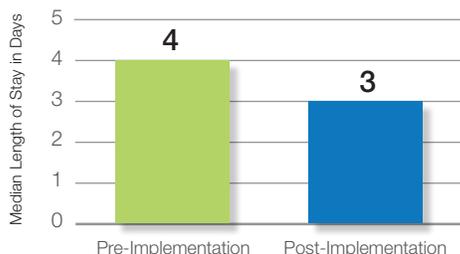
### Abdominal Hysterectomy Median Length of Stay



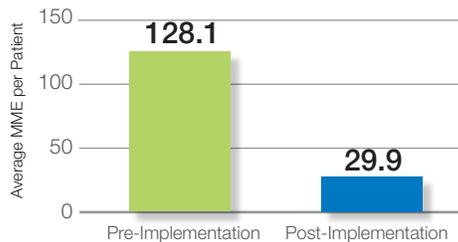
### Abdominal Hysterectomy Morphine Milligram Equivalent (MME) Utilization



### Cesarean Section Median Length of Stay



### Cesarean Section Morphine Milligram Equivalent (MME) Utilization



## Illinois Perinatal Quality Collaborative

The Illinois Perinatal Quality Collaborative (ILPQC) is a collaborative of physicians, nurses, hospital teams, public health practitioners and other stakeholders implementing data-driven, evidence-based practices to improve maternal and neonatal outcomes in Illinois. Ann Borders, MD, MSc, MPH, is a physician in the Maternal-Fetal Medicine Division and has served as the Executive Director and Obstetrics Lead for ILPQC since its inception. Since 2013, ILPQC has supported more than 119 Illinois hospitals in quality initiatives that have improved clinical outcomes across the state.

In May 2018, ILPQC launched the Mothers and Newborns Affected by Opioids (MNO) initiative to work with participating hospitals with obstetric and neonatal teams to implement a new standard of care for opioid use disorder (OUD) screening and treatment.

### Mothers and Newborns Affected by Opioids (MNO)

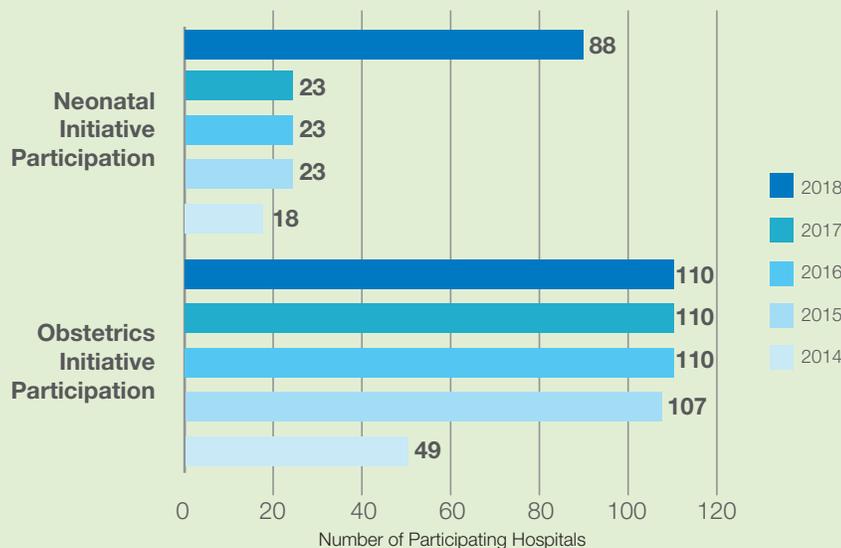
**This obstetric initiative aims to increase the number of women with opioid use disorder (OUD) receiving medication-assisted treatment (MAT) to  $\geq 70$  percent and increase women with OUD receiving behavioral health counseling/recovery services prenatally or by delivery.**

The rate of maternal opioid overdose deaths in Illinois has increased 175 percent from 2008 to 2017. There was also a 53 percent increase in the neonatal abstinence syndrome (NAS) rate between 2011 and 2015/2016. Drug overdose now kills more pregnant/postpartum women annually in Illinois than any other cause, including hemorrhage or hypertension.

The work of this initiative is coordinated between complementary obstetric and neonatal teams at participating hospitals. The obstetric hospital teams are implementing early universal screening for OUD using a validated screening tool, activating an OUD protocol for care of all women who screen positive for OUD, and executing an OUD Clinical Care Checklist to standardize care. Neonatal hospital teams aim to improve the care of opioid exposed newborns through decreasing the number of newborns who require pharmacologic treatment for NAS, increasing breastfeeding rates in eligible newborns, and increasing the number of newborns discharged with a coordinated safe discharge plan.

**The Mothers and Newborns Affected by Opioids (MNO) initiative has garnered extensive hospital participation as a neonatal initiative, with four times the number of hospitals participating in this compared to the prior year.**

### Statewide Hospital Participation



## Severe Maternal Hypertension

In addition to launching new initiatives, in 2018 ILPQC worked with hospitals to sustain the improvement achieved through the Maternal Hypertension Initiative (2016–2017). This initiative began in 2016 with an aim to reduce the rate of severe morbidities in women with severe preeclampsia, eclampsia or preeclampsia superimposed on preexisting hypertension by 20 percent by December 2017. A primary process to accomplish these reductions included increasing the proportion of women with sustained new onset severe range hypertension receiving medication within 60 minutes.

### Severe Maternal Hypertension Time to Treat



The initiative was successful in increasing the percentage of women treated within 60 minutes from 41 percent (baseline, 2015) to 85 percent (December 2017) and sustained improvement through 2018 (86 percent). During the same time period, Illinois hospitals experienced a **50 percent reduction in severe maternal morbidity**, from 10.3 percent (baseline, Q4 2015) to 5.1 percent (Q4 2017).

### Severe Maternal Morbidity



## RESEARCH LEADERSHIP

# Research Success by the Numbers

Our Department promotes high-quality research, and as a result we are on the leading edge of clinical innovations and translating research results into clinical practice.

The National Institutes of Health (NIH) funding process is extremely competitive, with only a small percentage of scored applications being awarded funding. In 2017–2018, seven new NIH studies were initiated within the Department. These new projects represent:

New NIH Funding in 2018  
(period budget):

Over \$2.1 Million

New Multiyear NIH Funding  
(project budget):

Over \$10.4 Million

Number of NIH-Funded  
Physician and Research  
Scientists:

6

**Pain Impact on Multisensory Hypersensitivity (EMPATHY)** is one of the exciting new NIH-funded initiatives. More than 50 percent of women in the United States suffer from painful periods. Unfortunately, painful periods put women at risk for chronic pelvic pain disorders, such as bladder pain syndrome. Frank Tu, MD, MPH, and Kevin Hellman, PhD, and their team are working to figure out why painful periods occur, their biochemical causes and if those causes also produce chronic pelvic pain. The lab is taking a longitudinal approach by studying painful periods in teen girls. EMPATHY was awarded \$3.3 million in funding from NIH over five years to complete this important work.



25% of women with chronic pelvic pain are bedridden 3 days a month.

**A Randomized Trial of Induction versus Expectant Management (ARRIVE)** is a prime example of the Department's focus on research that impacts how care is delivered.

This study compared first-time moms who are induced at 39 weeks to those who are managed until 41 weeks gestation to determine whether induction at 39 weeks reduces the risk of severe neonatal morbidity and perinatal mortality.

“Labor Induction versus Expectant Management in Low-Risk Nulliparous Women” was published on August 9, 2018, in *The New England Journal of Medicine*. NorthShore was one of 41 hospitals participating in the randomized control trial, and our Maternal-Fetal Medicine Unit (MFMU) research team enrolled 159 patients in the study.

Results of this study will impact standard of care for induction.

**The key findings of this important research trial are as follows:**

- There was no significant difference in the primary outcome (severe neonatal morbidity) between women in the induction of labor group and those in the expectant management group (4.3 percent versus 5.4 percent, respectively).
- Women in the induction of labor group had a significantly lower cesarean delivery rate as compared to women in the expectant management group (18.6 percent versus 22.2 percent, respectively, with a relative risk of 0.84 and a 95 percent confidence interval of 0.76–0.93).
- Women in the induction of labor group developed high blood pressure less frequently compared to women in the expectant management group (9.1 percent versus 14.1 percent, respectively, relative risk of 0.64 with a 95 percent confidence interval of 0.56–0.74).

## EDUCATIONAL ADVANCEMENTS

# Academic Accomplishments

Department faculty continue our commitment to excellence in medical education, advancing training for the next generation of physician leaders. Our partnership with the University of Chicago Pritzker School of Medicine remains critical to our academic success.

## Fellowship in Minimally Invasive Gynecologic Surgery

The Department added a Fellowship in Minimally Invasive Gynecologic Surgery (FMIGS) to its educational programs. Sangeeta Senapati, MD, MS, serves as the Program Director for this two-year fellowship offered in collaboration with the University of Chicago Pritzker School of Medicine. The overall goal of the NorthShore University HealthSystem/ University of Chicago Fellowship in Minimally Invasive Gynecologic Surgery is to train fellows who excel as clinicians and surgical teachers, possess a strong basic understanding of how to apply practical research results in gynecology, and have the tools to contribute academically to their unique area of interest. Our program places a strong emphasis on visceral pain disorders such as endometriosis-associated pelvic pain, as we see and treat patients in a comprehensive Center for Pelvic Health with practitioners from urogynecology, physical therapy, colorectal surgery and gastroenterology.



*Dr. Sangeeta Senapati (left) leads the Department's prestigious two-year Fellowship in Minimally Invasive Gynecologic Surgery.*

Additional faculty representation from across NorthShore and the University of Chicago include:

- **Shari Snow, MD\***, Associate Program Director
- **Laura Douglass, MD\***
- **Adam Gafni-Kane, MD\*\***
- **Mary Tilley Jenkins Vogel, MD\*\***
- **Frank Tu, MD, MPH\*\***

\* University of Chicago Pritzker School of Medicine faculty

\*\* NorthShore University HealthSystem faculty

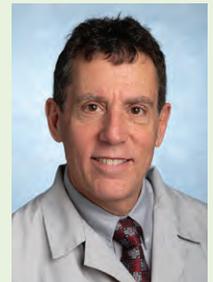
## Distinguished Honors

### 2018 NorthShore Medical Group Awards

**NorthShore Medical Group annually recognizes the contributions of its members through four awards—Outstanding Academician, Distinguished Service Award (Primary and Specialty Care) and Distinguished Contribution to Medicine. In 2018, members from the Department of Obstetrics and Gynecology earned three of the four awards!**

**Emmet Hirsch, MD**, won the Outstanding Academician award, which recognizes a member whose outstanding contributions to clinical research, medical science and teaching have elevated the legacy of NorthShore Medical Group.

Dr. Hirsch is the Vice Chairman for Faculty Development and Clinical Practice and a Clinical Professor at the University of Chicago Pritzker School of Medicine. He has presented more than 100 scholarly lectures related to his research on the mechanisms of preterm birth and potential therapies to avoid it, and he has authored more than 60 publications and been awarded more than 30 externally funded research grants, including four National Institutes of Health (NIH) grants.



**Dr. Emmet Hirsch**

**Carl Buccellato, MD**, won the Distinguished Service Award (Primary Care), which recognizes a member who embodies the principles of the Physician Service Values, and whose outstanding contributions elevate the legacy carried on through the NorthShore Medical Group.

Dr. Buccellato is the Lead Physician for the OB/GYN Medical Group North Pod, primarily serving Lake County, Illinois. He promotes NorthShore's complementary goals of patient-centered care and clinical excellence. Dr. Buccellato models a commitment to providing patients with comprehensive and compassionate care while promoting the dissemination of evidence-based practice within his own team and broadly through participation on hospital and community-based committees.



**Dr. Carl Buccellato**

**Scott MacGregor, DO**, won the Distinguished Service Award (Specialty).

Dr. MacGregor is the Director for the Division of Maternal-Fetal Medicine and Vice Chairman of Specialty Clinical Care for the Department. Since 2001, he has built the Centers for Maternal and Fetal Health, which span seven locations, offering consultative, diagnostic and therapeutic services. In addition, he leads the Evanston Perinatal Center (featured on page 14), which serves six additional hospitals on Chicago's North Shore.



**Dr. Scott MacGregor**

## 2018 DIVISION HIGHLIGHTS

# Improving Outcomes

Our collaborative team of physicians and other caregivers throughout the Department is dedicated to providing the best possible patient experience, working together to continually improve patient care, safety and outcomes.

### Division of Gynecology

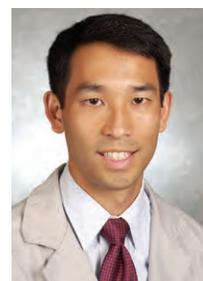
The Division of Gynecology promotes evidence-based procedural management of gynecological disorders throughout the continuum of outpatient and inpatient settings. Members are committed to lifelong and collaborative learning for the benefit of our patients. We enjoy a strong relationship with hospital-based quality in support of safety, cost-effectiveness and patient-centered care.

#### 2018 Highlights

Surgical volume for the Division is strong. In fiscal year 2018, we performed more than 3,400 surgical cases across our four pavilions. Implementation of the Enhanced Recovery After Surgery (ERAS) protocol for abdominal hysterectomy took place in August 2018.

The Division maintains a robust peer-review process of our ongoing care and hosts a multidisciplinary Gynecology Quality Committee, chaired by Jeremy Miller, MD. Cases for Committee review are selected from a list identified by specific criteria that may be related to surgical complications.

In 2018, the Committee reviewed 13 cases of which two were referred for additional review. The process continues to provide additional education for Department members with a goal of overall improved patient care and safety.



**Frank Tu, MD, MPH**  
Vice Chair of Quality,  
Division Director and  
Clinical Associate  
Professor

### Division of Obstetrics

The Division of Obstetrics is dedicated to preserving and improving the health of women and newborn infants. We are focused on providing the highest standard of care both during and after pregnancy. We provide unsurpassed educational opportunities for students, residents and fellows in an effort to ensure that clinical excellence will be perpetuated. We are also committed to increasing the body of knowledge in women's health through research.

#### 2018 Highlights

There are 79 obstetricians, seven family practitioners and 10 midwives providing obstetric care at NorthShore. In fiscal year 2018, 4,711 mothers delivered 4,823 babies at NorthShore Evanston and Highland Park Hospitals. Evanston Hospital also serves as a tertiary referral center for patients with pregnancy complications in the north and northwest suburbs of Chicago.

In October, we introduced ERAS for cesarean section at NorthShore. (See page 1 for more information on ERAS in Obstetrics and Gynecology.)

#### 2018 Clinical Outcomes

	NorthShore	Vizient Peer Group Average
Primary CS	15.1%	17.6%
Repeat CS	11.3%	14.6%
Total CS	26.3%	32.1%
Vaginal Trial of Labor after CS	43.7%	27.7%

NorthShore joined a new data-collection tool called Vizient this year. Vizient allows us to benchmark ourselves in comparison to the top hospitals in the country. We use this tool to evaluate our performance on various metrics to optimize the quality of care.

NorthShore ranks in the top quartile compared to hospitals of similar size and acuity with respect to our primary cesarean section (CS) rate and repeat cesarean section rate. We also rank in the top quartile with respect to the incidence of postpartum infections.

The Division of Obstetrics is committed to supporting the initiatives of the Illinois Perinatal Quality Collaborative. In 2018, we have become actively involved in two new initiatives. Mothers and Newborns Affected by Opioids (MNO) is an initiative intended to increase identification of

and optimize treatment of opioid abuse in pregnancy. The second initiative, Immediate Postpartum Long-Acting Reversible Contraception (IPLARC), is an effort to increase availability of long-acting contraceptives to patients who have recently delivered.

The quality of obstetric care provided at NorthShore is reflected by our patient satisfaction scores from Press Ganey, which placed us in the 91st percentile nationwide this last year.



**Mark Neerhof, DO**  
Division Director and  
Clinical Associate  
Professor



**Marion Jelcz, MD**  
Associate Director  
and Senior Clinician  
Educator

# Maternal-Fetal Medicine Team Provides Compassionate Expertise

The entire Maternal-Fetal Medicine (MFM) team cheered Caitlin Flando when her weight finally reached 100 pounds in her third trimester. It was one of the many small victories along the way of her incredibly challenging and somewhat miraculous pregnancy.

Plagued by severe Crohn's disease and irritable bowel syndrome (IBS) for years, Flando actually learned she was pregnant during a hospitalization caused by an intestinal abscess. Her weight had plummeted to 72 pounds, and Flando was not even able to keep water down.

Flando and her husband Tony were shocked and amazed as they had already been considering options like adoption to become parents. They met with MFM Director Scott MacGregor, DO, the next day and began an intense partnership with the MFM team as they worked together to sustain a healthy pregnancy.

First, she had to get healthy. Treatment included steroids, rounds of antibiotics and ultimately surgery at 13 weeks to remove the diseased section of her colon. "I knew if I wanted this baby, I had to get this abscess out. The doctors were great, and always very honest, talking us through the risks and helping me manage my stress and take care of myself," recalled Flando.

As a team, they decided that Flando needed total parenteral nutrition (TPN) given intravenously to help her gain strength and get ready for her small bowel resection.

"Caitlin is very smart and clinically savvy. She has a good understanding of her disease, and she was a very active participant in her care," said MFM specialist Shelly Tien, MD, MPH, who also credited Flando for her unflagging optimism. "She always had such a bright spirit throughout the entire pregnancy. As her care team, we could feel that and we were all working together."

Flando's multidisciplinary care included specialists from gastroenterology, endocrinology and the entire MFM group. Week after week, Flando continued to defy the odds. "We got to know everyone at the office, and they were



*Tony and Caitlin Flando with their son Anthony Roman Flando.*

like family. It was awesome to see them all cheering for me," she said.

At 40 weeks, Flando gave birth to Anthony Roman Flando. "He was perfect! That my body could handle so much more than we

ever thought was amazing. I am so blessed that I landed with that group," said Flando. "All of these teams worked together and were constantly on point with my care. It was beyond impressive."

Photo Credit: Kristy Renee Photography



### Division of Maternal-Fetal Medicine

The Division of Maternal-Fetal Medicine (MFM) is a group of specialists committed to clinical service, research and educational opportunities related to patients with high-risk pregnancies. The Division's commitment to quality and loyalty is evident in the Fetal Diagnostic Centers (FDCs) of the Centers for Maternal and Fetal Health (CMFH) at Evanston Hospital and in each of the six satellite sites throughout the north and northwest Chicago metropolitan area. The CMFH consolidates the services of the Division of Maternal-Fetal Medicine and the FDCs offering integrated and advanced technology and services.

#### 2018 Highlights

The Division of Maternal-Fetal Medicine (MFM) has continued our commitment to quality improvement in clinical services, research activities and educational opportunities in the past year. Our group's primary clinical site is Evanston Hospital; however, we also provide services at six other FDC sites in Glenbrook, Highland Park, St. Francis-Evanston, Arlington Heights, Libertyville and Gurnee.

The FDCs provide more than 30,000 services annually. The centers are American Institute of Ultrasound in Medicine (AIUM) certified. Our ultrasonographers maintain certification in first trimester genetic screening (both nuchal translucency and nasal bone), and the CMFH continues to be one of the leaders in genetic screening and testing for fetal aneuploidy.

*Resident Education:* NorthShore is the primary affiliate site for the University of Chicago Obstetrics and Gynecology Residency training program. Barrett Robinson, MD, MPH, is the Site Co-Director at Evanston for the residency program.

*MFM Fellow Education:* NorthShore is the primary site for the University of Chicago MFM Fellowship training program under the direction of David Ouyang, MD. Our four fellows—Lena Braginsky, Javier Rodriguez Kovacs, Caitlin MacGregor and Samantha de los Reyes—are actively involved in our clinical services and research activities.

*Simulation Education:* Ian Grable, MD, MPH, provides leadership of curriculum in Obstetrics for the Grainger Center for Simulation and Innovation with simulation training for physicians, fellows, residents and students. This year's simulations have included training for the residents (postpartum hemorrhage with Bakri balloon and B-Lynch suture, forceps delivery, fetal demise counseling, cervical cerclage placement) and MFM fellows (communication training, counseling in periviable gestations, chorionic villus sampling and percutaneous umbilical cord blood sampling).

Ann Borders, MD, MSc, MPH, serves on the March of Dimes Big 5 National Perinatal Quality Collaborative Executive Leadership Team and serves as the March of Dimes Big 5 Illinois Team Lead. The March of Dimes Big 5 develop national initiatives to improve perinatal outcomes.

Beth Plunkett, MD, MPH, is the Director of Research for the Department of Obstetrics and Gynecology. The Division currently has more than 20 active, IRB-approved clinical trials. These research efforts have resulted in numerous presentations at leading scientific research meetings and numerous publications in leading peer-reviewed journals.

We are one of only 14 clinical trial centers of the NICHD-sponsored MFM Unit Network under the direction of Dr. Plunkett (Site Principal Investigator). The MFM Unit participation allows our patients access to the most innovative and important clinical trials. Current studies include a randomized trial comparing treatments in patients with twin pregnancies and shortened cervix to reduce preterm delivery and a randomized trial comparing treatments in singleton pregnancies with shortened cervix to reduce preterm delivery.



**Scott MacGregor, DO**

*Division Director and  
Clinical Professor*

*Vice Chair for Specialty  
Care*



*MFM team members Dr. Shelly Tien (left) and Dr. Barrett Robinson, who is Co-Director of the Evanston Hospital site for the University of Chicago Pritzker School of Medicine Residency Program.*

### Division of Gynecological Pain and Minimally Invasive Surgery

The Division of Gynecological Pain and Minimally Invasive Surgery (GPMIS) brings the skills and experience of subspecialists in female pelvic pain disorders and laparoscopic surgery to the NorthShore clinical, academic and research community.

#### 2018 Highlights

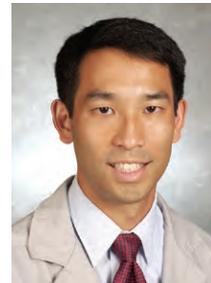
Frank Tu, MD, MPH, and co-investigator Kevin Hellman, PhD, were awarded a \$3.3 million grant from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) to initiate a novel study of the early trajectory of menstrual pain and sensory sensitivity. The study, nicknamed "EMPATHY," explores what factors underlie the emergence of menstrual pain and other factors predictive of the development of chronic visceral pain and generally, sensory sensitivity. Over a five-year period, they will follow the progression of 375 adolescents using sensory testing, diary evaluations and monitoring of brain activity. This unique study will allow the most comprehensive identification of factors responsible for the development of menstrual and chronic visceral pain in a young cohort to date.

Members of the Division received multiple awards:

- At the International Association for the Study of Pain, Dr. Hellman received an award for his poster with Dr. Tu on "Multisensory hypersensitivity among women with dysmenorrhea." Their poster demonstrated how multiple sensory mechanisms converge, which exacerbates the risk for chronic pelvic pain among women with dysmenorrhea.
- Folabomi Oladosu, PhD, received an award at the International Pelvic Pain Society (IPPS) on the relationship between autonomic dysfunction and central pain mechanisms in women with dysmenorrhea.
- Dr. Oladosu also received an award for best poster at a regional postdoctoral conference. Her poster elucidated pharmacological mechanisms underlying drug resistance in dysmenorrhea.
- A Stevenson High School student training in the Tu/Hellman lab, Arielle Shlobin, was awarded an oral presentation at IPPS. Her presentation was on factors underlying the risk for irritable bowel syndrome among women with dysmenorrhea.
- Dr. Oladosu, Hellman and Tu's *American Journal of Obstetrics and Gynecology* paper titled, "Nonsteroidal anti-inflammatory drug resistance in dysmenorrhea: epidemiology, causes and treatment" received a Faculty of 1000 recommendation.

The GPMIS Division remained active with medical societies:

- Sangeeta Senapati, MD, received approval for a surgical fellowship from AAGL. Richard Cockrum, a PGY-4 at University of Chicago, matched as the inaugural fellow.
- Dr. Senapati has also been selected as Treasurer for the AAGL Fellowship Board, a four-year term which will lead to her serving as President.
- Dr. Tu served as faculty for the IPPS Cadaveric Anatomy course.



**Frank Tu, MD, MPH**

*Division Director and  
Clinical Associate  
Professor*

# Innovative Surgery Delivers Relief and Motherhood

Holly Milojevic had a history of endometriosis and pelvic pain and had been treated with surgery years before she started struggling with more severe pain and infertility issues. She sought treatment for the pain, which was increasingly unbearable, while also undergoing fertility treatment, none of which was successful.

"Nobody gave me a real reason for the way I was feeling. I knew the pain was different than what I had before, and I felt like I was just written off," said Milojevic.

After doing plenty of her own research, Milojevic finally found NorthShore Director of Gynecology Frank Tu, MD, MPH, who diagnosed her with an unusual variant of uterine disease, an adenomyoma. Unlike fibroids, these inflammatory masses arise from the uterine lining itself and often are much more densely scarred into the uterine wall. Dr. Tu performed a procedure to remove the mass and carefully rebuilt her uterus with the hope that it would allow her to have a successful pregnancy.

"I could tell he really wanted to help. He understood and respected my goals. He was the first physician I felt comfortable even considering the surgery with," said Milojevic. Dr. Tu thoroughly explained the surgical procedure, and they discussed at length the challenges associated with preserving her uterine function.

"We were confident going into the procedure. We had a clear picture from her preoperative imaging and an excellent surgical team available. I knew she had done her homework and was realistic about the possible outcomes," said Dr. Tu.

The procedure was an immediate success in terms of relieving her pain. "I felt relief right after surgery," said Milojevic. "Before I had been so acutely aware every minute of every day that I had a uterus, and now the pain was gone."

The next victory came when Milojevic got pregnant, and the biggest success of all happened when she gave birth to her son Luka in May 2018. "He was a near-term preemie, but he's super healthy now. We are both healthy," said Milojevic, who was also very happy with the care she received from NorthShore's Maternal-Fetal Medicine team throughout her pregnancy.



*Holly Milojevic with her infant son Luka. Milojevic achieved her dream of becoming a mother following complex surgery with Dr. Frank Tu that resolved both her long battle with severe pain and infertility.*

"I am very grateful for Dr. Tu. His compassion and positive attitude really made a difference. He exhibits all the qualities a woman would want in a physician and all the qualities NorthShore would want in one of their doctors. It's amazing after all I went through, this was a dream come true," said Milojevic.

Dr. Tu's team is conducting groundbreaking research aimed at developing ways of characterizing adenomyosis with advanced imaging and studying its effect on uterine physiology, function and pain so that personalized treatment can be developed as it was for Milojevic.

# Advanced Surgical Protocol Speeds Recovery

As soon as Debra Koss saw the look on her gynecologist's face during a routine annual exam, she knew something was wrong.

An ultrasound the next day revealed enlarged ovaries, and Koss was referred to gynecologic oncology expert Gustavo Rodriguez, MD, who immediately made her feel that she was in good hands.

"He just had this wonderful combination of professionalism and compassion," said Koss. After examining Koss, Dr. Rodriguez had promising news, telling Koss and her husband Tom that she might not even have cancer, a diagnosis she had been dreading.

Dr. Rodriguez, the Matthews Family Chair of Gynecologic Oncology Research, said the ovarian masses felt hard on examination and more like fibroids than a typical cancer. Still,

Koss needed surgery to remove the growths and definitely rule out cancer.

Koss had a hysterectomy with Dr. Rodriguez at Evanston Hospital the day before Thanksgiving, 2018, and was relieved to learn there was no cancer. Her surgery went smoothly—and thanks to a new Enhanced Recovery After Surgery (ERAS) protocol, her recovery was quick and relatively painless.

"I have nothing but positive things to say about the whole process," said Koss, who went home before noon the day after her surgery. "As a testament to how well I felt, I remember waking up the next morning and checking to see what time breakfast started and ordering blueberry pancakes. It was wonderful!"

ERAS includes thorough patient education, better fluid management to avoid dehydration, and improved techniques for pain manage-

ment including a TAP (transversus abdominis plane) block, an injectable ultrasound guided anesthetic given before the operation begins. ERAS outcomes include more rapid recovery, lower rates of complications and a substantial reduction in use of postoperative opioids.

"Prior to our introduction of ERAS, patients like Debra would have been in the hospital for several days. Now, the morning after surgery they wake up and look almost like they never had surgery. This is so much better than the old way," said Dr. Rodriguez.

"This really reflects NorthShore's multidisciplinary approach to care as all members of our care team, especially nursing, were critical to the ERAS implementation and the amazing patient outcomes," added Dr. Rodriguez.

"I'm elated. I feel like I have a new lease on life," said Koss.

*Omar Nelson, PhD, joined NorthShore in June 2018 as a research scientist. Dr. Nelson completed his PhD in neuroscience at University of Texas Southwestern Medical Center at Dallas. He trained at the University of Miami Miller School of Medicine in the Sylvester Comprehensive Cancer Center where he focused on head/neck, breast and ovarian cancer. His emphasis is on oncological diseases of the female gynecological tract. Dr. Nelson has a lead role in facilitating experiments in Dr. Rodriguez's laboratory. He received a NorthShore Auxiliary Pilot Award to evaluate the "Effect of Progestins and Vitamin D on Inflammatory and Oxidative Chemopreventive Endpoints in the Fallopian Tube."*



*Dr. Omar Nelson (left) joined Dr. Gustavo Rodriguez's team in 2018, leading research related to prevention, early detection and treatment of ovarian, uterine and other women's cancers.*

### Division of Gynecologic Oncology

The Division of Gynecologic Oncology maintains a comprehensive clinical and research program aimed at prevention, early detection, improved treatment and survivorship for ovarian, uterine and other women's cancers. Led by Gustavo Rodriguez, MD, the Division brings together a collaborative team that employs a multidisciplinary approach to treating women with malignant or premalignant conditions of the gynecologic tract. The Division's mission is to provide comprehensive and compassionate care for our patients while performing basic and clinical research that will make a significant impact in our community and beyond.

Patients benefit from the collaborative care and the combined experience of gynecological oncologists, geneticists, radiologists, radiation oncologists, pathologists and critical support services, including psychosocial oncology, integrative medicine and nutrition. We leverage the latest technology and innovative techniques with robotic surgery and other minimally invasive procedures.

#### 2018 Highlights

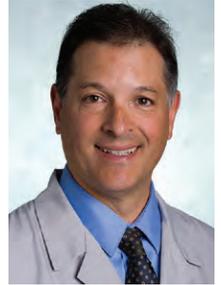
Our palliative care initiatives are being spearheaded by Elena Moore, MD, in collaboration with the NorthShore palliative care and hospice teams. This has included both clinical initiatives as well as research as we seek to mitigate the side effects/toxicity and symptoms associated with gynecologic cancer and its treatment. Dr. Moore is the principal investigator of a study evaluating the impact on quality of life and survival of early involvement of the palliative care team in the care of women with gynecologic cancers.

Mary Tilley Jenkins Vogel, MD, has fully integrated clinical services throughout the NorthShore system, but with a special focus on expanding access and care at NorthShore Glenbrook Hospital. She has initiated clinical studies with a focus on pharmacologic prevention of endometrial cancer and is overseeing quality improvement initiatives for the Division.

An array of important clinical trials ensures that our patients have access to the latest treatment options for women's cancers. These include industry-sponsored clinical trials, as well as projects with the National Cancer Institute-funded NRG, formed as an amalgamation of the NSABP, RTOG and GOG). Important clinical trials open this year have included trials evaluating the new classes of PARP inhibitors and immunotherapeutic agents for women with recurrent ovarian cancer.

A major clinical and research focus of the Division is the area of cancer prevention. Dr. Rodriguez and his team have made important discoveries that are opening the door toward the pharmacologic prevention of ovarian and uterine cancer. A five-year NIH R01 Grant was awarded to the program this past year to fund research aimed at developing an effective pharmacologic approach to prevent ovarian and fallopian tube cancer.

Building on the significant success of Dr. Rodriguez's research, the Clinical Gynecologic Cancer Prevention Program at NorthShore includes risk assessment and evaluation, followed by individualized pharmacologic and surgical strategies for cancer preventive care. This work is generously supported by Bears Care, the charitable beneficiary of the Chicago Bears, the Auxiliary of NorthShore University HealthSystem, Sandy and Ron Schutz, and other grateful patients. Many women in our community have an increased genetic-based risk for both breast and gynecologic cancer. This sets the stage for a personalized approach to cancer prevention and treatment.



**Gustavo Rodriguez, MD**

*Division Director and  
Clinical Professor*

*Matthews Family Chair  
of Gynecologic Oncology  
Research*

## 2018 DIVISION HIGHLIGHTS

### Division of Urogynecology and Reconstructive Surgery

The Division of Urogynecology and Reconstructive Surgery is dedicated to improving the care of women with a variety of pelvic floor abnormalities including bladder and bowel incontinence, pelvic organ prolapse, lower urinary tract pain and infection disorders, voiding dysfunction, and defecatory dysfunction.

The Division is actively involved in the education of University of Chicago Pritzker School of Medicine residents and medical students and also continues an Accreditation Council for Graduate Medical Education-approved three-year Female Pelvic Medicine and Reconstructive Surgery (FPMRS) fellowship.

The physicians and clinical staff are recognized nationally and internationally as a premier resource for clinical care, surgical expertise, research, informatics and quality outcomes tracking in urogynecology.

#### 2018 Highlights

The Division was delighted to welcome Sonia Dutta, MD, who joined NorthShore immediately after completing her three-year fellowship in Female Pelvic Medicine and Reconstructive Surgery (FPMRS) at University of California Irvine. Prior to her subspecialty fellowship, Dr. Dutta completed her undergraduate education at Columbia University, medical school at New York University School of Medicine, and residency at Johns Hopkins University. Dr. Dutta also completed a research fellowship at Mount Sinai School of Medicine.

In addition to practicing the full scope of our specialty, Dr. Dutta brings special expertise in laparoscopic reconstructive surgery for pelvic organ prolapse. She has practice locations in Skokie, Highland Park and Glenbrook. Dr. Dutta is an accomplished researcher and will be launching and overseeing several innovative projects heading into 2019.

Peter Sand, MD, as Director of Research for the Division, is principal investigator for several new and ongoing studies in the Division, including one examining an implantable radiofrequency stimulator “coin” for the treatment of overactive bladder and urge urinary incontinence. Patients are currently being enrolled for this “e-coin” procedure, which is performed in the office through a small incision near the ankle, taking approximately 20–30 minutes.

Dr. Goldberg and Sviatlana Lozo, MD, MPH, led a volunteer surgical mission to Honduras, hosted by One World Surgery on the site of Nuestros Pequeños Hermanos (NPH), a facility and foundation dedicated to raising disadvantaged and orphaned youth. The surgeons performed nearly 20 women’s health operations in addition to running outpatient clinics.

Dr. Goldberg co-chaired the 2018 Surgical Master Class for the American Urogynecology Society (AUGS) in Tampa, Florida. Additionally, he was an invited surgical instructor and lecturer to locations in 2018 that included Bogota, Colombia; Cali, Colombia; Barranquilla, Colombia; Cartagena, Colombia; and São Paulo, Brazil.



**Roger Goldberg, MD, MPH**  
*Division Director and Clinical Associate Professor*

### Division of Reproductive Endocrinology and Infertility

NorthShore has a number of physicians who specialize in reproductive endocrinology and infertility (REI). One of the most commonly encountered problems in obstetrics and gynecology is infertility, which affects approximately 15 percent of the population. Our subspecialists offer a vast array of both basic and high-tech services to meet the needs of patients with infertility.

#### 2018 Highlights

The Division has opened a subspecialty resident clinic in reproductive endocrinology and infertility which is staffed by members of the Division to enrich the education of Obstetrics and Gynecology residents and medical students, and to provide patients with access to reproductive medicine services.

John Rinehart, MD, PhD, JD; Allison Rodgers, MD; Shweta Nayak, MD; Jennifer Hirshfeld-Cytron, MD; and Sigal Klipstein, MD, serve as medical student and resident lecturers and mentor students in the office setting.

Dr. Hirshfeld-Cytron was instrumental in helping pass an Illinois law (IL Public Act 100-1102, House Bill 2617) to provide coverage for fertility preservation for patients with a diagnosis of cancer.

Dr. Hirshfeld-Cytron is the Vice President for the Kevin J. Lederer LIFE Foundation, which aims to promote health and alleviate the mental and physical distress of individuals and couples diagnosed with infertility through education and financial assistance.

Elizabeth Puscheck, MD, chaired the American Institute of Ultrasound Medicine committee to revise the national ultrasound guidelines for reproductive medicine.

Dr. Klipstein participated as a member of the American Board of Obstetrics and Gynecology Summit on Professionalism Task Force, which took place in Washington, D.C.

Dr. Rodgers serves as the “Ask Dr. Rodgers” medical expert on the Beat Infertility website and their podcasts supporting women facing infertility.

Dr. Rinehart was awarded a master’s in predictive analytics at Northwestern University. His master’s thesis was titled “Predicting the Number of Embryos to Transfer in IVF Using Ensemble Machine Learning.”



**Sigal Klipstein, MD**  
*Division Director and Clinician Educator*

## Restoring Quality of Life

Like many women plagued with the pain and embarrassment of bladder and bowel dysfunction, 61-year-old Jeanette Krause got to the point where things were almost unbearable before seeking help. Pelvic floor injuries are exceptionally common in women, especially those who have given birth to two or more children, yet they remain vastly under-diagnosed.

When Krause decided she could no longer suffer in silence, she started looking for help and found Roger Goldberg, MD, MPH, and his team at NorthShore's new bowel dysfunction clinic. Advanced technology and Dr. Goldberg's expertise came together providing Krause life-changing relief.

"So many women are suffering and thinking there's nothing that can be done, but we now have an incredible tool box with new ways of diagnosing and treating these debilitating conditions," said Dr. Goldberg. "For example, we have sophisticated 3D pelvic floor ultrasound that provides comprehensive images of the muscles that make up the pelvic floor."

"They took the time to explain everything to me, and they showed me exactly how the muscles were supposed to be working and where the problems were. It really took the anxiety away," said Krause, who spent just one night in the hospital and returned to work two weeks after surgery had repaired her pelvic floor.

Her surgery was so successful that Krause is not only back to her strenuous job as a full-time nurse, she was also able to resume her full slate of activities including weightlifting sessions at the gym, long bike rides and playing with her grandchildren.

"Our Center is developing minimally invasive approaches for big problems," said Dr. Goldberg. "The goal of this kind of surgery is to restore quality of life. We want women to know that times have changed and there are solutions for what's been the last frontier—bowel dysfunction."

The new Women's Health Questionnaire developed by Dr. Goldberg and his team helps to identify other women suffering from bladder and bowel dysfunction. By answering questions online and in the privacy of their own home, they can with the push of a button end up with a referral to the Center.

"Dr. Goldberg has skyrocketed my quality of life," said Krause. "These advances are amazing. It would be nice if somebody else learns about this and can get relief sooner than I did."



*Jeanette Krause underwent life-changing surgery to repair her pelvic floor, returning her to full activity, including aggressive workouts.*

## NorthShore Women's Bowel Clinic

The NorthShore Women's Health Questionnaire was developed in 2017 by Roger Goldberg, MD, MPH, and the Division of Urogynecology. In 2018, the questionnaire was broadly launched throughout NorthShore Medical Group. This NorthShoreConnect-based questionnaire is administered to all female patients receiving primary care in the NorthShore Medical Group and was designed to identify symptoms that can severely impact overall health and quality of life and efficiently direct patients to high-quality care. To date, the questionnaire has been distributed to over 60,000 patients via NorthShoreConnect. **Nearly one in five women have identified a concern that had previously gone undiscussed.** High among these were issues of fecal incontinence and other complex bowel symptoms.

The NorthShore Women's Bowel Clinic is devoted to women with obstructive bowel symptoms and bowel control problems. These issues are common in the adult female population affecting approximately 15

percent of women in the United States. Until recently, there were few effective solutions. The NorthShore Women's Bowel Clinic uses 3D pelvic floor ultrasound to identify rectal support defects that can be responsible for chronic bowel symptoms such as obstructed defecation syndrome (ODS). Identifying these defects is translating into new procedures and surgical remedies. This clinic was pioneered by Ghazaleh Rostami Nia, MD, senior FPMRS fellow who entered her training at NorthShore as a published expert in pelvic floor ultrasound imaging. Dr. Goldberg and Dr. Rostami Nia are leading a clinical trial of a novel minimally invasive method to repair the pelvic floor support defects responsible for obstructive bowel symptoms in the female population. This operation is performed without any external skin incisions in approximately 30 minutes, and its effectiveness is being assessed at this time. The Division's focus on this women's health problem is rapidly expanding in promising ways, both in the area of diagnosis and treatment.

The Women's Health Questionnaire is available at [northshore.org/agcq](http://northshore.org/agcq)

# 2018 SPECIAL PROGRAMS REPORT

## Supporting Moms and Families

Our model programs provide unique and compassionate support for mothers and families in the communities we serve and beyond.

### Evanston Perinatal Center

**Scott MacGregor, DO**  
Co-Director

**Bill MacKendrick, MD**  
Co-Director

**Myra Sabini, BSN, RNC-OB, C-EFM**  
Perinatal Center Coordinator

The Evanston Perinatal Center is one of the three Level III centers in the Northwestern Perinatal Network, which is one of 10 regional perinatal centers in Illinois and is supported by federal and state grants. This regionalized perinatal system was created to match the level of maternal and neonatal acuity with appropriate personnel and resources in all regions of Illinois.

Currently our perinatal program serves eight referral hospitals in Chicago and the north and west suburbs by promoting professional collaboration, consultation, education and communication to improve the health of pregnant women and their babies.

#### 2018 Highlights

The Evanston Perinatal Center:

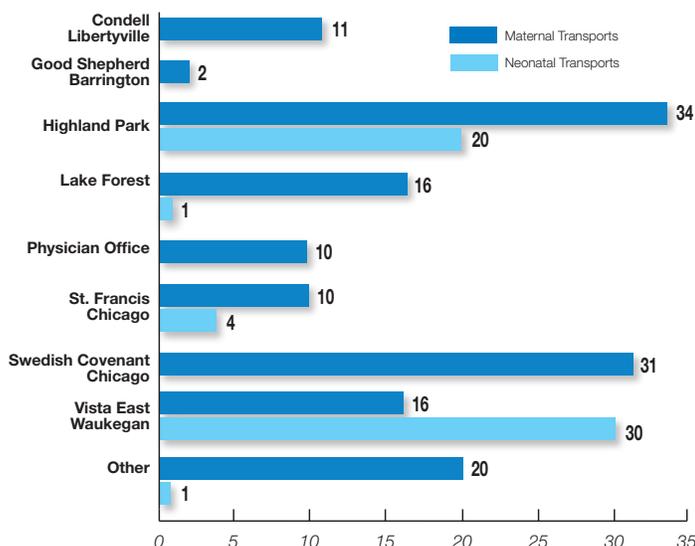
- Collaborates with referring hospitals for high-risk management and acceptance of maternal and neonatal transports. In 2018, Evanston Hospital accepted 150 maternal and 56 neonatal transports. The referring hospitals support more than 15,500 delivered women annually, which is the largest percentage of assigned delivery volume within the Illinois Perinatal Program.
- Acts as a liaison and resource to the hospital and to the community by supporting network activities to meet perinatal grant rules and guidelines thus adding value, expertise and quality to non-NorthShore practices across Northern Illinois.
- Provides 24-hour tertiary center obstetrical and neonatal consultation to increase early identification of maternal-fetal and neonatal problems and to expedite consultation/referral to our tertiary care center, as needed.

- Coordinates professional educational opportunities and courses for obstetric and neonatal physicians and nurses, which include courses in Fetal Monitoring, Neonatal Stabilization, Hemorrhage and Hypertension Management. The Grainger Center for Simulation and Innovation offers additional multidisciplinary and collaborative education.
- Supports the Illinois Perinatal Quality Collaborative (ILPQC) by assisting with conference planning, communication to referring hospitals and overall support from the Perinatal Center Coordinator. These initiatives are rolled out through the perinatal regionalized program.
- Monitors and collects data for the Illinois Department of Public Health (IDPH) for perinatal indicators of quality care, such as fetal, neonatal and maternal mortality rates; caesarian section rates; delivery volumes; low birth rates; and maternal and neonatal transport volumes.
- Is responsible for overseeing the network hospitals for state-required reports of metabolic newborn screens, newborn hearing screens, HIV and adverse outcomes via the Adverse Pregnancy Outcomes Reporting System.
- Provides essential support for IDPH triennial site visits. Each hospital's resources and services are reviewed by the Perinatal Center and IDPH to maintain the level of care designation as determined by the Perinatal 640 Rule.

MFM physicians, Neonatology and the Perinatal Center Coordinator regularly attend the hospital's quarterly case review meetings to provide a variety of educational opportunities. These meetings include education and discussion of evidenced-based research.

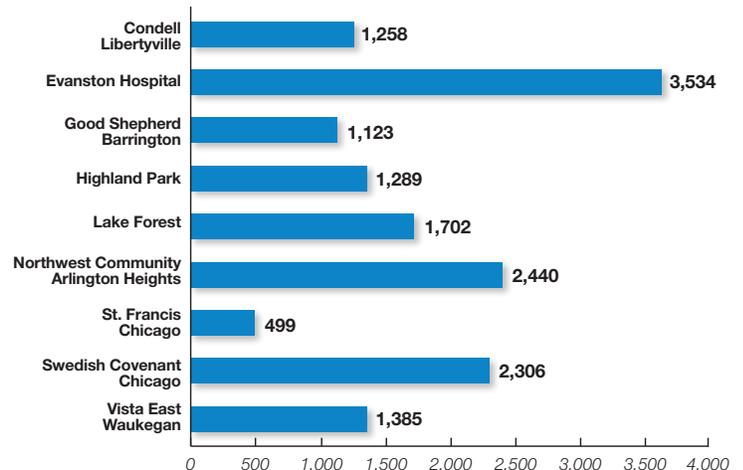
#### Maternal and Neonatal Transport to Evanston Hospital

Fiscal Year Oct. 1, 2017, to Sept. 30, 2018



#### Delivery Volume by Hospital Within the Perinatal Network

Fiscal Year Oct. 1, 2017, to Sept. 30, 2018





### Perinatal Depression Program

**Jo Kim, PhD**

*Program Director and Clinical Assistant Professor*

Women are at greatly increased risk for clinical depression and its potentially devastating outcomes during the perinatal period. The Perinatal Depression Program (PDP) provides proactive universal screening for depression in both the pre- and postnatal periods. The program also provides an immediate, live telephone response to at-risk women by a trained and licensed professional 24/7/365 for information, advice or referral to an appropriate mental health provider.

#### 2018 Highlights

9,381 depression and anxiety screens were administered.

582 depression screens triggered a clinical response for indications of women at risk, and 204 (35 percent) of those endorsed thoughts of self-harm.

994 calls to the MOMS Perinatal Depression Hotline.

22 callers referred for emergency services based on acuity.

Reproductive Psychiatrist Dylan Kathol, MD, joined the team, seeing patients through his Medical Group outpatient practice as well as through the No Mother Left Behind partnership with the North Shore Community Health Center.

Groundwork was laid for a clinical pilot of an innovative new means of depression screening using computerized adaptive testing administered via patients' smartphones.

#### Educational Achievements

Didactic lectures on perinatal mood disorders were presented to University of Chicago Pritzker School of Medicine medical students.

Opportunities for perinatal mood disorders research participation were made available to University of Chicago Pritzker School of Medicine residents.

Grand Rounds presentations covered current developments in the field and upcoming research initiatives.



*The Perinatal Depression Program commemorated 15 years in 2018. The onsite clinical team consists of (from left) Program Director, Dr. Jo Kim, Clinical Coordinator, Suzanne Caulfield, and Clinical Research Manager, Laura La Porte.*

*“Without this support, I would not have gotten through this. I am really grateful and can’t thank you enough for connecting me to the right people to get the help I need.”*

*— New mother with postpartum anxiety*

#### Research Achievements

Together with collaborators at the University of Oregon, program researchers received an SBIR Phase II award from the National Institute of Mental Health to test a smartphone-based app designed to treat perinatal depression.

In collaboration with University of Chicago researcher David Besier, MD, PDP, became a research site for an NIH-funded Institute of Translational Medicine study to test a computer application (“chatbot”) that conducts a text conversation that encourages mood self-regulation.

Research collaboration on the Genetic Explorations of Maternal Mood (GEMM) study continued with Pablo Gejman, MD, and Alan Sanders, MD (NorthShore; Psychiatric Genetics).

#### Community Benefit and Philanthropy

Program Director Jo Kim, PhD, served on external committees including:

- Illinois Maternal Mortality Special Review Committee for Violent Deaths (committee member)
- Postpartum Support International (Certification Exam Development Committee Subject Matter Expert)
- Beyond the Baby Blues (Clinical Advisor)

Program Coordinator Laura La Porte, LCSW, served on external committees including:

- Postpartum Support International—Illinois (Social Services Committee Lead)
- Beyond the Baby Blues (Perinatal Loss Group Strategic Planning Committee)

For the eighth year, the Illinois Department of Human Services (DHS) provided additional funding to NorthShore’s 24/7 Perinatal Depression Hotline (866-364-MOMS), which enables the hotline to provide immediate clinical support to women and families throughout Illinois.

The Satter Foundation continued its generous three-year funding grant to support mobile health initiatives for both detection and treatment of perinatal mood disorders.

## Perinatal Family Support Center

The Perinatal Family Support Center (PFSC) provides a wide array of clinical services for patients and their families receiving obstetrical and pediatric care at NorthShore.

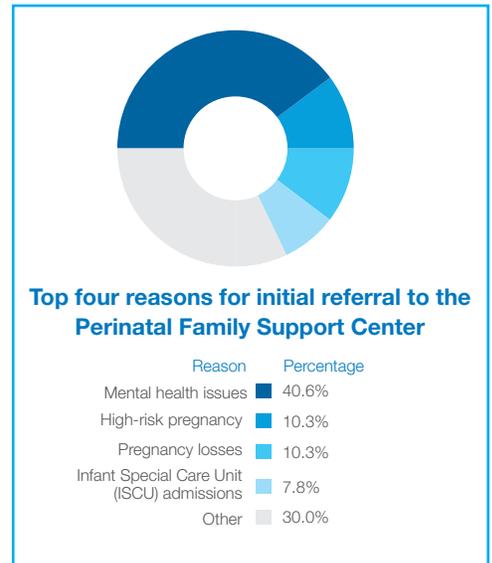
### 2018 Highlights

1,462 families received services from PFSC in fiscal year 2018.

Two five-week sessions of the teen education program (The ABCs of Pregnancy and Parenting) provided anticipatory guidance and developmentally appropriate education to pregnant teens and their support person with an ongoing goal of fostering healthy outcomes. Seventeen of the 48 pregnant teens referred to PFSC elected to participate in this free program.

96 antenatal consults with Neonatology were performed in anticipation of support, guidance and resource needs of obstetric patients whose unborn children were diagnosed with significant fetal anomalies.

PFSC implemented a specially designed electronic note-writing platform within Epic unique to the different types of assessments and treatment planning used for every patient referred to our services. Benefits of this include efficiency and effectiveness in communication with medical team members to improve patient care, as well as data collection to highlight patterns and trends related to patient need.



In 2018, PFSC distributed two dozen Comfort Cubs to patients and their families who have experienced a perinatal loss or placed a baby for adoption, or who have had a premature infant admitted to the Infant Special Care Unit. Shown above is donor Briana Quinn, left, with Janet Winslow, PFSC Supervisor.

Due to deep touch pressure, holding a Comfort Cub triggers the brain to release the neurotransmitters dopamine, serotonin and oxytocin, which causes the body to relax and feel comforted. The Comfort Cub has been scientifically proven to decrease heaviness in the chest and aching in the arms, as well as other physical manifestations of a loss.

### Community Benefit and Philanthropy

PFSC had representation at The National Association of Perinatal Social Workers (NAPSW) Conference in Long Beach, California, in March: "Shining the Light on Perinatal Social Work Practice."

Staff are active in the National Association of Perinatal Social Workers, and two are serving on the annual conference planning committee for 2020 to be held in Chicago.

PFSC is involved in two initiatives with the Illinois Perinatal Quality Collaborative: Mother and Newborns Affected by Opioid Use Disorder and Long-Acting Reversible Contraception.

PFSC is able to expand its impact for patients and families through grant funding and the generous gifts of community partners and donors. In fiscal year 2018:

- 435 families or patients were provided with needs-based support with the assistance of the NorthShore Associate Board Emergency Family Fund.
- For the tenth consecutive year, PFSC partnered with the Junior League of Evanston-North Shore enabling an education and advocacy "Baby Shower" for 15 low-income pregnant women and their guests in April. In addition to a delicious meal and educational talks by various presenters, patients received new items useful in caring for their baby.
- The Auxiliary of NorthShore University HealthSystem awarded PFSC a small project grant to enhance family-centered care in the ISCU using current, evidence-based resources that reflect an understanding of family grief and adjustment specific to the ISCU experience. These comprehensive resources will be available to approximately 400 ISCU families each year.
- PFSC received funding to distribute books appropriate for both adults and children related to perinatal grief and loss and provided beautiful, hand-crafted memory boxes in which patients can place mementos related to their perinatal loss and facilitate a weekly support group for families with a baby in the ISCU.

## 2018 Department of Obstetrics and Gynecology

# Medical Education

Medical education is a critical facet of the Department's mission. University of Chicago Pritzker School of Medicine trainees place NorthShore at the top of their educational experiences, and our faculty are regularly recognized for their dedication and teaching skills.

## Undergraduate Program

### **H. Jacob Saleh, MD**

*Site Director and Clinical Associate Professor*

### **Michael Hughey, MD**

*Associate Site Director and Senior Clinician Educator  
Undergraduate Medical Education*

### 2018 Highlights

Simulation training includes student orientation and skills training in the Simulation Lab and culminates in the Objective Structured Clinical Exam (OSCE). This training anchors the M3 curriculum and is provided under the guidance of Michael Hughey, MD, Associate Site Director for Undergraduate Medical Education.

Student learning opportunities have been increased with the introduction of new simulation training modules, both online and at the Grainger Center for Simulation and Innovation. These simulations typically involve either introducing the students to new clinical skills or providing them experience with uncommon, but important clinical scenarios, all in a controlled, safe learning environment.

New simulation topics for 2018 included postpartum hemorrhage, ectopic pregnancy and patient sign-outs. New pelvic manikins, purchased by NorthShore, have enhanced the student training in their physical examination skills.

Dr. Saleh's Forceps Delivery Trainer has caught the attention of the biomedical design team at Northwestern University's McCormick School of Engineering. Aided by the use of 3D imaging and capacitance force sensors, the standard pelvic training model has been transformed into an interactive teaching tool.

With real-time haptic and visual feedback, learners can better understand the pelvic axis and forces required to properly and safely perform operative vaginal deliveries. The team of engineering students (Tara Cornwell, Deanna Hendrickson, Puck Pentenga and Eugene Yakobovich, Course BME 390) presented their progress at the Northwestern University Tech Center this fall and will complete the model in Spring 2019.

Standardized patients (trained patient models used to simulate patients) are used during student orientation, and the Department is looking to expand their use for training, based on the favorable student response.

Drs. Michael Hughey, H. Jacob Saleh, and Sabrina Holmquist, MD, MPH, (University of Chicago Obstetrics and Gynecology Clerkship Director) continue their involvement in the Association of Professors in Gynecology and Obstetrics/Council on Resident Education in Obstetrics and Gynecology (APGO/CREOG). Ongoing initiatives for presentation include the use of case-based learning (CBL) to replace standard PowerPoint lectures. While the learning objectives for the students are essentially the same as in the past, the methods used to achieve those objectives are constantly changing. This dynamic is influenced by educational research findings, actively solicited student/faculty feedback and changing availability of resources. Much like the OSCE, CBL is an opportunity for students to implement what they have learned in the clinical setting.

The 2018 students voted for the Holden K. Farrar, Jr. Teacher and Lecturer of the Year, and the winners were Dr. H. Jacob Saleh and Dr. Barrett Robinson, respectively.

## Graduate Program

### **Sangeeta Senapati, MD, MS**

*Site Director and Clinical Associate Professor*

### **Barrett Robinson, MD, MPH**

*Associate Site Director and Clinical Assistant Professor*

All 28 of the University of Chicago Pritzker School of Medicine OB/GYN residents benefit from learning opportunities at NorthShore over their four-year training program.

Under the leadership of Adrienne Dade, MD, Obstetrics and Gynecology Residency Director at University of Chicago Pritzker School of Medicine, Pritzker and NorthShore provide the breadth and depth of graduate medical education at both campuses.

NorthShore also hosts residents from Presence Saint Francis Hospital Obstetrics and Gynecology Residency Training Program, which allows for second- and third-year residents to participate in our Labor and Delivery team throughout the academic year.

The University of Chicago residents' Obstetrics and Gynecology outpatient clinic training is based at the North Shore Community Health Center. This experience gives residents the opportunity to learn outpatient management within the context of a "group practice."

### 2018 Highlights

Members of our OB/GYN faculty are routinely recognized for their remarkable teaching abilities. NorthShore physician Marion Jelcz, MD, was acknowledged by the Obstetrics and Gynecology residents for his talent and dedication to graduate medical education as the recipient of the Golden Apple Award as well as the APGO/CREOG Teaching Excellence Award.

Carolyn Botros, MD, was recognized for outstanding teaching of the residents by a fellow.

The residents received several important accolades this year for their teaching of medical students. Golden Apple Awards were received by Robert Scholz, MD (Class of 2018), Melissa Javellana, MD (Class of 2019), Taylor Stanton, MD (Class of 2019), Caroline Kuhn, MD (Class of 2020), and Angela Rugino, MD (Class of 2021).

## 2018 Medical Education

### Graduate Program *continued*

- Ian Grable, MD, MPH, Clinical Associate Professor in Maternal-Fetal Medicine, and his colleagues continued to provide cutting-edge educational opportunities for the residents through his use of simulation technology in the state-of-the-art Grainger Center for Simulation and Innovation at NorthShore.

His educational program provided intensive training for the residents in such areas as complex deliveries, ultrasound skills, team building, obstetric emergencies, patient counseling and management of medically complex situations.

Similarly, Sangeeta Senapati, MD, MS, and colleagues provided the residents with high-impact gynecologic training at the Grainger Center for Simulation and Innovation with a focus on advanced minimally invasive surgical skills and techniques using a range of both low- and high-fidelity models in the safety of the simulated learning environment.



*Dr. Richard Silver in NorthShore's Grainger Center for Simulation and Innovation, a destination for advanced medical education and simulation training.*

The resident research projects are representative of the extensive scope of research at both NorthShore and the University of Chicago and the combined faculty commitment to mentor learners in their academic endeavors. Our residents published and presented their research work at numerous national meetings:

**Juliana Taney, MD**, published her work on placental abruption with delayed fetal compromise in maternal acetaminophen toxicity in *Obstetrics and Gynecology*.

**Rachel Neal, MD**, worked with a group at UT Southwestern looking at the benefits of intensive care unit monitoring for low-grade blunt hepatic injury, and the results were published in *The American Journal of Surgery*.

**Zachary Dobbin, MD**, published on molecular response to neoadjuvant chemotherapy in high-grade serous ovarian carcinoma in *Molecular Cancer Research*. With that same team from the University of Alabama, work was published on targeting RNA polymerase I in both chemosensitive and chemoresistant populations in epithelial ovarian cancer in the journal *Clinical Cancer Research*.

**Caroline Kuhn, MD**, has been researching the relationship between fMRI events resembling sustained uterine contractions and spontaneous menstrual cramping under the direction of Kevin Hellman, PhD\*\*. This work was published in *American Journal of Obstetrics and Gynecology*.

**Richard Cockrum, MD**, and **Kevin Hellman, PhD\*\***, presented at the AAGL annual meeting on development of a method to characterize vascular contributions to cramping in dysmenorrhea. He also worked with Maryam Siddiqui, MD, and Sarosh Rana, MD\*, MPH, on determining the association of latent labor with classical cesarean delivery, which was presented at the American Congress of Obstetrics and Gynecology (ACOG) annual meeting.

**Melissa Javellana, MD**, presented her work on the heterogeneity of operative approach in long-term survivors of high-grade serous carcinoma at the Society of Gynecologic Oncologists annual meeting. This project was completed in collaboration with Ernst Lengyel, MD\*, PhD, Diane Yamada, MD\*, and Rebecca Brooks, MD\*.

**Sirina Keesara, MD**, during her elective rotation, worked on identifying barriers to postpartum contraception and the difference among women based on parity and future fertility desires. This was presented at the ACOG annual meeting and then published in *Culture, Health & Sexuality*.

**Katharina Laus, MD**, teamed with Kevin Hellman, PhD\*\*, and Frank Tu, MD\*\*, to investigate noninvasive objective measurements of uterine perfusion/oxygenation and the effects of Naprosyn, which was presented at the International Pelvic Pain Society annual meeting.

**Elizabeth Banks, MD**, and **Anita Blanchard, MD\***, presented departmental initiatives to decrease clinician burnout and improve resilience at the Association of Professors of Gynecology and Obstetrics (APGO)/ Council on Resident Education in Obstetrics and Gynecology (CREOG) annual meeting as well as the Group on Resident Affairs spring meeting. Dr. Banks also worked with the Gynecologic Pain and Minimally Invasive Surgery Division on a video demonstrating ultrasound guided peripheral nerve blocks for patients with chronic vulvar pain, which was presented at the AAGL annual meeting.

**Robert Scholz, MD**, under the guidance of Emmet Hirsch, MD\*\*, presented on the efficacy of a multifaceted surgical site infection prevention bundle for cesarean deliveries at the Central Association of Obstetrics and Gynecology annual meeting. He also worked with Maryam Siddiqui, MD\*, on a project evaluating anemia in pregnancy and risk of blood transfusion, which was presented at the ACOG annual meeting.

**Katharina Laus, MD**, and **Melissa Javellana, MD**, presented work investigating Cardiovascular Risk Factors and Their Influence on Staging of Endometrial Cancers at the Western Association of Gynecologic Oncologists (WAGO) annual meeting. They completed this project in collaboration with Jerlinda Ross, MD, Chuanhong Liao, MS, Iman Alsaden, MD, Diane Yamada, MD\*, and Nita Lee, MD\*.

\* University of Chicago Pritzker School of Medicine faculty

\*\* NorthShore University HealthSystem faculty

### Fellowship Programs

#### Division of Female Pelvic Medicine and Reconstructive Surgery Fellowship

**Roger Goldberg, MD, MPH**

*Program Director and Clinical Assistant Professor  
Female Pelvic Medicine and Reconstructive Surgery*

**Sonia Dutta, MD**

*Associate Program Director  
Female Pelvic Medicine and Reconstructive Surgery*

The Division of Female Pelvic Medicine and Reconstructive Surgery (FPMRS) supports advanced training for three fellowship positions certified by the Accreditation Council for Graduate Medical Education (ACGME). Fellows develop clinical expertise in the medical and surgical treatment of urinary incontinence, pelvic organ prolapse and pelvic health conditions. Training is integrated with rotations with the FPMRS faculty at the University of Chicago, as well as with NorthShore faculty in urology, colorectal surgery and minimally invasive gynecologic surgery.

#### 2018 Highlights

Our 2018 graduate, **Carolyn Botros, DO**, joined the FPMRS Division at the Lehigh Valley Health Network.

**Svjetlana Lozo, MD, MPH**, our third-year fellow, successfully completed the NorthShore Quality and Patient Safety fellowship, with a project focused on preoperative penicillin allergy testing and antibiotic stewardship. True to her commitment to a variety of interests, Dr. Lozo presented her work on the cognitive impact of anticholinergic overactive bladder medications, the role of collagen matrices in prolapse, and the development of gynecologic training curriculum at national and international conferences.

**Ghazaleh Rostami Nia, MD**, our second-year fellow, continues her work on three-dimensional pelvic floor ultrasound for the assessment of obstructive defecation. She is developing standards for the ultrasonographic measurement of rectal motility. Translation from evaluation with imaging to surgical management of obstructive defecation is underway.

**Joseph Pincus, MD**, our first-year fellow, joined us after completing his OB/GYN residency at the Albert Einstein College of Medicine. Dr. Pincus is researching the potential relationship between pharmacogenetics and the efficacy of overactive bladder medications.

**Nani Phillips, MD**, recently matched to our fellowship, and she will join us in July after completing her OB/GYN residency at the Albany Medical College.

#### Division of Gynecologic Oncology Fellowship

**Elena Moore, MD**

*Associate Program Director and Clinical Assistant Professor  
Gynecologic Oncology*

The Division of Gynecologic Oncology is an approved, integrated fellowship training program with the University of Chicago (Nita Lee, MD, MPH Program Director). The fellowship program was accredited by the Accreditation Council for Graduate Medical Education (ACGME). The program consists of one basic science research year and two clinical years divided between the NorthShore University HealthSystem and University of Chicago campuses. The clinical experience includes management of preinvasive and complex invasive cancers of the gynecological tract under the supervision of 10 attending physicians, with both surgical and medical oncology as central components of the curriculum.

#### 2018 Highlights

**Jerlinda Ross, MD**, graduated from our fellowship this year and joined Virtua Gynecologic Oncology specialists in Moorestown, New Jersey, an affiliate of Penn Medicine. Dr. Ross was invited to present her abstract on "Endometrial cancer survivors' access to recommended self-care resources to target obesity in a high poverty urban community" at the Society of Gynecologic Oncology 2017 Annual Meeting on Women's Cancer. This will be the subject of her thesis for oral board exams.

**Claire Hoppenot, MD**, is now entering the last clinical year of fellowship after completing a medical ethics fellowship through the MacLean Center.

**Isabel Lazo, MD**, is entering her first of two clinical years of fellowship after completing a research year with Ernst Lengyel, MD, PhD, Professor of Obstetrics and Gynecology, in his ovarian cancer research laboratory. Dr. Lazo completed a fellowship in hospice and palliative care medicine at University of California, Davis prior to her recruitment to our fellowship.

**Raanan Alter, MD**, is currently in his first year of fellowship doing research with Dr. Akash Patnaik studying the T-cell tumor microenvironment in endometrial cancers and how this changes in response to immune therapies.

**Melissa Javellana, MD**, is our newest recruit having matched to our fellowship program for 2019. Dr. Javellana is current completing her residency at the University of Chicago. She completed her medical degree at the University of Illinois College of Medicine.

### Fellowship Programs

## NorthShore and University of Chicago Maternal-Fetal Medicine Fellowship

### **David Ouyang, MD**

*Program Director and Clinical Associate Professor  
Maternal-Fetal Medicine*

The integrated NorthShore and University of Chicago Maternal-Fetal Medicine (MFM) fellowship has fully developed the training experience in the care of women with high-risk pregnancies for all four of its fellows. During the three-year program, the fellows benefit from dividing their time and activities equally between NorthShore and the University of Chicago under the supervision and mentorship of 17 board-certified faculty members. They spend two years in clinical rotations where they refine their ability to manage complex pregnancies and develop proficiency and expertise in ultrasound and antenatal diagnosis, including procedural skills such as amniocentesis and chorionic villus sampling. Our fellows also devote at least one year to clinical and/or basic science research activity with faculty mentorship.

In addition to the core curriculum, our fellows have numerous unique opportunities to develop an area of interest within the field of MFM, including participation in an Ethics fellowship, a Quality and Safety fellowship, a medical education scholar program, and a graduate course in biostatistics, epidemiology and health services research. Fellows also attend the NICHD Young Investigators Conference, attend a Maternal-Fetal Medicine Units Network steering meeting and participate in the Excellence in Clinical Research Course.

### 2018 Highlights

**Patrick Schneider, MD**, successfully defended his thesis “Improving the timely delivery of antihypertensive medication for severe maternal hypertension in pregnancy and postpartum” under the mentorship of Ann Borders, MD, of the NorthShore MFM Division. During his fellowship, Dr. Schneider completed an additional Quality and Safety fellowship and presented his research at the national Society for Maternal-Fetal Medicine (SMFM) meeting. Dr. Schneider accepted a faculty position at The Ohio State University where he will have an opportunity to continue his quality work with the Ohio Perinatal Quality Collaborative.

**Lena Braginsky, MD**, is our third-year fellow who took on the challenging task of conducting a randomized controlled trial comparing the use of tissue adhesive versus butterfly strips for cesarean wound closure to potentially reduce infection and wound disruption. She recruited more than 500 patients from NorthShore and the University of Chicago. She presented her results in an oral presentation at the 2019 SMFM meeting and was awarded Best Oral Concurrent Session 8. Her mentor is Beth Plunkett, MD, MPH, of the NorthShore MFM Division.

**Javier Rodriguez Kovacs, MD**, is our second-year fellow and joined us following completion of his residency at Wayne State University. He is working with Sarosh Rana, MD, MPH, section chief of MFM at the University of Chicago, on his thesis entitled “Long-Term Cardiac Effects of Hypertension During Pregnancy” as well as taking a lead role in implementing the Illinois Perinatal Quality Collaborative (ILPQC) Mothers and Newborns Affected by Opioids initiative at the University of Chicago. Dr. Rodriguez Kovacs also attained certification in fetal echocardiography during his second year of fellowship.

**Samantha de los Reyes, MD**, is one of our first-year fellows and joined us following completion of her residency at Johns Hopkins Medical School. She is joined by Caitlin MacGregor, MD, as our other first-year fellow who completed her residency at Brown University.

We had another successful match this year and look forward to having **Sunitha Suresh, MD**, from Johns Hopkins Medical School join our fellowship next year.



*Participants in the MFM fellowship (from left) Dr. Caitlin MacGregor, Dr. Samantha de los Reyes, Dr. David Ouyang, Dr. Lena Braginsky, and Dr. Javier Rodriguez Kovacs.*

## 2018 Department of Obstetrics and Gynecology

# Scholarship

Through invited talks and publication in peer-reviewed journals, our Department is contributing to the dissemination of knowledge and impacting how care is delivered.

## Publications

Agrawal, V, Jaiswal, MK, Beaman, KD, **Hirsch, E.** (2018) Surfactant protein (SP-A) suppresses preterm delivery induced by live *E. coli* in mice. *Biology of Reproduction* Sep 1;99(3):546-555.

Awonuga, AO, Wheeler, K, Thakur, M, Jeelani, R, Diamond, MP, **Puscheck, EE.** (2018) The value of delaying hCG administration to enable maturation of medium-sized follicles in patients undergoing superovulation for IVF/ICSI. *Journal of Assisted Reproduction and Genetics* Feb;35(2):289-295.

Balzarro, M, Rubilotta, E, Goss, C, Costantini, E, Aribani, W, **Sand, P.** (2018) Counseling in urogynecology: A difficult task, or simply good surgeon-patient communication? *International Urogynecology Journal* Jul;29(7):943-948.

**Borders, AE,** Lai, JS, Wolfe, K, Qadir, S, Peng, J, Kim, KY, **Keenan-Devlin, L,** Holt, J, Grobman, W. (2017) Using item response theory to optimize measurement of chronic stress in pregnancy. *Social Science Research* May;64:214-225.

Chatzicharalampous, C, Garvin, SE, Korzeniewski, SJ, **Puscheck, E.** (2018) Are infertile patients at greater risk of cesarean delivery? *Fertility and Sterility* 110(3):403-404.

Christianson, MS, Legro, RS, Jin, S, Eisenberg, E, Diamond, MP, Hansen, KR, Vitek, W, Styer, AK, Casson, P, Coutifaris, C, Christman, GM, Alvero, R, **Puscheck, EE,** Christy, AY, Sun, F, Zhang, H, Polotsky, AJ, Santoro, N. (2018) Comparison of sonohysterography to hysterosalpingogram for tubal patency assessment in a multicenter fertility treatment trial among women with polycystic ovary syndrome. *Journal of Assisted Reproduction and Genetics* Dec;35(12):2173-2180.

**Clear, E, Braginsky, L, Plunkett, BA.** (2018) Strip of the month: Fetal intracranial hemorrhage. *NeoReviews* Aug 19(8):e493-e501.

**Cockrum, RH, Tu, FF,** Roth, GE, **Garrison, EF, Oladosu, FA, Hellman, KM.** (2018) Development of a method to characterize vascular contributions to cramping pain in dysmenorrhea. *The Journal of Minimally Invasive Gynecology* Nov-Dec 25(7):S200.

Daar, J, Benward, J, Collins, LR, Davis, JB, Davis, O, Francis, L, Gates, E, Ginsburg, E, **Klipstein, S,** Koenig, B, McCullough, L, Paulson, R, Reindollar, R, Ryan, G, Sauer, M, Tipton, S, Westphal, L, Zweifel, J. (2018) Disclosure of sex when incidentally revealed as part of preimplantation genetic testing (PGT): An Ethics Committee opinion. Ethics Committee of the American Society for Reproductive Medicine. *Fertility and Sterility* 110(4):625-627.

Daar, J, Benward, J, Collins, LR, Davis, JB, Davis, O, Francis, L, Gates, E, Ginsburg, E, **Klipstein, S,** Koenig, B, McCullough, L, Paulson, R, Reindollar, R, Ryan, G, Sauer, M, Tipton, S, Westphal, L, Zweifel, J. (2018) Ethical obligations in fertility treatment when intimate partners withhold information from each other: An Ethics Committee opinion. Ethics Committee of the American Society for Reproductive Medicine. *Fertility and Sterility* 110(4): 619-624.

Daar, J, Benward, J, Collins, LR, Davis, JB, Davis, O, Francis, L, Gates, E, Ginsburg, E, **Klipstein, S,** Koenig, B, McCullough, L, Paulson, R, Reindollar, R, Ryan, G, Sauer, M, Tipton, S, Westphal, L, Zweifel, J. (2018) Fertility pres-

ervation and reproduction in patients facing gonadotoxic therapies: an Ethics Committee opinion. Ethics Committee of the American Society for Reproductive Medicine. *Fertility and Sterility* 110(3): 380-386.

Daar, J, Benward, J, Collins, LR, Davis, JB, Davis, O, Francis, L, Gates, E, **Klipstein, S,** McCullough, L, Reindollar, R, Ryan, G, Sauer, M, Tipton, S, Westphal, L. (2018) Informing offspring of their conception by gamete or embryo donation: An Ethics Committee opinion. *Fertility and Sterility* 109(4):601-605.

Daar, J, Benward, J, Collins, LR, Davis, JB, Davis, O, Francis, L, Gates, E, Ginsburg, E, **Klipstein, S,** Koenig, B, La Barbera, A, McCullough, L, Paulson, R, Reindollar, R, Ryan, G, Sauer, M, Sokol, R, Tipton, S, Westphal, L, Zweifel, J. (2018) Posthumous retrieval and use of gametes or embryos: An Ethics Committee opinion. Ethics Committee of the American Society for Reproductive Medicine. *Fertility and Sterility* 110(1):45-59.

Daar, J, Benward, J, Collins, LR, Davis, JB, Davis, O, Francis, L, Gates, E, Ginsburg, E, Gittlin, S, **Klipstein, S,** McCullough, L, Paulson, R, Reindollar, R, Ryan, G, Sauer, M, Tipton, S, Westphal, L, Zweifel, J. (2018) Use of preimplantation genetic testing for monogenic defects (PGT-M) for adult-onset conditions: An Ethics Committee opinion. Ethics Committee of the American Society for Reproductive Medicine. *Fertility and Sterility* 109(6):989-992.

Dambaeva, S, Schneiderman, S, Jaiswal, MK, Agrawal, V, Katara, GK, Gilman-Sachs, A, **Hirsch, E,** Beaman, KD. (2018) Interleukin-22 prevents lipopolysaccharide-induced preterm labor in mice. *Biology of Reproduction* Mar 1;98(3):299-308.

**Diaz, N, Plunkett, BA.** (2018) Universal screening for perinatal depression. *NeoReviews* Mar 19(3):e143-e151.

Feinberg, E, Westbay, L, **Hirshfeld-Cytron, J,** Neiderberger, C, Uhler, M. (2017) Increasing access to fertility care through creation of a private foundation: The Chicago experience. *Fertility and Sterility* Oct.

Gomelsky, A, Athanasiou, S, Choo, MS, Cossou, M, Dmochowski, RR, Gomes, CM, Monga, A, Nager, CW, Ng, R, Rovner, ES, **Sand, P,** Tomoe, H. (2018) Surgery for urinary incontinence in women: Report from the 6th international consultation on incontinence. *Neurourology and Urodynamics* Dec 4. [Epub ahead of print]

**Hellman, KM,** Datta, A, **Steiner, ND,** Kane Morlock, JN, **Garrison, EF,** Clauw, CJ, **Tu, FF.** (2018) Identification of experimental bladder sensitivity among dysmenorrhea sufferers. *American Journal of Obstetrics and Gynecology* Jul;219(1):84.

**Hellman, KM, Kuhn, CS, Tu, FF,** Dillane, KE, Shlobin, NA, **Senapati, S,** Zhou, X, Li, W, **Prasad, PV.** (2018) Cine MRI during spontaneous cramps in women with menstrual pain. *American Journal of Obstetrics and Gynecology* May;218(5):506.

**Hellman, KM, Laus, K, Oladosu, F, Garrison, E.** (2018) Noninvasive objective MRI method to evaluate uterine hemodynamic function and the effects of Naproxen. *Reproductive Sciences* 25:118A-119A.

*continued*

Publications *continued*

- Hellman, KM, Tu, F, Garrison, E, Oladosu, F.** (2018) Identification of a preclinical phenotype for the development of painful bladder syndrome in women with isolated dysmenorrhea. *Reproductive Sciences* 25:221A.
- Hellman, KM, Yu, PY, Oladosu, FA, Segel, C, Han, A, Prasad, PV, Jilling, T, Tu, FF.** (2018) The effects of platelet-activating factor on uterine contractility, perfusion, hypoxia and pain in mice. *Reproductive Sciences* Mar;25(3):384-394.
- Hirsch, E.** (2017) The most important quality of a physician. Essay in *American Journal of Obstetrics and Gynecology* Jan 3: S0002-9378(17)32811-9.
- Hirsch, E.** (2018) Lessons from an angry patient. Perspective *The New England Journal of Medicine* 379:607-609.
- Hite, A, Victorson, D, **Elue, R, Plunkett, BA.** (2018) An exploration of barriers facing physicians in diagnosing and treating obesity. *American Journal of Health Promotions* Jan 1. [Epub ahead of print]
- Iyer, S, **Laus, K, Rugino, A, Botros, C, Lozo, S,** Botros, SM, **Goldberg, R,** Tomezsko, J, **Gafni-Kane, A,** Wroblewski, K, **Sand, P.** (2018) Subjective and objective responses to PTNS and predictors for success: A retrospective cohort study of percutaneous tibial nerve stimulation for overactive bladder. *International Urogynecology Journal* Nov 22. [Epub ahead of print]
- Iyer, S, Seitz, M, Tran, A, Scalabrin, Reis R, **Botros, C, Lozo, S, Sand, P,** Tomezsko, J, Wang, C, **Gafni-Kane, A.** (2018) Anterior colporrhaphy with and without dermal allograft: A randomized control trial with long-term follow-up. *Female Pelvic Medicine and Reconstructive Surgery* Jan 3. [Epub ahead of print]
- Keesara, S, Kim, JJ.** (2018) Outcomes of universal perinatal mood screening in the obstetric and pediatric setting. *NeoReviews* Mar 19(3):e152-e159.
- Klipstein, S.** (2018) Making reproductive choices in the face of genetic uncertainty. *The Hastings Center Report* 48(2);42-3.
- Kominiarek, MA, Grobman, W, Adam, E, Buss, C, Culhane, J, Entringer, S, Simhan, H, Wadhwani, PD, Kim, KY, **Keenan-Devlin, L, Borders, A.** (2018) Stress during pregnancy and gestational weight gain. *Journal of Perinatology* May;38(5):462-467.
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- Lengmang, S, Shephard, S, Datta, A, **Lozo, S, Kirschner, CV.** (2018) Pubovesical sling for residual incontinence after successful vesicovaginal fistula closure: A new approach to an old procedure. *International Urogynecology Journal* Oct;29(10):1551-1556.
- Lozo, S,** Botros, S. (2017) Nonsurgical management of stress urinary incontinence. Online contributors, DECKERx *Obstetrics and Gynecology* deckerip.com/products/scientific-american-obstetrics-and-gynecology/contributors
- Lu, Y, Beeghly-Fadiel, A, Wu, L, Guo, X, Li, B, Schildkraut, JM, **Rodriguez, GC,** et al. (2018) A transcriptome-wide association study among 97,898 women to identify candidate susceptibility genes for epithelial ovarian cancer risk. *Cancer Research* Sept 15;78(18):5419-5430.
- Lytte, B, Lawson, A, Smith, K, Klock, S, Kazer, R. **Hirshfeld-Cytron, J, Pavone, M.** (2018) Sleep disturbance and ovarian stimulation outcomes in infertility and fertility preservation patients. *Journal of Reproductive Medicine* 63:292-298.
- Martini, A, Jasulaitis, S, Fogg, L, Uhler, M, **Hirshfeld-Cytron, J.** (2018) Evaluating the utility of intralipid infusion to improve live birth rates in patients with recurrent pregnancy loss or recurrent implantation failure. *Journal of Reproductive Medicine* 11:261-8.
- McCarthy, AM, Zhou, Y, **Adams, M, Elue, R, Diaz N, Plunkett BA.** (2018) Association of hypertension and  $\alpha$ -blocker use with depression during pregnancy. *Open Journal of Obstetrics and Gynecology* 8:925-935.
- Miller, ES, Grobman, WA, Culhane, J, Adam, E, Buss, C, Entringer, S, Miller, G, Wadhwani, PD, **Keenan-Devlin, L, Borders, A.** (2018) Antenatal depression, psychotropic medication use and inflammation among pregnant women. *Archives of Women's Mental Health* Dec;21(6):785-790.
- Milne, RL, Kuchenbaecker, KB, Michailidou, K, Beesley, J, Kar, S, Lindström, S, Hui, S, Lemaçon, A, Soucy, P, Dennis, J, Jiang, X, Rostamianfar, A, Finucane, H, Bolla, MK, McGuffog, L, Wang, Q, **Rodriguez, GC,** et al. (2017) Identification of 10 variants associated with risk of estrogen-receptor-negative breast cancer. *Nature Genetics* Dec;49(12):1767-1778.
- Oladosu, F, Garrison, E, Hellman, K.** (2018) NSAID-resistant menstrual pain is due to low serum levels of NSAIDs. *Reproductive Sciences* 2018 25:145A.
- Oladosu, FA, Tu, FF, Farhan, S, Garrison, EF, Steiner, ND, Roth, GE, Hellman, KM.** (2018) Abdominal skeletal muscle activity precedes spontaneous menstrual cramping pain in primary dysmenorrhea. *American Journal of Obstetrics and Gynecology* Jul;219(1):91.
- Oladosu, FA, Tu, FF, Hellman, K.** (2018) Nonsteroidal anti-inflammatory drug resistance in dysmenorrhea: Epidemiology, causes and treatment. *American Journal of Obstetrics and Gynecology* Apr;218(4):390-400.
- Puscheck, EE,** Bolnick, A, Awonuga, A, Yang, Y, Abdulhasan, M, Li, Q, Secor, E, Loudon, E, Hüttemann, M, Rappolee, DA. (2018) Why AMPK agonists not known to be stressors may surprisingly contribute to miscarriage or hinder IVF/ART. *Journal of Assisted Reproduction and Genetics* 2018 Jun 7. [Epub ahead of print]
- Qian, F, Wang, S, Mitchell, J, McGuffog, L, Barrowdale, D, Leslie, G, **Rodriguez, GC,** et al. (2018) Height and body mass index as modifiers of breast cancer risk in BRCA1/2 mutation carriers: A Mendelian randomization study. *Journal of the National Cancer Institute* Oct 12. [Epub ahead of print]
- Rebeck, TR, Friebel, TM, Friedman, E, Hamann, U, Huo, D, **Rodriguez, GC,** et al. (2018) Mutational spectrum in a worldwide study of 29,700 families with BRCA1 or BRCA2 mutations. *Human Mutation.* 2018 May;39(5):593-620. Epub 2018 Mar 12. PMID: 29446198
- Rodriguez Kovacs, J, Tien, SH, Plunkett, BA.** (2018) Selective serotonin reuptake inhibitor use in pregnancy: Repercussions on the oblivious passenger. *NeoReviews* Mar 19(3)60-69.
- Rostaminia, G, Chang, C, Pincus, JB, Sand, PK, Goldberg, RP.** (2018) Predictors of successful percutaneous tibial nerve stimulation (PTNS) in the treatment of overactive bladder syndrome. *International Urogynecology Journal* Nov 29. [Epub ahead of print]
- Rostaminia, G, Wei, Q, Tomezsko, J.** (2018) Posterior perineal translevator hernia: Application of MRI, 3D ultrasound and computerized modeling. *International Urogynecology Journal* Oct;29(10)1559-1561.
- Ruden, DM, Bolnick, A, Awonuga, A, Abdulhasan, M, Perez, G, **Puscheck, EE,** Rappolee, DA. (2018) Effects of gravity, microgravity or microgravity simulation on early mammalian development. *Stem Cells and Development* 2018 Sep 15;27(18):1230-1236.
- Schneider, PD,** Groner, A. (2018) Understanding the limitations of fetal cardiac imaging. *NeoReviews* 19(3):e134-e142.
- Seitz, M, Jirschele, K, Tran, A, Iyer, S, **Gafni-Kane, A,** Tomezsko, J, Botros, SM, **Sand, PK.** (2018) A comparison of sacrospinous hysteropexy augmented with polypropylene mesh versus human dermis at 12-months follow-up: An ambidirectional study. *Female Pelvic Medicine and Reconstructive Surgery* Oct 17. [Epub ahead of print]



## 2018 Scholarship

Thaete, LG, Qu, XW, **Neerhof, MG, Hirsch, E**, Jilling, T. (2018) Fetal growth restriction induced by transient uterine ischemia-reperfusion: Differential responses in different mouse strains. *Reproductive Sciences* Jul;25(7):1083-1092.

Thakur, M, Feldman, G, **Puscheck, EE**. (2018) Primary ovarian insufficiency in classic galactosemia: Current understanding and future research opportunities. *Journal of Assisted Reproduction and Genetics* Jan;35(1):3-16.

Tran, AM, Reis, R, Iyer, S, **Botros, C, Goldberg, RP, Sand, PK**, Botros, SM. (2018) Is there a relationship between patient-reported satisfaction and persistence on overactive bladder syndrome pharmacotherapy? *Female Pelvic Medicine and Reconstructive Surgery* May/June;24(3):237-240.

**Tu, FF**. (2018) Focus on optimising laparoscopic surgery. *BJOG: An International Journal of Obstetrics and Gynaecology* Oct;125(11):1477.

Van Geelen, H, Ostergard, D, **Sand, P**. (2018) A review of the impact of pregnancy and childbirth on pelvic floor function as assessed by objective measurement techniques. *International Urogynecology Journal* Mar;29(3):327-338.

Waheed, S, Dorjbal, B, Hamilton, CA, Maxwell, GL, **Rodriguez, GC**, Syed, V. (2017) Progesterone and calcitriol reduce invasive potential of endometrial cancer cells by targeting ARF6, NEDD9 and MT1-MMP. *Oncotarget* Nov 28;8(69):113583-113597.

Yang, Y, Abdulhasan, M, Awonuga, A, Bolnick, A, **Puscheck, EE**, Rappolee, DA. (2017) Hypoxic stress forces adaptive and maladaptive placental stress responses in early pregnancy. *Birth Defects Research* Oct 16;109(17):1330-1344.

Yee, LM, Miller, ES, Statton, A, Ayala, LD, Carter, SD, **Borders, A**, Wong, AE, Olszewski, Y, Cohen, MH, Garcia, PM. (2018) Sustainability of statewide rapid HIV testing in labor and delivery. *AIDS and Behavior* Feb;22(2):538-544.

Zuckerman, RM, Siltan, RL, **Tu, FF**, Eng, JS, **Hellman, KM**. (2018) Somatic symptoms in women with dysmenorrhea and noncyclic pelvic pain. *Archives of Women's Mental Health* Oct;21(5):533-541.

## Presentations

*Note: Citations published in 2017 but not included in the 2017 Annual Report are also listed.*

**Botros, C, Lozo, S**, Klem, R, Iyer, S, **Senapati, S**. (2018) Needs assessment and curriculum development for gynecologic surgeons. International Urogynecological Association 43rd Annual Meeting, Vienna, Austria.

Desai, NA, **Tu, FF**, As-Sanie, S, Atashroo, D, Dassel, MW. (2018) Real-world cases, real-world dilemmas: How veterans of CPP manage the difficult encounters. American Association of Gynecologic Laparoscopic Surgeons 47th Global Congress on Minimally Invasive Gynecology, Unraveling Pelvic Pain: A Practical Approach to Everyday Practice Course, Las Vegas, NV.

Dmochowski, R, Richter, H, Rovner, E, **Sand, PK**, Walters, M. (2018) Panel discussion: Managing complications of pelvic surgery. Rodney Appell Memorial Update in Gynecological Urology 23rd Annual Conference, Turks and Caicos.

Dmochowski, R, Richter, H, Rovner, E, **Sand, PK**, Walters, M. (2018) Video session: Complications of prolapse and incontinence surgery. Rodney Appell Memorial Update in Gynecological Urology 23rd Annual Conference, Turks and Caicos.

Fatunde, Y, **Keenan-Devlin, L**, Simhan, H, Miller, G, Adam, E, Wadhwa, P, Culhane, J, Williamson, D, Buss, C, Entringer, S, Grobman, W, **Borders, A**. (2018) Early-term deliveries are associated with a reduced likelihood of exclusive breastfeeding. Society for Maternal-Fetal Medicine 38th Annual Meeting: The Pregnancy Meeting, Dallas, TX.

**Hellman, K**. (2018) Plenary Session. General Mechanisms of Pain: Visceral pain. International Pelvic Pain Society Annual Meeting, Chicago, IL.

**Hellman, K, Tu, F**. (2018) Abdominal and Pelvic Pain: Scientific Progress Vis-à-vis Clinical Evaluation and Management. International Association for the Study of Pain, Global Year for Excellence in Pain Education Webinar: <http://www.facebook.com/IASP.pain/videos/1855277747844618/>

**Hellman, K, Tu, F**. (2018) Mechanisms of menstrual pain. International Association for the Study of Pain, Global Year for Excellence in Pain Education Webinar: [https://m.facebook.com/story.php?story\\_fbid=1811029298943123&id=464420753603991&\\_rd=1](https://m.facebook.com/story.php?story_fbid=1811029298943123&id=464420753603991&_rd=1)

**Hirsch, E**. (2018) Creative writing by medical practitioners: Process and product. American College of Obstetricians and Gynecologists 66th Annual Clinical and Scientific Meeting, Austin, TX.

**Hirsch, E**. (2018) Is labor an inflammatory condition? American Society for Reproductive Immunology 38th Annual and Chinese Society of Reproductive Immunology 6th Annual Joint Meeting, Shanghai, China.

**Hirsch, E**. (2017) My creative process: Writing "The Education of Doctor Montefiore." Central Association of Obstetricians and Gynecologists 84th Annual Meeting, Scottsdale, AZ.

Iyer, S, **Botros, C, Lozo, S**, Eng, J, **Sand, P**, Tomezsko, J, Botros, S, **Gafni-Kane, A, Sasso, K, Goldberg, R**. (2018) The risk of cognitive impairment in patients starting anticholinergic medications for overactive bladder: A prospective trial. International Urogynecological Association 43rd Annual Meeting, Vienna, Austria.

**Kim, JJ, La Porte, LM, Caulfield-Quiros, SC, Silver, RK**. (2017) Perinatal Depression Program of NorthShore University HealthSystem 2020 Mom Innovation Award Honorable Mention—Innovative Programs in Care. Biennial Perinatal Mental Health Conference, Chicago, IL.

**Kim, JJ**, Sanders, AR, Sanders, C, Shalowitz, MU, **La Porte, LM**, Göring, HH, Gibbons, RD, **Silver, RK**, Gejman, PV. (2017) Genetic exploration of maternal mood: Uncovering biological, genetic and transcriptomic factors associated with perinatal depression. Biennial Perinatal Mental Health Conference, Chicago, IL.

**Kim, JJ, Silver, RK**, Feingold, SB, Lewis, BM. (2018) The psychologist's role in postpartum psychosis: From recognition, to treatment, to legal advocacy. Pre-conference workshop presented at the 126th American Psychological Association Annual Convention, San Francisco, CA.

**Klipstein, S**. (2018) The ethics of preimplantation genetic diagnosis. Cincinnati Children's Precision Genomics Midwest Conference, Cincinnati, OH.

**Klipstein, S**, Trapnell, BC, Pan, D. (2018) Panel Discussion: Innovative genomic therapeutics: Is gene editing or gene therapy the answer to curing human disease? Cincinnati Children's Precision Genomics Midwest Conference, Cincinnati, OH.

**Kuhn, C, Hellman, K, Tu, F**. (2018) Cine MRI during spontaneous cramps in women with menstrual pain [7q]. American Obstetrics and Gynecologists 66th Annual Clinical and Scientific Meeting, Austin, TX.

**La Porte, LM, Kim, JJ**, Gibbons, RD, Zagorsky, B, Desmarais, E, **Silver, RK**. (2017) Text-based Intervention for perinatal depression: Feasibility and acceptance. The 30th Postpartum Support International Annual Conference, Philadelphia, PA.

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## 2018 Scholarship

### Presentations *continued*

**Lee King, P, Keenan-Devlin, L,** Gordon, C, Goel, S, **Borders, A.** (2018) Reducing time to treatment for severe maternal hypertension through state-wide quality improvement. Society for Maternal-Fetal Medicine 38th Annual Meeting: The Pregnancy Meeting, Dallas, TX.

**Lozo, S.** (2018) Changes in collagen tissue matrix in association with pelvic organ prolapse staging. International Urogynecological Association 43rd Annual Meeting, Vienna, Austria.

**Lozo, S, Botros, C,** Datta, A, **Gafni-Kane, A, Senapati, S.** (2018) Do we need to teach basic surgical skills? University of Chicago, Academy of Distinguished Medical Educators 12th Annual Medical Education Day, Chicago, IL.

**Mishra, P, Hirsch, E.** (2018) The effect of an autophagy inducer and inhibitor on autophagic markers and inflammatory cytokines in a mouse macrophage and human myometrial cell lines. Society for Reproductive Investigation 65th Annual Scientific Meeting, San Diego, CA.

**Mishra, P, Hirsch, E.** (2018) The pregnant human myometrial cell line (PHM1-41) fails to respond to toll like receptor (TLR) 2 and TLR7 agonists due to the absence of receptors. Society for Reproductive Investigation 65th Annual Scientific Meeting, San Diego, CA.

Noor, N, Bastawros, D, Eto, U, Iyer, S, Florian-Rodriguez, ME, Lavelle, E, **Lozo, S,** Haviland, M, Von Bargaen, EC, Antosh, D. (2018) Minimally invasive sacrocolpopexy versus vaginal uterosacral ligament suspension: Comparing anatomic outcomes at one year. Society of Gynecologic Surgeons 44th Annual Meeting, Orlando, FL.

Noor, N, Bastawros, D, Florian-Rodriguez, M, Hobson, D, **Lozo, S,** Lavelle, E, Haviland, M, Antosh, D, VonBargaen, E. (2018) Comparing minimally invasive sacrocolpopexy to uterosacral ligament suspension: A multicenter cohort study through Fellows' Pelvic Research Network. International Urogynecological Association 43rd Annual Meeting, Vienna, Austria.

**Oladosu, F, Tu, F, Garrison, E,** Ham, P, **Steiner, N, Roth, G, Hellman, K.** (2018) The interplay between heart rate variability and conditional pain modulation in dysmenorrhea. International Association for the Study of Pain 17th World Congress on Pain, Boston, MA.

**Oladosu, FA, Hellman, KM, Garrison, EF, Steiner, ND, Roth, GE, Tu, FF.** (2018) The interplay between heart rate variability and conditioned pain modulation in dysmenorrhea. International Pelvic Pain Society Annual Meeting, Chicago, IL.

**Oladosu, FA, Tu, FF, Garrison, EF, Steiner, ND, Roth, GE, Hellman, KM.** (2018) Menstrual pain unresponsive to naproxen is due to low naproxen serum levels. University of Chicago Post-Doctoral Symposium. Chicago, IL.

**Puscheck, E.** (2018) Challenging cases in infertility. Wayne State University School of Medicine, Department of Obstetrics and Gynecology 4th Annual Detroit OB/GYN Ultrasound Symposium, Southfield, MI.

**Puscheck, E.** (2018) Imaging of endometriosis and adenomyosis. Wayne State University School of Medicine, Department of Obstetrics and Gynecology 4th Annual Detroit OB/GYN Ultrasound Symposium, Southfield, MI.

**Rinehart, J.** (2018) Big data/AI and its impact on OB/GYN. Pacific Coast Obstetrical and Gynecological Society 87th Annual Meeting, Coeur d'Alene, ID.

Ross, HE, **Rinehart, JS,** Mounts, EL. (2018) Patient consent and embryos: Are patients ever truly informed? Panel discussion, American Society for Reproductive Medicine 74th Scientific Congress and Expo, Denver, CO.

**Rostami Nia, G, Lozo, S, Botros, C, Sand, P, Goldberg, R.** (2018) Factors associated with overactive bladder symptom improvement after one year of monthly PTNS treatment. International Urogynecological Association 43rd Annual Meeting, Vienna, Austria.

**Roth, G, Tu, F, Oladosu, F, Garrison, E, Steiner, N, Hellman, K.** (2018) Multisensory hypersensitivity: A possible risk factor in the transition from episodic to chronic pain among women with dysmenorrhea. International Association for the Study of Pain 17th World Congress on Pain, Boston, MA.

**Sand, PK.** (2018) Critical analysis of the immunogenicity and carcinogenicity of polypropylene mesh. Rodney Appell Memorial Update in Gynecological Urology 23rd Annual Conference, Turks and Caicos.

**Sand, PK.** (2018) Neuromodulation for refractory OAD and anal incontinence. Rodney Appell Memorial Update in Gynecological Urology 23rd Annual Conference, Turks and Caicos.

**Sand, PK.** (2018) Office evaluation for pelvic floor dysfunction. Rodney Appell Memorial Update in Gynecological Urology 23rd Annual Conference, Turks and Caicos.

**Sand, PK.** (2018) Treatment of anterior compartment prolapse with and without adjuvant grafts. Rodney Appell Memorial Update in Gynecological Urology 23rd Annual Conference, Turks and Caicos.

**Sand, PK.** (2018) Vaginal repair of apical prolapse. Rodney Appell Memorial Update in Gynecological Urology 23rd Annual Conference, Turks and Caicos.

**Sand, PK.** (2018) What really works for bladder pain syndrome: Current and future Rx. Rodney Appell Memorial Update in Gynecological Urology 23rd Annual Conference, Turks and Caicos.

**Schneider, P, Lee King, PA, Borders, A.** (2018) Perceptions of barriers to care for the timely delivery of antihypertensive medication for severe hypertension associated with pregnancy. Society for Maternal-Fetal Medicine 38th Annual Meeting: The Pregnancy Meeting, Dallas, TX.

**Schneider, P, Lee King, PA,** Finnegan, K, Goel, S, Grobman, W, Oh, E, **Borders, A.** (2017) Optimizing accuracy of birth certificates through quality improvement. Society for Maternal-Fetal Medicine 37th Annual Meeting, Las Vegas, NV.

**Senapati, S.** (2018) Postop adhesion formation and prevention: State of the art. American Association of Gynecologic Laparoscopic Surgeons 47th Global Congress on Minimally Invasive Gynecology, Optimizing Tissue and Procedural Outcome During Laparoscopic Surgery Course, Las Vegas, NV.

**Senapati, S.** (2018) Systematic restoration during laparoscopic adhesiolysis. American Association of Gynecologic Laparoscopic Surgeons 47th Global Congress on Minimally Invasive Gynecology, Optimizing Tissue and Procedural Outcome During Laparoscopic Surgery Course, Las Vegas, NV.

**Shlobin, A, Tu, FF, Oladosu, FA, Garrison, EF, Steiner, ND, Roth, GE, Hellman, KM.** (2018) Mechanisms underlying the comorbidity of dysmenorrhea and IBS. International Pelvic Pain Society Annual Meeting, Chicago, IL.

**Silver, RK, Kim, JJ, La Porte, LM,** Zagorsky, BM, Desmarais, EA, Gibbons, RD. (2017) Mobile phone-based perinatal depression screening: Feasibility and acceptance. American College of Obstetricians and Gynecologists 65th Annual Clinical and Scientific Meeting, San Diego, CA.

**Tu, F.** (2018) Plenary Session Moderator. Visceral Pain Syndromes. International Pelvic Pain Society Annual Meeting, Chicago, IL.

**Tu, FF.** (2018) You are what you eat: Managing intestinal aspects of pelvic pain. Postgraduate course Unraveling Pelvic Pain: A Practical Approach to Everyday Practice. American Association of Gynecologic Laparoscopic Surgeons 47th Global Congress on Minimally Invasive Gynecology, Las Vegas, NV.

Williamson, D, Elsayed, NM, Simhan, H, Grobman, W, **Keenan-Devlin, L,** Adam, E, Buss, C, Culhane, J, Entringer, S, Wadhwa, P, Miller, G, **Borders, A.** (2018) DNA methylation of genes in the maternal HPA axis during pregnancy is linked with birth outcomes. Society for Maternal-Fetal Medicine 38th Annual Meeting: The Pregnancy Meeting, Dallas, TX.

### Grants and Sponsored Research

#### **Beth Plunkett, MD, MPH**

Director of Research and Clinical Associate Professor

#### **2018 Grants and Research Funding**

The mission of the Division of Research in the Department of Obstetrics and Gynecology is to improve the lives and health of women and their children. The Division fully supports the high-quality research endeavors that take place within the Department. The role of the Division is to enhance investigation, data acquisition, analyses and dissemination. The critical information generated from these research studies can be used to improve clinical care. Departmental research spans the depth and breadth of the field of obstetrics and gynecology and includes topics such as gynecologic pain, gynecologic cancer, maternal and fetal health, preterm birth, perinatal stress and mood disorders, urinary incontinence, and quality of care.



Director of Research Dr. Beth Plunkett

#### **2018 Grants and Research Support**

#### **Ann Borders, MD, MSc, MPH**

Co-Principal Investigator: Understanding socioeconomic disparities in perinatal risk: The role of epigenetic and transcriptional regulation in the placenta. Sponsor: National Institute on Minority Health and Health Disparities/Northwestern University (R01MD01174901).

Principal Investigator: Psychosocial Intervention, Maternal Inflammation and Birth Outcomes: Centering vs. Routine Prenatal Care (PIINC). Sponsor: Eunice Kennedy Shriver National Institute of Child Health and Development (1R01HD092446-01A1).

ILPQC Executive Director, Obstetric Lead and Study Principal Investigator: Mothers and newborns affected by opioids initiative. Sponsor: Centers for Disease Control and Prevention: State-Based Perinatal Quality Collaboratives/Northwestern University (NU58DP006360-01-00).

Principal Investigator: Illinois Perinatal Quality immediate postpartum LARC quality improvement initiative. Sponsor: JB and MK Pritzker Foundation.

Principal Investigator: Illinois Perinatal Quality Collaborative—Working Together for Healthier Moms and Babies in Illinois. Sponsor: DHS.

Principal Investigator: Mothers and newborns affected by opioids initiative. Sponsor: IDPH Title V.

Co-Investigator: ECHO PRO research resource: A developmentally-based measurement science framework for assessing environmental exposure and child health. Sponsor: NIH/NICHD (OD02331901)/Northwestern University.

#### **Mara Dinsmoor, MD, MPH**

Site Principal Investigator: Maternal-Fetal Medicine Units Network; A randomized trial to prevent congenital CMV infection. Research Subaward Agreement with Northwestern University 60036981NUH.

#### **Roger Goldberg, MD, MPH**

Principal Investigator: The risk of cognitive impairment in patients starting anticholinergic medications to treat overactive bladder: A prospective trial. Sponsor: NorthShore.

Awardee: NorthShore Department of Obstetrics and Gynecology Innovation Grant for development of the NorthShore Women's Health Cross Screen to collaborate across multidisciplinary specialties in the care of women.

Co-Principal Investigator: Prospective Study to Evaluate Effectiveness with the NURO™ Percutaneous Tibial Neuromodulation System in Patients with OAB (RESET). Sponsor: Medtronic.

#### **Kevin Hellman, PhD**

Principal Investigator: Noninvasive imaging of uterine physiology to improve treatment for dysmenorrhea. Co-Investigator: Tu. Sponsor: Eunice Kennedy Shriver National Institute of Child Health and Human Development (R21HD091502).

#### **Mary Tilley Jenkins Vogel, MD**

Awardee: Assessing the impact of combination therapy with metformin and statins on endometrial cancer: Implications for prevention and treatment. Sponsor: NorthShore University Research Institute, Medical Group Pilot Grant Program Award.

Principal Investigator: A Phase III Study of Active Surveillance for Low Risk and a Randomized Trial of Carboplatin vs. Cisplatin for Standard Risk Pediatric and Adult Patients with Germ Cell Tumors COG: AGCT1531.

Principal Investigator: A Randomized Placebo-Controlled Phase II Trial of Metformin in Conjunction with Chemotherapy Followed by Metformin Maintenance Therapy in Advanced Stage Ovarian, Fallopian Tube and Primary Peritoneal Cancer Adjuvant Treatment UC13-1235.

Principal Investigator: Gynecological Oncology Group (GOG) 0238; A randomized trial of pelvic irradiation with or without concurrent weekly Cisplatin in patients with pelvic-only recurrence of carcinoma of the uterine corpus. Sponsor: NCI/GOG (U10CA180868/NCT00492778).

Principal Investigator: GOG 0264; A Randomized Phase II Trial of Paclitaxel and Carboplatin vs. Bleomycin, Etoposide and Cisplatin for Newly Diagnosed Advanced Stage and Recurrent Chemo-Naïve Sex Cord-Stromal Tumors of the Ovary. Sponsor: NCI/GOG (U10CA180868/NCT01042522).

Principal Investigator: GOG 281; A Randomized Phase II/III Study to Assess the Efficacy of Trametinib (GSK 1120212) in Patients with Recurrent or Progressive Low-Grade Serous Ovarian Cancer or Peritoneal Cancer. Sponsor: NCI/GOG (U10CA180868/NCT02101788).

Principal Investigator: NRG-GY005; A randomized Phase II/III study of the combination of cediranib and olaparib compared to cediranib or olaparib alone, or standard of care chemotherapy in women with recurrent platinum-resistant or refractory ovarian, fallopian or primary peritoneal cancer. Sponsor: NCI/NRG (U10CA180868/NCT02502266).

NRG-GY009: A Randomized Phase II/III Study of Pegylated Liposomal Doxorubicin and CTEP-Supplied Atezolizumab (IND 134427) vs. Pegylated Liposomal Doxorubicin/Bevacizumab and CTEP-Supplied Atezolizumab vs. Pegylated Liposomal Doxorubicin/Bevacizumab in Platinum-Resistant Ovarian Cancer.

#### **Emmet Hirsch, MD**

Principal Investigator: Autophagy in the Prevention and Genesis of Labor. Sponsor: March of Dimes Prematurity Initiative Award.

Co-Investigator: Psychosocial Intervention, Maternal Inflammation and Birth Outcomes: Centering vs. Routine Prenatal Care (PIINC). Sponsor: Eunice Kennedy Shriver National Institute of Child Health and Human Development (1R01HD092446-01A1).

#### **Lauren Keenan-Devlin, PhD**

Awardee and Primary Investigator: The Perinatal Stress and Breastfeeding Study. Sponsor: NorthShore University Medical Group Pilot Grant Program Award.

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## Jo Kim, PhD

Co-Investigator: ITM 2.0: Advancing Translational Science in Metropolitan Chicago (Principal Investigator: Soloway, Co-Investigator: Silver). Sponsor: NIH.

Awardee: Mobile MOMS (Moms Overcoming Mood Symptoms). Sponsor: NorthShore University HealthSystem Research Institute/Medical Group Pilot Grant Program.

Principal Investigator: State of Illinois Department of Human Services; NorthShore Hotline Community Services Agreement.

Principal Investigators: Identifying and helping women and families at risk for perinatal mood disorders, a feasibility study of computer adaptive technology for perinatal depression. Sponsor: Muneer A. Satter and Kristen H. Hertel.

Co-Investigator: Genetic Exploration of Maternal Mood (GEMM; Principal Investigator: Gejman). Sponsor: NorthShore University HealthSystem Associate Board.

## Elena Moore, MD

Principal Investigator: Pilot study of the impact of early palliative care on quality of life in recurrent ovarian cancer. Sponsor: The NorthShore Auxiliary Board Award.

Principal Investigator: Venous thrombosis in patients receiving extended pharmacologic prophylaxis following minimally invasive surgery for endometrial cancer. Sponsor: NorthShore.

Awardee: Evaluation of clinical outcomes in ovarian cancer patients undergoing variable numbers of postoperative chemotherapy cycles following neoadjuvant chemotherapy and interval cytoreductive surgery. Sponsor: NorthShore Department of Obstetrics and Gynecology Innovation Grant.

## Omar Nelson, PhD

Awardee and Primary Investigator: Evaluation of the Effects of Progestins and Vitamin D on Inflammatory and Oxidative Chemopreventive Endpoints in the Fallopian Tubes. Sponsor: NorthShore University Medical Group Pilot Grant Program Award.

## Beth Plunkett, MD, MPH

Site Principal Investigator: Maternal-Fetal Medicine Units Network. A trial of pessary and progesterone for preterm prevention in twin gestation with a short cervix (PROSPECT). Research Subaward Agreement with Northwestern University 60036981NUH.

Site Principal Investigator: Maternal-Fetal Medicine Units Network. An observational study of hepatitis C virus in pregnancy (HCV). Research Subaward Agreement with Northwestern University 60036981NUH.

Site Principal Investigator: Maternal-Fetal Medicine Units Network. Childhood Pulmonary Complications in a Birth Cohort After a Randomized Trial of Antenatal Corticosteroids: The ALPS Follow-Up Study. Research Subaward Agreement with Northwestern University.

Site Principal Investigator: Maternal-Fetal Medicine Units Network. A Randomized Trial of Pessary in Singleton Pregnancies with a Short Cervix (TOPS). Research Subaward Agreement with Northwestern University 60036981NUH.

Site Principal Investigator: Maternal-Fetal Medicine Units Network. Transexamic Acid for the Prevention of Obstetrical Hemorrhage After Cesarean Delivery: A Randomized Trial (TXA). Research Subaward Agreement with Northwestern University 60036981NUH.

Primary Investigator: Tissue Adhesive Compared with Steri-Strips to Reduce Wound Complications in Pfannenstiel Incision Closure After Cesarean Delivery (TASC).

Primary Investigator: Magnetic Resonance Study: A Novel Assessment of Placental Function (MARS).

## Gustavo Rodriguez, MD

Principal Investigator: Vitamin D and Progestins for the Chemo-prevention of Fallopian Tube/Ovarian Cancer. Sponsor: National Cancer Institute (R01CA214606).

Awardee: Bears Care.

Principal Investigator: A Phase III, randomised, double-blind, placebo-controlled, multicentre study of olaparib maintenance monotherapy in BRCA mutated relapsed ovarian cancer patients who are in complete or partial response following platinum-based chemotherapy, D0816C00002. Sponsor: AstraZeneca.

## Gustavo Rodriguez, MD *continued*

Principal Investigator: A randomized placebo-controlled Phase II trial of metformin in conjunction with chemotherapy followed by metformin maintenance therapy in advanced stage ovarian, fallopian tube and primary peritoneal cancer. Sponsor: The University of Chicago.

Principal Investigator: National Center Institute (NCI) 9671. Exceptional responders pilot study: Molecular profiling of tumors from cancer patients who are exceptional responders. Sponsor: NCI: NCT02243592.

Principal Investigator: Development of a progestin-based pharmacologic approach for the effective prevention of ovarian cancer. Sponsor: NorthShore Auxiliary.

Principal Investigator: Efficacy of carboplatin and weekly paclitaxel for the treatment of carcinosarcoma. Sponsor: NorthShore.

Principal Investigator: Investigation of progesterone-mediated mechanisms of cancer prevention in the fallopian tube: Comparison of fallopian tubes from postpartum vs. nonpregnant women. Sponsor: NorthShore.

Principal Investigator: Outpatient platinum desensitization protocol for the treatment of gynecologic malignancies. Sponsor: NorthShore.

Principal Investigator: Sandy and Ron Schutz Ovarian Cancer Research Fund.

Sub Principal Investigator: Molecular and Imaging Assessment of Fallopian Tube Health. (Principal Investigator: Barton) Sponsor: NIH (1R21CA229707-01).

## Peter Sand, MD

Principal Investigator: Urinary incontinence symptoms and correlation to urodynamic testing. Sponsor: NorthShore Divisional Funding.

Principal Investigator: Does the effect match the symptoms? A retrospective cohort study of percutaneous tibial nerve stimulation for overactive bladder (PTNS). Sponsor: Divisional Funding.

Principal Investigator: A Double-Blind, Randomized, Controlled Trial Comparing the Safety and Efficacy of AMDC-USR with Placebo in Female Subjects with Stress Urinary Incontinence, Clinical Investigation Plan No. 13-003. Sponsor: Cook MyoSite, Incorporated.

Principal Investigator: A prospective, nonrandomized, parallel cohort, multicenter study of Uphold LITE vs. native tissue for the treatment of women with anterior/apical pelvic organ prolapse. Sponsor: Boston Scientific.

Principal Investigator: PRospective Study to Evaluate Effectiveness with the NURO™ Percutaneous Tibial Neuromodulation System in Patients with OAB (RESET). Sponsor: Medtronic.

Principal Investigator: Bladder Capacity as an Objective Measure of Response to Intravesical Treatment of Newly Diagnosed Interstitial Cystitis: A Prospective, Randomized Trial.

## Sangeeta Senapati, MD, MS

Co-Investigator: Neurophysiological diagnostics for menstrual pain. Sponsor: Eunice Kennedy Shriver National Institute of Child Health and Human Development (R21HD081709).

## Richard Silver, MD

Principal Investigator: Responsive eHealth Intervention for Perinatal Depression in Healthcare Settings (MPI: Smith, Danaher, Co-Investigator: Kim). Sponsor: NIMH (2R44MH109191-02).

## Frank Tu, MD, MPH

Principal Investigator: Deciphering the hormonal and nociceptive mechanisms underlying bladder pain. (Co-Investigator: Hellman.) Sponsor: National Institute of Diabetes and Digestive and Kidney Diseases (R01DK10036801/NCT02214550).

Principal Investigator Early Menstrual Pain Impact on Multisensory Hypersensitivity (EMPATHY). Co-Investigator: Hellman. Sponsor: Eunice Kennedy Shriver National Institute of Child Health and Human Development R01HD096332.

Site Principal Investigator: ICECAN: Interstitial Cystitis Effects of the Central Autonomic Network. Sponsors and Collaborators: Medical College of Wisconsin, NorthShore, Case Western Reserve University (NCT03008382).

Site Investigator: Pelvic pain and depression. Sponsor: National Institute of Diabetes and Digestive and Kidney Diseases. Multidisciplinary Approach to Pelvic Pain (MAPP) Network (DK08234208); Subcontract with Northwestern University.

## 2018 Department of Obstetrics and Gynecology

# Clinical Trials

The Department boasts a diverse portfolio of clinical trials that make available the latest options in prevention, diagnostics and therapy for a myriad of conditions in the disciplines of both obstetrics and gynecology.

### DIVISION OF GYNECOLOGIC ONCOLOGY

Investigator	Clinical Trial	Sponsor
Jenkins Vogel	GOG 0210: A Molecular Staging Study of Endometrial Carcinoma	NorthShore
Jenkins Vogel	UC10-283; NCI 8348: A Phase I/II Study of Cediranib and Olaparib in Combination for Treatment of Recurrent Platinum-Sensitive Papillary-Serous Ovarian, Fallopian Tube or Peritoneal Cancer or for Treatment of Recurrent Triple-Negative Breast Cancer	University of Chicago/ Dana Farber Cancer Institute/ NIH/NCI
Jenkins Vogel	GOG-0267: Quality of Life and Care Needs in Patients with Persistent or Recurrent Platinum-Resistant Ovarian, Fallopian Tube and Peritoneal Cancer	GOG
Jenkins Vogel	GOG 0286B: A Randomized Phase II/III Study of Paclitaxel/Carboplatin/Metformin (NSC#91485) vs. Paclitaxel/Carboplatin/Placebo as Initial Therapy for Measurable Stage III or IVB, or Recurrent Endometrial Cancer	NRG Oncology
Jenkins Vogel	UC13-1323: A Phase II Study of XL184 (Cabozantinib) in Recurrent Metastatic Endometrial Cancer	University of Chicago Dana Farber Cancer Institute/ NIH/NCI
Jenkins Vogel	Prophylactic Salpingectomy with Delayed Oophorectomy, Risk-Reducing Salpingo-Oophorectomy and Ovarian Cancer Screening Among BRCA Mutation Carriers: A Proof of Concept Study 2103-0340	MD Anderson
Jenkins Vogel	GOG3005/AbbVie M13-694: A Phase III Placebo-Controlled Study of Carboplatin/Paclitaxel With or Without Concurrent and Continuation Maintenance Veliparib (PARP Inhibitor) in Subjects With Previously Untreated Stages II or IV High-Grade Serous Epithelial Ovarian, Fallopian Tube or Primary Peritoneal Cancer	NRG/AbbVie
Jenkins Vogel	GOG-0264: A Randomized Phase II Trial of Paclitaxel and Carboplatin vs. Bleomycin, Etoposide and Cisplatin for Newly Diagnosed Advanced Stage and Recurrent Chemonaive Sex-Cord Stromal Tumors	NRG Oncology
Jenkins Vogel	GOG0281: A Randomized Phase II/III Study to Assess the Efficacy of Trametinib (GSK 1120212) in Patients with Recurrent or Progressive Low-Grade Serous Ovarian or Peritoneal Cancer	NRG Oncology
Jenkins Vogel	NRG-GY004: A Phase III Study Comparing Single-Agent Olaparib or the Combination of Cediranib and Olaparib to Standard Platinum-Based Chemotherapy in Women with Recurrent Platinum-Sensitive Ovarian, Fallopian Tube or Primary Peritoneal Cancer	NRG Oncology
Jenkins Vogel	AGCT 1531: A Phase III Study of Active Surveillance for Low Risk and a Randomized Trial of Carboplatin vs. Cisplatin for Standard Risk Pediatric and Adult Patients with Germ Cell Tumors	NRG Oncology
Jenkins Vogel	NRG-GY009: A Randomized Phase II/III Study of Pegylated Liposomal Doxorubicin and CTEP-Supplied Atezolizumab (IND 134427) vs. Pegylated Liposomal Doxorubicin/Bevacizumab and CTEP-Supplied Atezolizumab vs. Pegylated Liposomal Doxorubicin/Bevacizumab in Platinum-Resistant Ovarian Cancer	NRG Oncology

Investigator	Clinical Trial	Sponsor
Jenkins Vogel	A Multicenter, Open-Label, Randomized, Phase III Trial to Compare the Efficacy and Safety of Lenvatinib in Combination with Pembrolizumab vs. Treatment of Physician's Choice in Participants with Advanced Endometrial Cancer	Merck Sharp & Dohme
Jenkins Vogel	High-Grade Endometrial Cancer Survival Based on Primary Surgical Staging Procedure Performed	NorthShore
Jenkins Vogel	NRG-GY005: A Randomized Phase II/III Study of the Combination of Cediranib and Olaparib Compared to Cediranib or Olaparib Alone, or Standard of Care Chemotherapy in Women with Recurrent Platinum-Resistant or Refractory Ovarian, Fallopian Tube or Primary Peritoneal Cancer (COCOS)	The University of Chicago/ Dana-Farber Cancer Institute NIH/NCI
Jenkins Vogel	Assessing the Impact of Combination Therapy with Metformin and Statins on Endometrial Cancer: Implications for Prevention and Treatment	NorthShore (Pilot Grant Award)
Jenkins Vogel	GOG 0210: A Molecular Staging Study of Endometrial Carcinoma	NorthShore
Jenkins Vogel	GOG-0252: A Phase III Clinical Trial of Bevacizumab with IV vs. IP Chemotherapy in Ovarian, Fallopian Tube and Primary Peritoneal Carcinoma. NCI-Supplied Agent(s): Bevacizumab	NorthShore
Jenkins Vogel	GOG 0258: A Randomized Phase III Trial of Cisplatin and Tumor Volume Directed Irradiation Followed by Carboplatin and Paclitaxel vs. Carboplatin and Paclitaxel for Optimally Debulked, Advanced Endometrial Carcinoma	NorthShore
Jenkins Vogel	A Phase II Trial of Ribociclib (LEE011) plus Letrozole in Women with Recurrent Low-Grade Serous Carcinoma of the Ovary or Peritoneum, Protocol GOG 3026	NorthShore
Kirschner	What is the Utility of CT Scan in the Perioperative Evaluation of Patients Undergoing Robotic Hysterectomy for Endometrial Cancer?	Northshore
Moore	Assessment of the Needs of Survivors of Gynecologic Malignancies	NorthShore Research Institute /NorthShore Medical Group Pilot Grant Program
Moore	The Impact that Duration of Time on Chemotherapy Has on Survival in Recurrent Ovarian Cancer	NorthShore
Moore	Venous Thrombosis in Patients Receiving Extended Pharmacologic Prophylaxis Following Minimally Invasive Surgery for Endometrial Cancer	NorthShore
Moore	Pilot Study of the Impact of Early Palliative Care on Quality of Life in Recurrent Ovarian, Fallopian Tube and Primary Peritoneal Cancer	NorthShore Breast and Ovarian Research Program: Concept/ Pilot Award
Moore	Evaluation of Clinical Outcomes in Ovarian Cancer Patients Undergoing Variable Numbers of Postoperative Chemotherapy Cycles Following Neoadjuvant Chemotherapy and Interval Cytoreductive Surgery	NorthShore

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## DIVISION OF GYNECOLOGIC ONCOLOGY *continued*

Investigator	Clinical Trial	Sponsor
Moore	A Pilot Study of Patient Goals in the Management of Malignant Bowel Obstruction in Recurrent Cancer	NorthShore Breast and Ovarian Research Program: Concept/Grant Award
Nelson	Evaluation of the Effect of Progestins and Vitamin D on Inflammatory and Oxidative Chemopreventive Endpoints in the Fallopian Tube	NorthShore Research Institute/ Medical Group Grant Program
Rodriguez	GOG-218: A Phase III Trial of Carboplatin and Paclitaxel Plus Placebo vs. Carboplatin and Paclitaxel plus Concurrent Bevacizumab (NSC #704865, IND #7921) Followed by Placebo, vs. Carboplatin and Paclitaxel Plus Concurrent and Extended Bevacizumab, in Women with Newly Diagnosed, Previously Untreated, Stage III or IV Epithelial Ovarian, Primary Peritoneal Cancer	NorthShore
Rodriguez	GOG-0214: Phase II Double-Blind Randomized Trial Evaluating the Biologic Effect of Levonorgestrel on the Ovarian Epithelium in Women at High Risk for Ovarian Cancer	NorthShore
Rodriguez	Development of a Progestin-Based Pharmacologic Approach for the Effective Prevention of Ovarian Cancer	The Auxiliary of NorthShore University HealthSystem
Rodriguez	Proteomic Profiling of Racial Disparities in Endometrial Cancer (contract under EH12-150)	The Henry M. Jackson Foundation for the Advancement of Military Medicine
Rodriguez	Proteomic and Molecular Profiles Associated with Endometrial Carcinogenesis (contract under EH12-150)	The Henry M. Jackson Foundation for the Advancement of Military Medicine
Rodriguez	A Phase III, Randomised, Double-Blind, Placebo Controlled, Multicentre Study of Olaparib Maintenance Monotherapy in BRCA Mutated Relapsed Ovarian Cancer Patients Who Are in Complete or Partial Response Following Platinum-Based Chemotherapy, D0816C00002	AstraZeneca
Rodriguez	UC13-1235: A Randomized Placebo-Controlled Phase II Trial of Metformin in Conjunction with Chemotherapy Followed by Metformin Maintenance Therapy in Advanced-Stage Ovarian, Fallopian Tube and Primary Peritoneal Cancer	University of Chicago
Rodriguez	Investigation of Progesterone-Mediated Mechanisms of Cancer Prevention in the Fallopian Tube: Comparison of Fallopian Tubes from Postpartum Vs. Non-Gravid Women	NorthShore
Rodriguez	Immortalization of Human Fallopian Tube Epithelial Cells Using Conditional Reprogramming	NorthShore
Rodriguez	Outpatient Platinum Desensitization Protocol for the Treatment of Gynecologic Malignancies	NorthShore
Rodriguez	NCI 9671: Exceptional Responders Pilot Study: Molecular Profiling of Tumors from Cancer Patients Who Are Exceptional Responders	National Cancer Institute (NCI)
Rodriguez	Biosafety Application: Generation of Stable Fallopian Tube Epithelial Cell Lines with Mutant p53 Using Lenti-viral Infection	NorthShore

Investigator	Clinical Trial	Sponsor
Rodriguez	Effectiveness of a Multivariable Algorithm (PROMISS) in Predicting Ovarian Malignancy in Women with a Pelvic Mass	PROMISS Diagnostics
Rodriguez	Endoscopic and Karyometric Assessment of Fallopian Tube Health for Ovarian Cancer Prevention	The University of Arizona/ DOD

## DIVISION OF GYNECOLOGICAL PAIN AND MINIMALLY INVASIVE SURGERY

Hellman	Novel Approaches to Investigation of Menstrual Pain	NorthShore
Hellman	Neurophysiological Diagnostics for Menstrual Pain (R21)	NIH
Hellman	Noninvasive Imaging of Uterine Physiology to Improve Treatment for Dysmenorrhea	NICHHD
Hellman	Mechanistic Characterization of Uterine Pain (MCUP) to Improve Diagnosis and Treatment for Dysmenorrhea (R01HD098193-01)	NIH
Senapati	Registry for Gynecological Patients	NorthShore
Tu	Deciphering the Hormonal and Nociceptive Mechanisms Underlying Bladder Pain (1R01DK100368-01)	NIH
Tu	Deciphering the Hormonal and Nociceptive Mechanisms Underlying Bladder Pain (Supplement to R01DK100368, EH13-094)	NIH
Tu	Interstitial Cystitis: Examination of the Central Autonomic Network (R01)	Medical College of Wisconsin/ NIH
Tu	Recruitment Registry for the Tu/Hellman Research Lab	NorthShore
Tu	Early Menstrual Pain Impact of Multisensory Hypersensitivity (1R01HD096332-01)	NIH
Tu	Examining the Role of Improved NSAID Management in Treating Dysmenorrhea	NorthShore

## DIVISION OF MATERNAL-FETAL MEDICINE

Borders	Social Conditions in Pregnancy and Fetal Development	NIH/ Northwestern University
Borders	Understanding Socioeconomic Disparities in Perinatal Risk: The Role of Epigenetic and Transcriptional Regulation in the Placenta	NIH on Minority Health/ Northwestern University
Borders	Psychosocial Intervention, Maternal Inflammation and Birth Outcomes: Centering vs. Routine Prenatal Care (PIINC)	NIH
Dinsmoor	A Randomized Trial to Prevent Congenital Cytomegalovirus (CMV) Infection	Northwestern University/NIH
Dinsmoor	Prevalence of CMV Infection in Placentas of Small for Gestational Age (SGA) Neonates	NorthShore
Keenan-Devlin	Interactions Between Perinatal Stress and Breast-feeding: Unpacking a Mechanism of Disparity	NorthShore Research Institute/ NorthShore Medical Group Pilot Grant Program
Ouyang	Evaluation of Perinatal Drug Screening at NorthShore	NorthShore
Ouyang	Optimizing Outcomes in Multifetal Gestations: Does Identification of Asymptomatic Cervical Dilation Improve Outcomes Compared to Those Presenting with Symptomatic Preterm Labor	NorthShore
Ouyang	Prevalence of CMV Infection in Neonates with Echo-genic Bowel	The University of Chicago
Plunkett	An Observational Cohort Study to Evaluate Measures of Quality of Obstetric Care	NorthShore
Plunkett	Antenatal Late Preterm Steroids (ALPS): A Randomized Placebo-Controlled Trial	NorthShore

## DIVISION OF MATERNAL-FETAL MEDICINE *continued*

Investigator	Clinical Trial	Sponsor
Plunkett	A Randomized Trial of Fetal ECG ST Segment and T Wave Analysis as an Adjunct to Electronic Fetal Heart Rate Monitoring (STAN)	National Heart, Lung, and Blood Institute (NHLBI)/ Genetic Association Information Network (GAIN) Foundation for the NIH
Plunkett	An Observational Study of Hepatitis C Virus in Pregnancy	Northwestern University/NIH
Plunkett	Induction in Nulliparous Women at 39 Weeks to Prevent Adverse Outcomes: A Randomized Controlled Trial. A Randomized Trial of Induction vs. Expectant Management (ARRIVE) (Part of Maternal-Fetal Network)	National Institute of Child Health and Human Development (NICHD)
Plunkett	Obesity Is Under-Diagnosed and Under-Treated Among Reproductive Age Women	NorthShore
Plunkett	Exploration of Barriers Facing Physicians in Diagnosing and Treating Obesity	NorthShore
Plunkett	NICHD Maternal-Fetal Network (Renewal of EH10-206)	NIH/NICHD/ Northwestern University
Plunkett	Obstetric Research Registry	NorthShore
Plunkett	The Association Between Antihypertensive Therapy and Peripartum Depression	NorthShore
Plunkett	A Randomized Trial of Pessary and Progesterone for Preterm Prevention in Twin Gestation with a Short Cervix (PROSPECT)	Northwestern University
Plunkett	Dermabond Compared with Steri-Strips to Reduce Wound Complications in Pfannenstiel Incision Closure After Cesarean Delivery	NorthShore
Plunkett	Fetal Cardiovascular Overgrowth and Maternal Diabetes: A Long-Term Follow-Up Study	NorthShore
Plunkett	Exploring the Role of Complementary and Integrative Health Care Providers in the Diagnosis and Treatment of Obesity	NorthShore
Plunkett	Gestational Weight Gain in Women With and Without Pregestational Diabetes	NorthShore
Plunkett	A Randomized Trial of Pessary in Singleton Pregnancies with a Short Cervix (TOPS)	NICHD
Plunkett	Tranexamic Acid for the Prevention of Obstetrical Hemorrhage After Cesarean Delivery: A Randomized Controlled Trial	NIH/George Washington University/ Northwestern University
Plunkett	Depressive Symptoms in Maternal Obese Patients Compared to the Non-Obese Patient Population	NorthShore
Plunkett	MARS: Magnetic Resonance Study: A Novel Assessment of Placental Function	NorthShore
Plunkett	A Randomized Trial of Continuous Positive Airway Pressure (CPAP) for Sleep Apnea in Pregnancy (SLEEP)	NIH
Plunkett	A Randomized Trial of 17 Alpha-Hydroxyprogesterone Caproate for Prevention of Preterm Birth in Nulliparous Women with a Short Cervix	Northwestern University/NIH/ National Institute of Child Health and Human Development (NICHD)
Plunkett	Outcomes of Vaginal and Cesarean Delivery in Twins Delivering at Less than 34 Weeks Gestation	NorthShore
Robinson	Are Women Who Have a Postpartum Hemorrhage with a Twin Delivery at Increased Risk of Postpartum Hemorrhage in a Subsequent Singleton Pregnancy?	NorthShore

## DIVISION OF OBSTETRICS

Investigator	Clinical Trial	Sponsor
Hirsch	Autophagy in the Genesis and Prevention of Labor	March of Dimes
Hirsch	The Molecular Pathogenesis of Health Disparities in Infection-Induced Preterm Birth (R01HD041689)	NIH
Hirsch	The Role of Membrane Progesterone Receptors in Primary Myometrial Cells	NorthShore/ March of Dimes

## DIVISION OF UROGYNECOLOGY AND RECONSTRUCTIVE SURGERY

Investigator	Clinical Trial	Sponsor
Gafni-Kane	A Prospective, Nonrandomized, Parallel Cohort, Multicenter Study of Xenform vs. Native Tissue for the Treatment of Women with Anterior/Apical Pelvic Organ Prolapse, Protocol U9920	Boston Scientific
Gafni-Kane	Long-Term Outcomes of Uterosacral Ligament Suspension vs. Sacrospinous Ligament Suspension with Mesh	NorthShore
Gafni-Kane	Narcotic Use in Ambulatory Gynecologic Surgery	NorthShore
Gafni-Kane	Bladder Capacity as an Objective Measure of Response to Intravesical Treatment of Newly Diagnosed Interstitial Cystitis: A Prospective, Randomized Trial	NorthShore
Goldberg	Time to First Bowel Movement Following Pelvic Reconstructive Surgery: A Randomized Controlled Trial	NorthShore
Goldberg	The Risk of Cognitive Impairment in Patients Starting Anticholinergic Medications to Treat Overactive Bladder: A Prospective Trial	NorthShore
Lozo	Methenamine Hippurate vs. Suppressive Antibiotics in the Prevention of Recurrent Urinary Tract Infections	NorthShore
Lozo	What are the Factors that Influence Continuation or Termination of Overactive Bladder Treatment with Intravesical Botox?	NorthShore
Rostami Nia	Rectal Hypermobility and Lack of Support in Women with Obstructed Defecation	NorthShore
Rostami Nia	Success Predictive Factors of PTNS Therapy for Overactive Bladder Symptoms	NorthShore
Rostami Nia	Dynamic Ultrasound of Bladder and Urethra in Women with Urinary Incontinence, Sitting and Standing Position	NorthShore
Rostami Nia	Implementing Machine Learning on Urogynecology Data Set to Create Treatment Outcome Prediction Model for Chronic and Refractory Conditions	NorthShore
Sand	Functional Bladder Capacity as an Objective Measure of Response to Intravesical Treatment of Newly Diagnosed Interstitial Cystitis: A Prospective, Randomized Trial	NorthShore
Sand	A Prospective, Nonrandomized, Parallel Cohort, Multicenter Study of Uphold LITE vs. Native Tissue for the Treatment of Women with Anterior/Apical Pelvic Organ Prolapse	Boston Scientific
Sand	A Double-Blind, Randomized, Controlled Trial Comparing the Safety and Efficacy of AMDC-USR with Placebo in Female Subjects with Stress Urinary Incontinence, Clinical Investigation Plan No. 13-003	Cook MyoSite, Incorporated
Sand	The Role of the Integration of Tissue Components in Pelvic Floor Tissue Biomechanics Associated with Pelvic Organ Prolapse	NorthShore
Sand	What Are the Characteristics of Patients who Continue Overactive Bladder Medication Following Third Line Overactive Bladder Treatment (Botox, Sacral Neuromodulation and Posterior Tibial Nerve Stimulation)	NorthShore
Sand	A Phase II, Multicenter, Randomized, Double-Blind, Placebo-Controlled, Single Treatment, 2-stage, Dose-Finding Study Evaluating the Efficacy and Safety of BOTOX® Intravesical Instillation in Participants with Overactive Bladder and Urinary Incontinence, Protocol 1839-201-021	Allergan Sales, LLC.

## 2018 Department of Obstetrics and Gynecology

# Staff

The Department is growing and active. We realized important growth in new members in 2018. Each is playing a critical role in reaching our goals of outstanding clinical care, leading academics and recognized research. In addition, members provide important service through our committees.

## Department Growth

**Raanan Alter, MD**, received his medical degree from Northwestern University Feinberg School of Medicine and completed his residency in Obstetrics and Gynecology at Loyola University. He is pursuing fellowship training with the University of Chicago/NorthShore Gynecologic Oncology program.

**Brian Carroll, DO**, received his medical degree from University of New England School of Osteopathic Medicine and completed his residency in Obstetrics and Gynecology at MWU/OPTI: Presence Resurrection Healthcare Consortium. He is currently in practice in the NorthShore Medical Group with Drs. Dori Becker, Therese Hughes, Rebecca Jacobson, Brenda Kim and Leslie Oshin.

**Jordan Cavanaugh, MSW, LCSW**, received her Master of Social Work degree from Loyola University Chicago. She is a licensed clinical social worker and is serving as a Perinatal Family Support Specialist in the Perinatal Family Support Center.

**Samantha de los Reyes, MD**, received her medical degree from Pennsylvania State University College of Medicine and completed her residency in Obstetrics and Gynecology from Johns Hopkins University. She is currently pursuing fellowship training in the NorthShore University HealthSystem/University of Chicago Maternal-Fetal Medicine program.

**Sonia Dutta, MD**, received her medical degree from New York University School of Medicine, completed her residency in Obstetrics and Gynecology from Johns Hopkins University and her fellowship in Female Pelvic Medicine and Reconstructive Surgery from University of California, Irvine. She is currently in practice with the NorthShore Medical Group—Urogynecology and Reconstructive Surgery.

**Elizabeth Elliott, AM, LCSW**, received her Master of Arts degree in Social Work from University of Chicago, School of Social Service Administration. She is a licensed clinical social worker and is serving as a Perinatal Family Support Specialist in the Perinatal Family Support Center.

**Jennifer Hirshfeld-Cytron, MD**, received her medical degree from University of Minnesota, completed her residency in Obstetrics and Gynecology from University of Chicago Hospitals and her fellowship in Reproductive Endocrinology and Infertility from Northwestern University Hospital. She is currently in practice with Fertility Centers of Illinois.

**Caitlin MacGregor, MD**, received her medical degree from Northwestern University Feinberg School of Medicine and completed her residency in Obstetrics and Gynecology from Brown University, Women and Infants Hospital. She is currently pursuing fellowship training in the NorthShore University HealthSystem/University of Chicago Maternal-Fetal Medicine program.

**Omar Nelson, PhD**, received his PhD in neuroscience from University of Texas Southwestern Medical Center at Dallas. He is a research scientist working closely with Dr. Gustavo Rodriguez in the Department within the Division of Gynecologic Oncology.

**Autumn Perrault, RN, MSN**, received her bachelor's degree in nursing from Calvin College and her Master of Nursing degree from Western Governors University. She is serving as a Quality Manager for the Illinois Perinatal Quality Collaborative (ILPQC) in the Division of Maternal-Fetal Medicine with Dr. Ann Borders.

**Joseph Pincus, MD**, received his medical degree from Northwestern University Feinberg School of Medicine and completed his residency in Obstetrics and Gynecology from Montefiore Medical Center/Albert Einstein College of Medicine. He is pursuing Urogynecologic fellowship training in the NorthShore Division of Urogynecology and Reconstructive Surgery.

**Elizabeth Puscheck, MD**, received her medical degree from Washington University Medical School, completed her residency in Obstetrics and Gynecology from Barnes-Jewish Hospital, and completed her fellowship in Reproductive Endocrine, Infertility and Genetics from Medical College of Georgia. She is currently in practice with InVia Fertility.

**Sheri Schreiber, MD**, received her medical degree from University of Health Sciences/The Chicago Medical School and completed her residency in Obstetrics and Gynecology from Columbus-Cabrini Health System. She is currently practicing in the Lake County area.

**Erin Tran, MD**, received her medical degree from Dartmouth Medical School, completed her residency in Obstetrics and Gynecology from Brigham and Women's/Massachusetts General Hospitals and her fellowship in Maternal-Fetal Medicine from University of California, San Francisco. She is currently in practice in the NorthShore Medical Group—Maternal-Fetal Medicine.



## Service to the Department Committees

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### Executive Committee

Susan Ashby, MD  
Carol Ellman, MD  
Roger Goldberg, MD, MPH  
Emmet Hirsch, MD  
Rebecca Jacobson, MD  
Marion Jelcz, MD  
Kristin Jones, DO  
Sigal Klipstein, MD  
Gaye Koconis, CNM  
Edward Lee, MD  
Scott MacGregor, DO  
Jeremy Miller, MD  
Mark Neerhof, DO  
Beth Plunkett, MD, MPH  
Barrett Robinson, MD, MPH  
Gustavo Rodriguez, MD  
H. Jacob Saleh, MD  
Sangeeta Senapati, MD, MS  
Richard Silver, MD<sup>1</sup>  
Erica Smith, MD  
Frank Tu, MD, MPH  
Arnold Wagner, MD  
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### Gynecologic Quality Committee

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Carol Ellman, MD  
Elizabeth Forbes, MD  
Pamela Goodwin, MD  
Susan Kramer, MD  
Svetlana Lozo, MD, MPH  
Jeremy Miller, MD<sup>1</sup>  
Mary Mulcrone, RN<sup>4</sup>  
Frank Tu, MD, MPH  
Megan Valassis, MD  
Mary Wehmeyer, RN<sup>4</sup>

Ex-Officio:

Richard Silver, MD

### Obstetrics Multidisciplinary Performance Improvement Committee

David Alspach, MD<sup>3</sup>  
Gabriella Clay, RN  
Ian Grable, MD, MPH  
Linda Holt, MD  
Marion Jelcz, MD  
Karen Kelly, PharmD<sup>7</sup>  
Edward Lee, MD  
Jeffrey Lerch, MD  
Anita Little, RN  
Jeremy Miller, MD  
Mary Mulcrone, RN<sup>4</sup>  
Mark Neerhof, DO<sup>2</sup>  
Ann Newkirk, RN<sup>2</sup>  
Peggy Ochoa, RN  
Veronica Priest, RN  
Jennifer Roeder, RN  
Myra Sabini, BSN,  
RNC-OB, C-EFM  
Mona Shah, MPH<sup>10</sup>  
Mary Wehmeyer, RN<sup>8</sup>  
Teresa Zeller, RN

### Obstetrics Practice Committee

Kathleen Arrecis, RN  
Linda Given-Welch, CNM, MS  
Linda Holt, MD  
Rebecca Jacobson, MD  
Marion Jelcz, MD  
Kristin Jones, DO  
Karen Kelly, PharmD<sup>7</sup>  
Jo Kim, PhD  
Edward Lee, MD  
Halley Martin, RN  
Mark Neerhof, DO  
Ann Newkirk, RN  
Katherine Packard, RN  
Autumn Perrault, RN  
Veronica Priest, RN  
Jennifer Roeder, RN  
Lauren Thorpe, MD  
Shelly Tien, MD, MPH<sup>1</sup>  
Miriam Whiteley, MD<sup>6</sup>  
Lawrence Yeager, MD

### Perinatal Quality Review Committee

Bernhard Allgaier, MD<sup>9</sup>  
Kathleen Arrecis, RN  
Leilah Backhus, MD  
Linda Ernst, MD<sup>6</sup>  
Marion Jelcz, MD  
Peggy King, RN<sup>4</sup>  
Debora Lesnick, CNM  
Dietra Millard, MD<sup>9</sup>  
Jeremy Miller, MD  
Mary Mulcrone, RN<sup>4</sup>  
Sarah Nee, RN  
Ann Newkirk, RN  
David Ouyang, MD  
Laura Pearlman, MD  
Barrett Robinson, MD, MPH<sup>1</sup>  
Myra Sabini, BSN,  
RNC-OB, C-EFM  
Prerna Suri, MD  
Susan Warner, MD  
Mary Wehmeyer, RN<sup>8</sup>  
Miriam Whiteley, MD<sup>6</sup>

Ex-Officio:

Michael Caplan, MD  
Richard Silver, MD  
Mark Neerhof, DO

1 Chair

2 Co-Chair

3 Anesthesiology

4 Risk Management

5 Pathology

6 Family Medicine

7 Pharmacy

8 Quality Improvement

9 Neonatology

10 Infection Control

Obstetricians/Gynecologists, Certified Nurse Midwives, Sub-Specialists and Doctoral Researchers of NorthShore University HealthSystem

**GYNECOLOGIC ONCOLOGY**

**Raanan Alter, MD\***  
**Claire Hoppenot, MD\***  
**Mary Tilley Jenkins Vogel, MD**  
**Carolyn Kirschner, MD**  
**Isabel Lazo, MD\***  
**Elena Moore, MD**  
**Omar Nelson, PhD**  
**Gustavo Rodriguez, MD**

Kellogg Cancer Center  
 2650 Ridge Avenue  
 Evanston, IL 60201  
 (847) 570-2639

9650 Gross Point Road, Ste. 3900  
 Skokie, IL 60076  
 (847) 570-2639

757 Park Avenue West  
 Highland Park, IL 60035  
 (847) 570-2639

2180 Pfingsten Road  
 Glenview, IL 60026  
 (847) 570-2639

**John Knaus, DO**  
 5747 Dempster Street, Ste. 100  
 Morton Grove, IL 60053  
 (847) 663-1030

**GYNECOLOGICAL PAIN AND MINIMALLY INVASIVE SURGERY**

**Gerald Gebhart, PhD**  
**Kevin Hellman, PhD**  
**Folabomi (Bomi) Oladosu, PhD**  
**Sangeeta Senapati, MD, MS**  
**Frank Tu, MD, MPH**

9650 Gross Point Road, Ste. 3900  
 Skokie, IL 60076  
 (847) 926-6544

757 Park Avenue West, Ste. 3870  
 Highland Park, IL 60035  
 (847) 926-6544

**GYNECOLOGY**

**Joyce Chams, MD**  
 2601 Compass Road, Ste. 115  
 Glenview, IL 60026  
 (847) 998-4637

**Anna Bonadonna, MD**  
**Margaret Salamon, MD**  
 9650 Gross Point Road, Ste. 3900  
 Skokie, IL 60076  
 (847) 677-1400

**MATERNAL-FETAL MEDICINE**

**Ann Borders, MD, MSc, MPH**  
**Lena Braginsky, MD\***  
**Samantha de los Reyes, MD\***  
**Ian Grable, MD, MPH**  
**Lauren Keenan-Devlin, PhD**  
**Patricia Lee King, PhD**  
**Caitlin MacGregor, MD\***  
**Scott MacGregor, DO**  
**Mark Neerhof, DO**  
**David Ouyang, MD**  
**Beth Plunkett, MD, MPH**  
**Barrett Robinson, MD, MPH**  
**Javier Rodriguez Kovacs, MD\***  
**Gina Russano, CNM**  
**Richard Silver, MD**  
**Shelly Tien, MD, MPH**  
**Erin Tran, MD**

2650 Ridge Avenue, Ste. 1420  
 Evanston, IL 60201  
 (847) 570-2860

**OBSTETRICS/GYNECOLOGY**

**Valerie Allen, MD**  
**Suzanne Ashby, DO**  
**Leilah Backhus, MD**  
**Emmet Hirsch, MD**  
**Elizabeth Marsh, MD**  
**Priya Mishra, PhD**  
**Charla Simon, MD**  
**Prerna Suri, MD**  
**Kerry Swenson, MD, PhD**  
**Lawrence Yeager, MD**

9650 Gross Point Road, Ste. 1900  
 Skokie, IL 60077  
 (847) 933-1773

6810 N. McCormick Boulevard  
 Lincolnwood, IL 60712  
 (847) 933-1773

1000 Central Street, Ste. 620  
 Evanston, IL 60201  
 (847) 933-1773

1515 Sheridan Road, Ste. 31A  
 Wilmette, IL 60091  
 (847) 933-1773

**Mary Conte, MD**  
**Joanna Horwitz, MD**  
**Kristin Jones, DO**  
**Lauren Thorpe, MD**

6450 W. Touhy Avenue  
 Niles, IL 60714  
 (847) 583-1000

**OBSTETRICS/GYNECOLOGY**

*(continued)*

**Carol Ellman, MD**  
**Elizabeth Forbes, MD**  
**Amy Henriott, MD**  
**Stephanie Heraty, MD**  
**Karyn Grimm Herndon, MD**  
**Narissa Jill Hoprasart, MD**  
**Melissa Keene, MD**  
**Jeremy Miller, MD**  
**Ronald Miller, MD**  
**Miriah Plawer, MD**  
**Linda Given Welch, CNM**

1000 Central Street, Ste. 700  
 Evanston, IL 60201  
 (847) 869-3300

3633 W. Lake Avenue, Ste. 204  
 Glenview, IL 60026  
 (847) 869-3300

**Pamela Goodwin, MD**  
**Jennifer Jaume, CNM**  
**Kim Johnson, MD**  
**Gaye Koconis, CNM**  
**Debora Lesnick, CNM**  
**Mary Rigoni, CNM**  
**Jean Ruth, MD**  
**H. Jacob Saleh, MD**  
**Sarah Sumagin, CNM**  
**Barbara Zimmerman-Minnich, CNM**

328 Linden Avenue  
 Wilmette, IL 60091  
 (847) 475-1224

2550 Compass Road, Unit J  
 Glenview, IL 60026  
 (847) 998-9600

**Cheryl Axelrod, MD**  
**Claudia del Busto, MD**  
**Marcia Krause, MD**  
**Laura Pearlman, MD, MBA**

4905 Old Orchard Center,  
 Ste. 200  
 Skokie, IL 60077  
 (847) 673-3130

**OBSTETRICS/GYNECOLOGY**

*(continued)*

**Kristin Dold Bennett, DO**  
**Marion Jelcz, MD**  
**Kenneth Nelson, MD**  
**Ann Schufreider, MD**

4905 Old Orchard Center, Ste 200  
 Skokie, IL 60077  
 (847) 869-5800

135 N. Arlington Heights Road,  
 Ste. 101  
 Buffalo Grove, IL 60089  
 (847) 537-5200

**Jennifer J. Kim, MD**  
**Chimene Pellar, MD**  
**Susan L. Warner, MD**

1000 Central Street, Ste. 717  
 Evanston, IL 60201  
 (847) 864-1200

2501 Compass Road, Ste. 130  
 Glenview, IL 60026  
 (847) 864-1200

**Judith Cothran, MD**  
 4905 Old Orchard Center, Ste. 200  
 Skokie, IL 60077  
 (847) 923-6155

45 W. 111th Street  
 3rd Floor Clinics  
 Chicago, IL 60628  
 (773) 995-3466

**Dori Becker, MD**  
**Brian Carroll, DO**  
**Therese Hughes, MD**  
**Rebecca Jacobson, MD**  
**Brenda Kim, DO**  
**Leslie Oshin, MD**

757 Park Avenue West, Ste. 2800  
 Highland Park, IL 60035  
 (847) 432-1558

915 S. Waukegan Road, Ste. 200  
 Lake Forest, IL 60045  
 (847) 432-1558

650 W. Lake Cook Road  
 Buffalo Grove, IL 60089  
 (847) 432-1558

7900 Rollins Road, Ste. 1100  
 Gurnee, IL 60031  
 (847) 432-1558

**OBSTETRICS/GYNECOLOGY**

*(continued)*

**Carl Buccellato, MD**  
**Joby George, MD**  
**Susan Kramer, MD**  
**Edward Lee, MD**  
**Erica Smith, MD**  
**Mary Faith Terkildsen, MD**  
**Megan Valassis, MD**

225 N. Milwaukee Avenue  
 Vernon Hills, IL 60061  
 (847) 941-7600

49 S. Waukegan Road, Ste. 100  
 Deerfield, IL 60015  
 (847) 941-7600

757 Park Avenue West, Ste. 2800  
 Highland Park, IL 60035  
 (847) 941-7600

15 Tower Court, Ste. 300  
 Gurnee, IL 60031  
 (847) 941-7600

1329 N. Wolf Road  
 Mount Prospect, IL 60056  
 (847) 941-7600

**Jeffrey Lerch, MD**  
 777 Park Avenue West  
 Highland Park, IL 60035  
 (847) 480-3714

**Alla Bodner, MD**  
**Nicole Brady, CNP**  
**Joseph Capezio, MD**  
**Andrew Deutsch, MD**  
**Deborah Johnson, CNM**  
**Carla Loly, MD**  
**Dorina Scaunas, MD**  
**Julie Snow, MD**  
**Soujanya Tummuru, MD**

1475 E. Belvidere Road, Ste. 216  
 Grayslake, IL 60030  
 (847) 692-9234

1875 Dempster Street, Ste. 245  
 Park Ridge, IL 60068  
 (847) 692-9234

**Dianna Kim, MD**  
**Sarah Wong, MD**  
 250 East Center Drive, Ste. 101  
 Vernon Hills, IL 60061  
 (847) 918-7050

**OBSTETRICS/GYNECOLOGY**

*(continued)*

**Karen Mass, MD**  
 900 N. Westmoreland Road,  
 Ste. 223  
 Lake Forest, IL 60045  
 (847) 295-0433

1475 E. Belvidere Road, Ste. 212  
 Grayslake, IL 60030  
 (847) 295-0433

**Robert Rosenberg, MD**  
 1170 E. Belvidere Road, Ste. 102  
 Grayslake, IL 60030  
 (847) 548-9999

**Sheri Schreiber, MD**  
 222 S. Greenleaf Street, Ste. 112  
 Gurnee, IL 60031  
 (847) 336-8472

**REPRODUCTIVE ENDOCRINOLOGY  
 AND INFERTILITY**

**Anne Borkowski, MD**  
 4250 Dempster Street  
 Skokie, IL 60076  
 (847) 763-8850

**Susan Davies, MD**  
 2640 Patriot Boulevard, Ste. 260  
 Glenview, IL 60026  
 (847) 972-0300

**Sigal Klipstein, MD**  
**Elizabeth Puscheck, MD**  
 1585 N. Barrington Road, Ste. 406  
 Hoffman Estates, IL 60169  
 (847) 884-8884

1535 Lake Cook Road, Ste. 506  
 Northbrook, IL 60062  
 (847) 884-8884

880 W. Central Road, Ste. 3400  
 Arlington Heights, IL 60005  
 (847) 884-8884

**REPRODUCTIVE ENDOCRINOLOGY  
 AND INFERTILITY**

*(continued)*

**Jennifer Hirshfeld-Cytron, MD**  
**Laurence Jacobs, MD**  
**Brian Kaplan, MD**  
**Edward L. Marut, MD**  
**John Rapisarda, MD**  
**Allison Rodgers, MD**

767 Park Avenue West, Ste. 190  
 Highland Park, IL 60035  
 (847) 433-4400

3703 W. Lake Avenue, Ste. 106  
 Glenview, IL 60026  
 (847) 998-8200

135 N. Arlington Heights Road,  
 Ste. 195  
 Buffalo Grove, IL 60089  
 (847) 215-8899

2260 W. Higgins Road, Ste. 200  
 Hoffman Estates, IL 60169  
 (847) 843-1510

2592 E. Grand Avenue, Ste. 208  
 Lindenhurst, IL 60046  
 (847) 356-0483

900 N. Kingsbury Street, Ste. RW6  
 Chicago, IL 60610  
 (312) 222-8230

**Shweta Nayak, MD**  
**John Rinehart, MD, PhD, JD**

2500 Ridge Avenue, Ste. 308  
 Evanston, IL 60201  
 (847) 869-7777

233 E. Erie Street, Ste. 307  
 Chicago, IL 60611  
 (312) 337-1611

1535 Lake Cook Road, Ste. 102  
 Northbrook, IL 60062  
 (224) 261-8710

2425 W. 22nd Street, Ste. 200  
 Oak Brook, IL 60523  
 (630) 954-0054

5851 W. 95th Street, Ste. 117  
 Oak Lawn, IL 60453  
 (708) 741-7012

471 W. Army Trail Road, Ste. 105  
 Bloomingdale, IL 60108  
 (630) 221-8131

**UROGYNECOLOGY**

**Sonia Dutta, MD**  
**Adam Gafni-Kane, MD**  
**Roger Goldberg, MD, MPH**  
**Svjetlana Lozo, MD, MPH\***  
**Joseph Pincus, MD\***  
**Ghazaleh Rostami Nia, MD,**  
**MSPH\***  
**Peter Sand, MD**

225 N. Milwaukee Avenue,  
 Ste. 1500  
 Vernon Hills, IL 60061  
 (224) 251-2374

9650 Gross Point Road, Ste. 3900  
 Skokie, IL 60076  
 (224) 251-2374

2050 Pflingsten Road, Ste. 128  
 Glenview, IL 60026  
 (224) 251-2374

757 Park Avenue West, Ste. 3870  
 Highland Park, IL 60035  
 (224) 251-2374

15 Tower Court, Ste. 300  
 Gurnee, IL 60031  
 (224) 251-2374

**Sandjay Gandhi, MD**  
 660 N. Westmoreland Road  
 Lake Forest, IL 60045  
 (847) 234-1100

**Marko Jachtowycz, MD**  
 5747 Dempster Street, Ste. 100  
 Morton Grove, IL 60053  
 (847) 663-1030

**Michael Noone, MD**  
**Brett Vassallo, MD**  
 1875 W. Dempster, Ste. 665  
 Park Ridge, IL 60068  
 (847) 825-1590

\*2018 Fellow

**Department of Obstetrics and Gynecology**

Walgreen Building, Ste. 1507  
2650 Ridge Avenue  
Evanston, IL 60201  
(847) 570-2521

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NorthShore Evanston Hospital



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NorthShore Highland Park Hospital



NorthShore Skokie Hospital

**NorthShore Evanston Hospital**

2650 Ridge Avenue, Evanston, IL 60201  
(847) 570-2000

**NorthShore Glenbrook Hospital**

2100 Pfingsten Road, Glenview, IL 60026  
(847) 657-5800

**NorthShore Highland Park Hospital**

777 Park Avenue West, Highland Park, IL 60035  
(847) 432-8000

**NorthShore Skokie Hospital**

9600 Gross Point Road, Skokie, IL 60076  
(847) 677-9600

**NorthShore Medical Group**

1301 Central Street, Evanston, IL 60201  
(847) 570-5235

**NorthShore Foundation**

1033 University Place, Suite 450, Evanston, IL 60201  
(224) 364-7200

**NorthShore Research Institute**

1001 University Place, Evanston, IL 60201  
(224) 364-7100