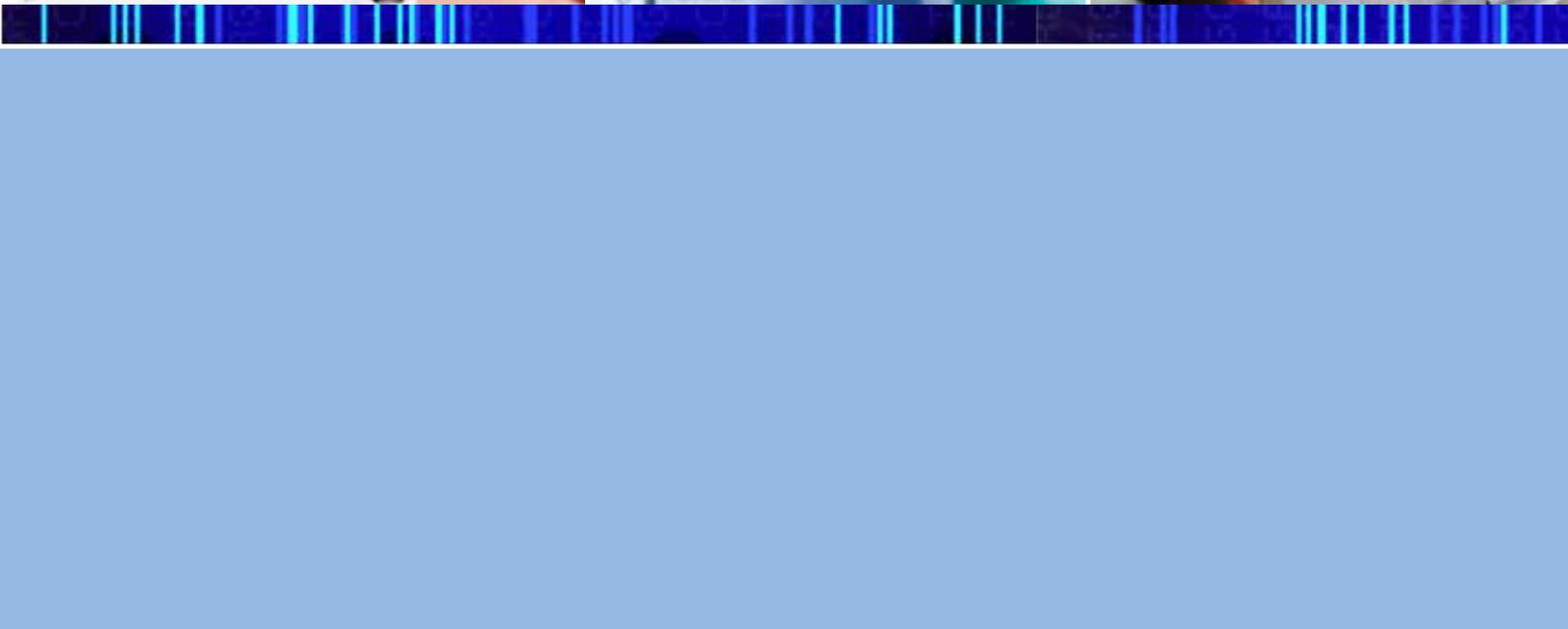
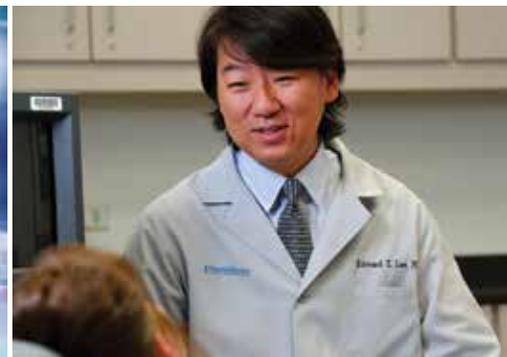


# Department of Obstetrics and Gynecology

2014 Annual Report



# Message from the Chairman



Among the many accomplishments by our Department membership in 2014, the collective effort in support of “translational research” has been an unambiguous highlight. This form of inquiry includes both laboratory experiments and clinical trials whose central goal is the creation of new knowledge that can be applied directly to patient care. Whether measured by successful grant submissions and funded proposals, or dissemination of results through peer-reviewed presentations and publications, a select group of our colleagues deserve our congratulations. It is for this reason that their work is being

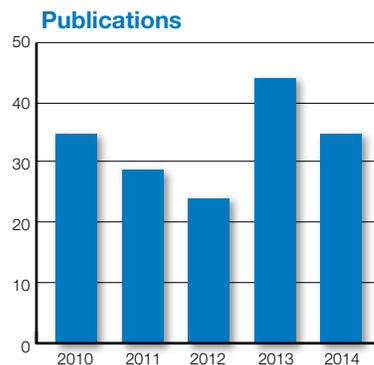
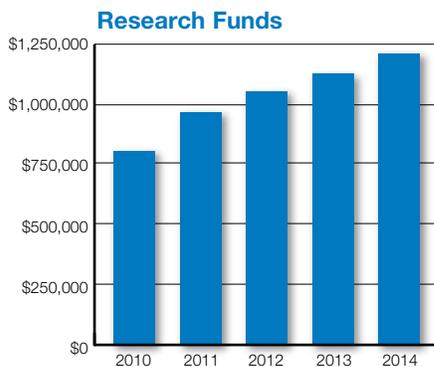
highlighted in this annual report. It is notable that every year since 2010 we have grown our total extramural research funding through both new applications and renewals. To understand why this is such a favorable trend in today’s research environment, a cursory review of the relevant success rates for grant funding tells the story. Of the primary federal entities to which our principal investigators submit most of their applications (National Institute of Child Health and Human Development, National Institute of Diabetes and Digestive and Kidney Diseases, National Cancer Institute and Department of Defense), experience from 2014 reveals the following: About half of all grant proposals submitted nationally are “triaged” and do not receive a priority score; they are immediately out of the running and can only be resubmitted with revisions at a later date. Of the remaining 50 percent, only about one-tenth achieve a score that could lead to funding—and those receiving a favorable decision for support routinely include a budget reduction in the dollar amount that is ultimately awarded. Persistence in this funding environment is daunting, requiring an equal measure of energy, intellect and thick skin! The clinician-scientists in our Department have all of these characteristics.

Once their research is completed, it must be followed by timely dissemination and publication.

To present data at relevant regional and national meetings and publish findings in journals with sufficient stature and readership also requires that results and corresponding analyses stand up to the test of peer review. Our Department researchers are also doing well in these categories, with 163 articles in our specialty’s journals over the past five years and 355 presentations in the same time frame. I invite you to see the details of this work throughout this annual report to better understand how we improve care for the women and families we serve in this manner. Innovative clinical care through translational research is the paradigm to which we aspire and distinguishes our Department from many of our peers. My heartfelt thanks to our colleagues who do this work and to the Department members whose patients are given the opportunity to participate in this leading-edge research.

**Richard K. Silver, MD**

Chairman and Chief Academic Officer  
 Department of Obstetrics and Gynecology  
 NorthShore University HealthSystem  
 Clinical Professor and Associate Dean  
 University of Chicago Pritzker School of Medicine



## Clinical Care

### Division Reports

Obstetrics	1
Gynecology	2
Gynecologic Oncology	3
Maternal-Fetal Medicine	4
Reproductive Endocrinology and Infertility	5
Gynecological Pain and Minimally Invasive Surgery	6
Urogynecology and Reconstructive Surgery	7

### Special Program Reports

Perinatal Depression Program	8
Perinatal Family Support Center	9

## Research

Advancing Knowledge and Improving Care	10
Clinical Research Studies	12

## Medical Education

Undergraduate	15
Graduate	15

## 2014 Scholarship

Publications	18
Presentations and Abstracts	19
Grants and Research Support	21

## Staff

Service to the Department Committees	22
Department Growth	23
Staff Directory	24

# Obstetrics and Gynecology



**Emmet Hirsch, MD**  
*Vice Chair for Faculty Development and Clinical Practice, Division Director and Clinical Professor*

## Clinical Mission and Services

The Division of Obstetrics exists to preserve and advance the health of pregnant women through activity in three interrelated spheres. The first is providing excellent care to pregnant, laboring and postpartum women and their infants. Next is creating a learning environment with first-rate educational opportunities for students, residents and fellows. Our third sphere is to expand the body of knowledge in women’s health through original research and clinical trials.

## Obstetrics

### 2014 Highlights and Achievements

Clinical outcomes in Obstetrics at NorthShore University HealthSystem (NorthShore) continue to rank favorably compared to similar institutions across the country. The table below presents the latest 12-month data compiled by the National Perinatal Information Center (NPIC), in which NorthShore is compared to other institutions in Subgroup AR (academic regional perinatal centers) and to the entire database that includes all types of hospitals. In particular, the lower rate of cesarean section and higher rate of vaginal birth after cesarean (VBAC) reflect a significantly positive impact on patient health at NorthShore.

### Obstetrics 2014 Clinical Outcomes

	NorthShore	Subgroup AR Average	Entire NPIC Database Avg
Deliveries	4,759	3,962	3,962
Babies born	4,936	4,282	4,135
Cesarean section rate	27.2%	32.1%	34.7%
VBAC rate*	22.2%	16.7%	12.3%
3rd and 4th degree laceration rate	4.0%	3.1%	2.7%
Postpartum readmission (within 42 days of discharge)	0.9%	1.2%	1.0%

\*Calculated as the percentage of vaginal births in patients with previous Cesarean delivery

- Activities in the Division occur within the framework of our multidisciplinary and collaborative culture. Active participant areas include Nursing, Nurse Midwifery, Family Medicine, Anesthesia, Obstetrics, Maternal-Fetal Medicine (high-risk obstetrics) and, where necessary, Urogynecology and Gynecologic Oncology.
  - Our committee structure remains robust and includes the following interdisciplinary groups:
    - The Obstetric Practice Committee reviews and publishes practice guidelines for the Division of Obstetrics.
    - The Perinatal Morbidity and Mortality Committee meets monthly at NorthShore Evanston Hospital and quarterly at NorthShore Highland Park Hospital to review challenging clinical scenarios.
    - The Obstetrical Clinical Outcomes Committee meets bimonthly to review quality data.
    - The OB Safety Committee designs and implements programs and training initiatives (often using our state-of-the-art Simulation Center) to maximize safety in clinical units.



**Dr. Emmet Hirsch with Yana Filipovich, Research Associate, (left) and Dr. Varkha Agrawal, Post-doc Fellow**

*continued>*



**Kenneth Nelson, MD**  
*Vice Chair of Quality,  
 Division Director and  
 Clinical Associate Professor*

### Clinical Mission and Services

The Division of Gynecology includes all of our Department's specialists and encompasses the disciplines of office practice, adolescent gynecology, and contraceptive and family planning services, as well as surgical procedures in both outpatient and inpatient settings. The Division recognizes that gynecologic surgery in particular is an iterative area within our specialty. As such, members are committed to lifelong and collaborative learning for the benefit of our patients. Our Division's collegial culture is manifested by preceptor programs in which more experienced members proctor others in order to elevate the quality and procedure-related expertise across the Division. We have employed all of the latest technologies, including robotics, to bring state-of-the-art care to the community of patients we serve. We are committed to providing this quality care in an atmosphere of safety, support, cost-effectiveness and partnership with all of our patients.

## Gynecology

### 2014 Highlights and Achievements

- The Division of Gynecology continues to be recognized both regionally and nationally as a very high-performing specialty division. We have maintained the gains we achieved in the areas of patient safety and the delivery of cost-effective, quality care. Using the quality metrics of the Centers for Medicare & Medicaid Services Surgical Care Improvement Project (SCIP), once again NorthShore gynecologic surgeons have met or exceeded all SCIP benchmarks for 2014.
- The Department also addressed the national controversy surrounding the use of power morcellation for the management of leiomyomata. We had robust discussions within the membership and provided member surgeons guidance about proper informed consent and documentation about the decision to use morcellators during the Food and Drug Administration (FDA) discussion period. Our surgeons also tested and implemented alternatives including both vaginal and abdominal contained in-bag hand morcellation, which is being offered to many patients as a solution. We have continued to emphasize the need for thorough patient education as the FDA position on use has evolved. The FDA is also providing guidance to surgeons about optimal leiomyomata surgery given the new contraindications and black box warnings placed on morcellators from November 2014.
- The Gynecology Division remains totally committed to surgical performance improvement and patient safety through our robust peer-review process. A multispecialty committee thoroughly reviews cases identified by specific criteria, as well as by referral from Risk Management or Quality. Each case is reviewed for indication, documentation, complications, surgical management and adherence to SCIP protocols. At the recommendation of the Gynecologic Morbidity and Mortality Committee, cases may be referred to the Division Director and/or the Department Chairman for additional review, education and process improvement.
- Our efforts at preoperative documentation improvement proved highly successful with near total compliance. Education targeting process and workflow revisions proved most effective. The Department's success has served as a model for all surgical departments at our institution.
- In the interest of providing outstanding gynecologic surgical care in the most cost-effective and efficient manner, all of the gynecologic surgeons benefit from a personalized annual "report card" composed of cost per case, length of stay and case mix index. Each surgeon is compared to his or her peers as well as to national benchmarks where available. These reports serve as an educational tool for surgeon self-reflection as well as a mechanism for identifying best practice.

# Gynecologic Oncology



**Gustavo Rodriguez, MD**  
*Division Director and  
Clinical Professor*

## Clinical Mission and Services

Intensive international research efforts and advances in both surgery and chemotherapy over the past decade are leading to improved outcomes in women with gynecologic cancers, including higher cure rates. The Division of Gynecologic Oncology has been at the forefront of progress, supporting an aggressive research program aimed at prevention, early detection and improved treatment for ovarian and other women's cancers. The Division brings together a collaborative team that sees patients at all four NorthShore hospitals. The Division of Gynecologic Oncology is committed to a multidisciplinary approach to treating women with malignant or premalignant conditions of the gynecologic tract. Our mission is to provide our patients comprehensive and compassionate care while performing basic and clinical research that will make a significant impact in our community and beyond.



**Dr. Gustavo Rodriguez (center) with research team from left, Jane Turbov, Dr. Larry Thaete, Rebecca Rosales and Dr. Josephine Kim.**

## 2014 Highlights and Achievements

- The Division of Gynecologic Oncology was again recognized as an Annual FY2014 Top Practice for outstanding patient loyalty. This designation is given to the top-ranking Divisions as compared to the entire NorthShore Medical Group and peer institutions nationally.
- Jean Hurteau, MD, is spearheading a robust clinical trials program with a number of trial opportunities for women with gynecologic cancers. He continues to play an active role in protocol development within the Gynecologic Oncology Group, a national research consortium that is a leading organization in gynecologic oncology clinical research.
- Under the direction of Carolyn Kirschner, MD, the NorthShore Gynecologic Oncology Robotics Program has developed into a leading programmatic resource in the region. The anticipated benefits and perioperative outcomes have fulfilled the expectations of both patients and surgeons.
- Work has continued under a multimillion-dollar Department of Defense award granted to the Division for studies related to the prevention of endometrial cancer and ovarian cancer. These studies are being spearheaded by Gustavo Rodriguez, MD, and his laboratory team and include collaborations with scientists at Harvard University, Inova and Walter Reed Army Medical Center.
- Under Dr. Rodriguez's leadership as Principal Investigator, enrollment has been completed in Gynecologic Oncology Group Protocol 214. This study evaluates the ovarian cancer preventive effects of progestin in women at high risk of ovarian cancer. The laboratory work related to this national clinical trial is ongoing in Dr. Rodriguez's laboratory. The study objectives include examining the effect of progestins on activation of cancer preventive molecular pathways in the ovary and fallopian tube.
- Dr. Kirschner and her family have continued their outstanding mission efforts internationally, including Nigeria, Cambodia and South America. Her focus has been to serve women with vesicovaginal fistula, a debilitating consequence of traumatic childbirth.
- Dr. Rodriguez was awarded a grant from Bears Care to support research related to ovarian cancer prevention. In addition, The Auxiliary of NorthShore University HealthSystem held a successful American Crafts Exhibition (ACE) raising funds in support of the Clinical Gynecologic Cancer Prevention Program at NorthShore. The Clinical Program seeks to screen women in our community for ovarian and endometrial cancer risk, with implementation of tailored strategies to mitigate risk. Also, a close collaboration has been developed with Katharine Yao, MD, who is overseeing the Breast Screening and Prevention Program. Many women in our community have an increased risk for both breast and gynecologic cancer.
- Elena Diaz, MD, the Division's newest member, has been formally and completely integrated. She has established clinics at Highland Park Hospital to extend Division coverage to that campus.
- In collaboration with the Division of Gynecologic Oncology at the University of Chicago, the Division graduated the first pair of fellows who completed the combined fellowship training program in 2014. Both fellows had a productive three years and presented a number of studies at national meetings.

# Maternal-Fetal Medicine



**Scott MacGregor, DO**  
*Vice Chair for Specialty Care,  
 Division Director  
 and Clinical Professor*

## Clinical Mission and Services

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 and their referring physicians. The Division's commitment to quality and loyalty is evident in the Fetal Diagnostic Center (FDC) of the Center for Maternal and Fetal Health (CMFH) at Evanston Hospital and in each of the seven satellite sites throughout the north and northwest Chicago metropolitan area. The CMFH consolidates the services of MFM and the FDC offering integrated and advanced technology and services.

## 2014 Highlights and Achievements

- In the past year, MFM has continued its commitment to quality improvement in clinical services, research activities and educational opportunities. Our clinical programs have focused on service excellence and timely consultation to our patients and referring physicians. Our group's primary clinical site is Evanston Hospital; however, we also provide services at seven other FDC sites in Glenview, Highland Park, Lake Bluff, Evanston, Arlington Heights, Libertyville and Gurnee.
- In addition to nine specialist physicians, support staff members include five genetic counselors, four MFM nurses, three FDC nurses, three research nurses, a nurse assistant, 11 ultrasonographers, a supportive secretary and billing staff member, a prenatal dietician and a certified diabetic educator to assist patients, particularly those with diabetes or multiple gestations. Pediatric cardiologists from University of Chicago and Lurie Children's Hospital of Chicago perform fetal echocardiograms in our FDC at Evanston and endocrinologists are in the MFM office of the CMFH to help provide comprehensive care for the patients.
- The CMFH offers the newest technology and services. In the past year, the FDC provided more than 30,000 patient encounters. Ultrasonographers maintain certification in first trimester genetic screening (both nuchal translucency and nasal bone), and the CMFH continues to be a leader in first trimester screening for fetal aneuploidy. We are one of the few centers in the area to offer evaluation of nasal bones as a routine component to aneuploidy screening, which significantly increases the detection rate. The newest genetic screening, cell-free fetal DNA, is also offered through the Center to high-risk women.
- In addition to maintaining American Institute of Ultrasound in Medicine (AIUM) certification, our Fetal Diagnostic Centers have upgraded image archiving systems. All of the eight centers are interconnected through this state-of-the-art system and Epic, facilitating rapid communication of results to referring physicians. The ubiquitous, remote access to patients' Electronic Medical Record in Epic enables the numerous physicians and staff to seamlessly improve the quality and continuity of patient care throughout a large geographic area in multiple locations. Epic has been used to develop a systematic approach to patient and physician communication, as well as medical record review. It also provides patients access to their records, results and physicians through NorthShoreConnect.
- The Division has developed a curriculum for simulation training for physicians, fellows, residents and students at the Grainger Center for Simulation and Innovation (GCSI). Ian Grable, MD, MPH, provides leadership of the program and curriculum development. Dr. Grable has served as faculty for four simulation-based continuing medical education courses and nine graduate medical education courses for residents or MFM fellows, many in partnership with the University of Chicago. This program represents the Division's commitment to improve education, quality care and patient safety.
- A commitment to quality also involves our educational programs and research activities. Loraine Endres, MD, completed her Quality Fellowship sponsored by the NorthShore Quality and Patient Safety Committee. NorthShore is the primary site for the University of Chicago-sponsored MFM Fellowship training program under the direction of Richard Silver, MD, and David Ouyang, MD. Two fellows—Heather Straub, MD, and Ankit Shah, MD—graduated in 2014. Three fellows—Edom Yared, MD, Alicia McCarthy, MD, PhD, and Amanda Stephens, MD—are actively involved in clinical services and research activities at NorthShore and the University of Chicago. Our Division also provides education opportunities for medical students and residents, as well as referring physicians and nursing staff. The MFM staff participates in student lectures, four educational conferences for students and residents weekly, fellow lectures and supervises two high-risk obstetric clinics weekly at the Evanston campus.
- Our Division is also dedicated to education and quality improvement for obstetric patients in the state of Illinois and our Perinatal Network. Ann Borders, MD, MPH, is the Executive Director and Obstetric Lead of The Illinois Perinatal Quality Collaborative (ILPQC). The ILPQC was formed in 2013 upon recommendation of the Illinois legislature with support of the Illinois Children's Health Insurance Program Reauthorization Act (CHIPRA) Quality Demonstration Grant and March of Dimes to form a statewide quality collaborative to work closely with the Illinois Regionalized Perinatal System on both obstetric and neonatal quality improvement and is now funded by the CDC. A neonatal nutrition initiative to optimize post-delivery growth of very low birth weight infants was launched in January 2014 in 18 hospitals. An obstetric Early Elective Delivery Prevention Initiative was launched in May 2014 with 48 hospitals participating. Most recently, the ILPQC is carrying out a Birth Certificate Optimization Initiative in collaboration with Illinois Department of Public Health and the Illinois Hospital Association, with 94 hospitals currently participating. The ILPQC neonatal teams are launching a Golden Hour initiative focused on improving neonatal resuscitation outcomes in the first hour of life. Currently, 101 hospitals across the state are involved in an ILPQC initiative. These hospitals account for 85% of births in Illinois and 84% of Illinois Neonatal Intensive Care Unit beds.

- Within our Perinatal Network, Beth Plunkett, MD, MPH, has been the physician leader of the Regional Quality Council, which has initiated projects to improve patient care within our Perinatal Network. The Division also provides educational opportunities to numerous network hospitals under the administration of Myra Sabini, RN, Perinatal Network Coordinator. MFM physicians regularly attend Department meetings and provide quarterly morbidity and mortality conferences at each of the hospitals in the network. In addition, the network hospitals benefit from lectures and educational materials for both physicians and nurses.
- The Division has continued its commitment to clinical and laboratory research, and a number of new projects have been developed during this past year. The Division currently has more than 14 active, Institutional Review Board-approved clinical trials. These research efforts have resulted in numerous presentations at leading scientific research meetings and numerous publications in leading peer-reviewed journals. In addition, NorthShore Maternal-Fetal Medicine and the Department of Obstetrics

and Gynecology at the University of Chicago have initiated collaboration on approved research trials and anticipate continued development of these collaborative efforts.

- In partnership with Northwestern University, we are one of only 14 clinical trial centers of the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development-sponsored MFM Unit. The MFM Unit participation allows our patients access to the most innovative and important clinical trials in pregnant women. Recently completed studies have included the use of 17 hydroxy progesterone to reduce preterm delivery in patients with a shortened cervix on ultrasound evaluation, an observational study to evaluate measures of quality of obstetric care, a randomized placebo-controlled trial of antenatal late preterm steroids, and a randomized trial comparing traditional electronic fetal heart rate monitoring in labor to traditional monitoring plus fetal EKG monitoring. Studies currently enrolling include a randomized placebo-controlled trial in women with cytomegalovirus infection in early pregnancy and an observational study of pregnant women with Hepatitis C.

## Reproductive Endocrinology and Infertility



**John Rinehart,  
MD, PhD, JD**

*Division Director and  
Senior Clinician Educator*

### Clinical Mission and Services

NorthShore has 10 physicians who specialize in reproductive endocrinology and infertility. These physicians are independent practitioners belonging to a variety of practice models. The variety of practice models provides the patients of the NorthShore community with a number of choices when faced with problems of the reproductive endocrine system. A commonly encountered problem is infertility.

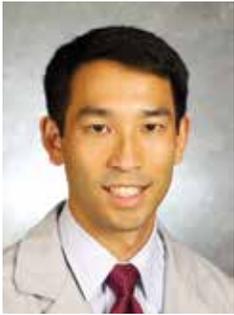
Over the last 30 years, great strides have been made in providing treatment for couples experiencing infertility such that today a majority of couples faced with infertility have many options that provide a high degree of success.

The community of reproductive endocrinologists serving NorthShore families have, from the beginning, been at the leading edge of technological development. The reproductive endocrinologists have consistently maintained the highest levels of success achievable with the technology available.

### 2014 Highlights and Achievements

- A recent trend in the practice of infertility has focused on higher success rates for a cycle of treatment and the use of in vitro fertilization (IVF) to reduce treatment-related risks. The physicians at NorthShore were some of the first to turn to the evolving field of genetic diagnosis to increase the success rates for IVF. Using preimplantation genetic diagnosis and screening, IVF can be done using single-embryo transfer. In this procedure, a single embryo is transferred to the woman, and because of the genetic information obtained from that embryo, the pregnancy rates are the highest achievable.
- A second area of progress in IVF is the use of cryobiology. Newer techniques of freezing tissue have resulted in very high success rates in IVF without the destruction of embryos. Recently, improved egg (oocyte) freezing permits the formation of fewer embryos and yet still preserves the same overall likelihood of success. Progress is being made for patients seeking the use of donor oocytes. Oocytes can now be cryopreserved, and thus there are developing programs for fertility preservation and the ability to obtain cryopreserved oocytes from programs across the country. This provides patients with greater choice when using oocyte donation.
- The Division continues to pursue active participation in research and education at both the medical student level and the graduate education level. The affiliation with The University of Chicago provides a large opportunity for these pursuits. Other institutions of learning are also served by the physicians of NorthShore. Many physicians are involved with national clinical trials as well as local research studies.
- The physicians of NorthShore's REI Division are active in professional service nationally and internationally. Eve Feinberg, MD, is a member of the editorial board of *Fertility and Sterility* and on the Practice Committee of the Society for Assisted Reproductive Technology. She also chairs the Member Services Committee and sits on the Executive Board for the Society for Reproductive Endocrinology and Infertility.

# Gynecological Pain and Minimally Invasive Surgery



**Frank Tu, MD, MPH**  
*Division Director and  
 Clinical Associate  
 Professor*

## Clinical Mission and Services

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.

## 2014 Highlights and Achievements

- In her first year at NorthShore, Diana Atashroo, MD, made an important contribution to the Division's 20 percent growth in services by expanding clinical outreach north to Gurnee and west to Glenbrook. She and Sangeeta Senapati, MD, MS, presented endometriosis management to community groups.
- Frank Tu, MD, MPH, and Kevin Hellman, PhD, were featured guests on the Internet talk show "The Pelvic Messenger" to discuss their current research.
- Dr. Hellman has started work on and National Institutes of Health (NIH)/National Institute of Child Health and Human Development R21 grant to study the underlying mechanisms of menstrual cramps in women. He also was the inaugural winner of the NorthShore Scientific Society Young Investigator Award.
- Drs. Tu and Hellman received a five-year NIH National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) R01 grant to conduct a clinical trial of whether treating menstrual pain may reduce some women's risk for developing chronic pelvic pain later in life.
- Of note, prior funded research from the Division of GPMIS is now being directly used in the latest protocol for brain imaging and neurophysiological testing to characterize women and men with pelvic pain in the NIH/NIDDK flagship Trans-MAPP (Multidisciplinary Approach to the Study of Chronic Pelvic Pain) Phenotyping study as part of a collaboration with Northwestern University's Department of Urology.
- Sarah Conduit-Hulbert, MD, of the University of Chicago graduate medical education program, presented Endometrial Gene Expression and Relation to Endometriosis-Associated Pelvic Pain for the Division at the International Pelvic Pain Society 2014 Annual Meeting.
- Drs. Senapati, Tu and Atashroo served as faculty for the 23rd Annual AAGL Comprehensive Workshop on Minimally Invasive Gynecology for Residents and Fellows in Chicago. Dr. Senapati also co-chaired a session for simulation and surgical education at the Global Congress for the AAGL.
- Dr. Senapati and collaborators at University of Chicago received a grant from the Academy of Distinguished Medical Educators for a pilot curriculum for increasing medical student awareness of interprofessional health education.
- Dr. Tu served as president of the International Pelvic Pain Society, served as an external reviewer for both the Canadian Institutes of Health Research and the National Institutes of Health Research extramural grant programs, and co-chaired the American College of Obstetricians and Gynecologists reVITALize initiative working group on terminology in pain and bleeding disorders. He is also the Chair Elect for the International Association for the Study of Pain Special Interest Group for Abdominal and Pelvic Pain.
- The *American Journal of Obstetrics and Gynecology* invited Dr. Senapati to prepare a critical review of Uterine Morcellation with co-authors Dr. Tu and Javier Magrina, MD, of Mayo Clinic.
- The international journal, *Fertility and Sterility*, accepted Dr. Tu's article related to his study characterizing the longitudinal impact of oral contraceptive pill exposure on endometriosis diagnosis in Australian women for publication.



**Research team (from left) Julia Kane, MPH, Ellen Garrison, RNC, and Katlyn Dillane, Dr. Frank Tu and Dr. Kevin Hellman.**

# Urogynecology and Reconstructive Surgery



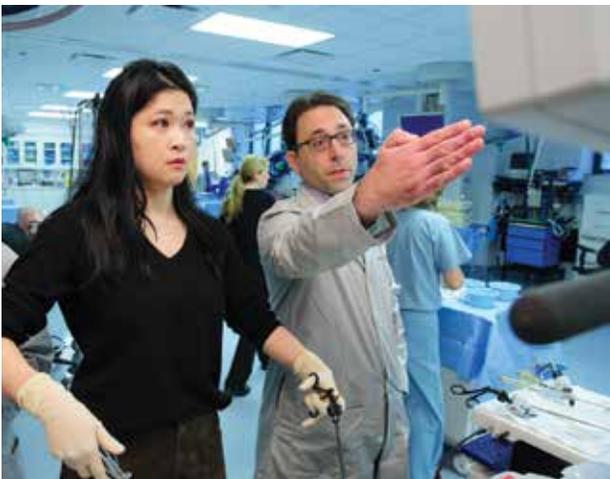
**Roger Goldberg, MD, MPH**  
*Division Director and  
Clinical Associate  
Professor*

## Clinical Mission and Services

The Division of Urogynecology and Reconstructive Surgery is dedicated to improving the care of women with incontinence, painful bladder syndrome, voiding dysfunction and other pelvic floor abnormalities. The Division is actively involved in the education of University of Chicago Pritzker School of Medicine residents and medical students and also continues an American Board of Obstetrics and Gynecology-approved three-year fellowship. The physicians and clinical staff are recognized nationally as a premier resource for clinical care, research, informatics and quality outcomes tracking in urogynecology.

## 2014 Highlights and Achievements

- The Division continues to expand its coverage throughout the north suburbs, with offices now located in Gurnee, Vernon Hills, Highland Park, Skokie and Glenbrook. Close collaboration continues with other Divisions comprising the NorthShore Pelvic Health Center, including: Gynecological Pain and Minimally Invasive Surgery, Colorectal Surgery and Gastroenterology.
- The American Board of Obstetrics and Gynecology officially created a subspecialty in Female Pelvic Medicine and Reconstructive Surgery (FPMRS), commonly referred to as “Urogynecology.” All five fellowship-trained physicians in the Division have now passed their subspecialty board examinations in the new FPMRS. The creation of an official subspecialty represents an important step forward in advancing quality care and research in this area of women’s health.
- The Division continues to play a leading role in research and innovation. In recent months, it was selected as the only center in this geographical region to participate in a new and innovative research trial examining the effectiveness of periurethral injection of autologous myoblasts for women with stress incontinence. Patients undergo a muscle biopsy, followed by injection of cultured cells into the urethral wall. Other trials for 2015 include continued study of BOTOX® for overactive bladder, strategies to optimize bowel function after prolapse surgery, trigger point injection therapy for chronic pelvic pain, and investigation of gluten-free dietary strategies to address lower urinary tract disorders.
- The Division’s novel informatics system in the Electronic Medical Record allows for tracking of all clinical data and surgical outcomes. This data- and quality-tracking system is unique to our Division at NorthShore, and we are currently investigating opportunities to share this expertise with the goal of broadly improving care and data collection throughout the United States. Roger Goldberg, MD, MPH, continues to oversee the project, with the assistance of the NorthShore University HealthSystem Center for Clinical Research and Informatics, and close collaboration with the American Urogynecology Society.
- Physicians from the Division continue to lecture on their research findings and provide surgical instruction to peers, and communities in need, throughout the United States and internationally. Recent surgical teaching activities include invited visits to Japan, Brazil and Colombia (Dr. Roger Goldberg); Bolivia (Janet Tomezsko, MD); and Guatemala (Sylvia Botros, MD, MS).
  - NorthShore Urogynecology physicians hold national and international leadership roles in numerous professional societies. Peter Sand, MD, continues to have worldwide impact through the International Urogynecological Association. Dr. Sylvia Botros is the Chair of the Workshop Subcommittee of the Education Committee of the International Urogynecological Association and is progressing in the Association of Professors of Gynecology and Obstetrics’ Leaders Program. She completed the American Urogynecology Society (AUGS) Leadership Program and serves on the AUGS Education Committee and as Fellowship Director for their Special Interest Group. Dr. Roger Goldberg serves on the Board of Directors of the AUGS and oversees the Health Policy Committee. Dr. Janet Tomezsko leads the Chicago chapter of AUGS and participates in the AUGS Coding Committee.
  - The Division physicians make important leadership contributions at NorthShore. Adam Gafni-Kane, MD, is a member of the Patient Engagement Committee at NorthShore and has assumed an increasingly active role in supervising fellow research projects. Dr. Janet Tomezsko is a member of the NorthShore Professional Staff Board and the Operating Room Committee. She also serves on the Department’s Gynecologic Morbidity and Mortality Committee.



**Dr. Adam Gafni-Kane directs Fellow Dr. Alexis Tran during a simulation skills lab.**

# Perinatal Depression Program



**Jo Kim, PhD**  
Program Director  
and Clinical  
Assistant Professor

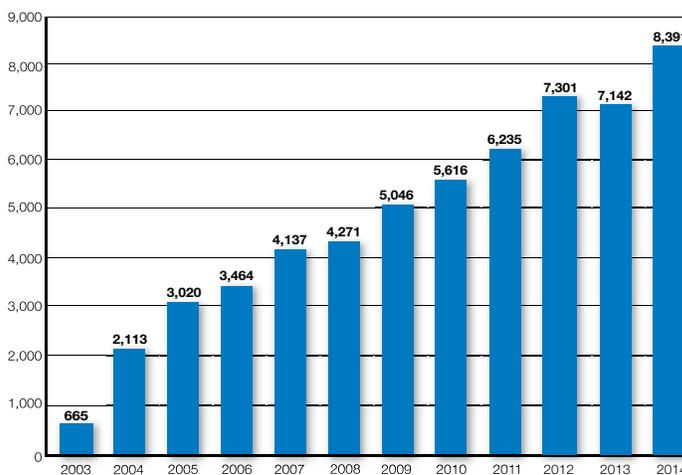
## Clinical Mission and Services

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 using the Edinburgh Postnatal Depression Scale (EPDS). 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.

## 2014 Highlights and Achievements

- **6,506** depression and anxiety screens were administered.
- **459** screens triggered a clinical response for indications of women at-risk, and **166** (36 percent) of those endorsed thoughts of self-harm.
- **728** calls were made to the MOMS hotline.
- **38** callers were referred for emergency services based on acuity.
- The NorthShore Perinatal Depression Program was nationally recognized at various professional conferences. An entire symposium based on the program was featured at the first annual Perinatal Mental Health Meeting in Chicago. The meeting organizers described the symposium as a highlight of the conference. Jo Kim, PhD, and Richard Silver, MD, presented program research “Clinical Correlates of Maternal Suicidal Ideation Reported on Perinatal Depression Screening” at the 2104 Annual Meeting of the American College of Obstetricians and Gynecologists.
- Postpartum support groups were made available to women in the community at no cost through a partnership with Beyond the Baby Blues (BBB), a community-based, nonprofit organization. Funding was secured to expand BBB’s services to include pregnant women, dads, and new partnerships with the Erikson Institute’s Fussy Baby Network and the Infant Welfare Society of Evanston.
- The Illinois Department of Healthcare and Family Service (DHFS) provided additional funding again in 2014. The DHFS awarded service agreements to the NorthShore MOMS perinatal mood disorders hotline to continue providing services to women and families throughout Illinois during fiscal years 2014 and 2015.

## Depression Screen Volume



## FROM PATIENTS

- *A postpartum mother writes, “Thank you again for everything you did for us. There is no better person I could imagine helping us through our happiest and hardest times. I am forever grateful for your kindness and sincerity.”*
- *A patient writes, “Thank you for following us through this journey and taking care of all the little things. There were too many days in that hospital that I did not know which way was up or how the journey would progress. You took care of my heart, while carefully and honestly guiding me to what decision was for me.”*

# Perinatal Family Support Center

## Clinical Mission and Services

The Perinatal Family Support Center (PFSC) provides a wide array of social and referral services to women and their families experiencing challenges related to pregnancy, birth, prematurity or perinatal loss. Patients and their families at both Evanston and Highland Park Hospitals' obstetrical and pediatric units are able to access services of the Center.

## 2014 Highlights and Achievements

- The top five reasons for initial referral to PFSC:

Reason	Percentage
Mental health issues	35.8%
High-risk pregnancy	17.0%
Pregnancy loss	12.1%
ISCU admissions	8.6%
Unmet patient needs	4.5%

- Nearly 1,600 families received services from PFSC in FY2014.
- Three, six-week sessions of the Teen Education program provided anticipatory guidance and developmentally appropriate education to pregnant teens and their support person with an ongoing goal of fostering healthy outcomes.
- More than 70 antenatal consults with Neonatology were performed in anticipation of support, guidance and resource needs of obstetric patients whose unborn child is diagnosed with a significant fetal anomaly.
- In conjunction with the Department of Pediatrics and with the goal of fostering safe transition to the community for infants and children, a high-risk discharge plan has been developed to promote stable transition to parenting. In 2014, 26 families participated with excellent outcomes.
- The Perinatal Family Support and Perinatal Depression Programs developed a collaborative process to help Erie Family Health Center manage psychosocially complex obstetric patients.
- 440 families or patients were provided with needs-based support with the assistance of the NorthShore Associate Board Emergency Family Fund.
- A continued partnership with Junior League of Evanston-North Shore and PFSC enabled an education and advocacy "baby shower" for 15 low-income pregnant woman and their guests.
- PFSC staff members have served as invited presenters at an array of local and national conferences.

- *A note from a patient's spouse, "We want to say that we really do value everything you have done and no words whatsoever will be enough to thank you."*

- *Feedback from a teen participant in the education group: "I liked how we talked about everything. I learned a whole lot more than I realize I'd learn, also how much we all got along."*



*The Teen Education program supports pregnant teenagers with the goal of healthy outcomes.*

# Advancing Knowledge and Improving Care

Competition for external funding for research support gets tougher each year, and recent government cutbacks have made the process of securing critical National Institutes of Health (NIH) funding even more difficult. However, NorthShore's Department of Obstetrics and Gynecology has maintained a high rate of success in terms of earning funding for innovative studies aimed at improving women's health and lives.

There are currently 144 active research projects in the Department, and approximately 27 percent of them are supported by NIH and other prestigious, external funding sources. Between 2010 and 2014, a total of 39 national, non-industry grants were submitted by principal investigators in the Department. All were original research proposals, and 13 of the 39 were funded, generating a success rate that is significantly higher than the national average. As a point of comparison, the "payline" for grant applications to the National Institute of Child Health and Human Development (NICHD) was just 12.5 percent in 2014; that rate for all NIH Institutes was 18.1 percent.

Additionally, many other industry-sponsored, intramural grants and local agency projects were also submitted by Department researchers, and a good portion of those were awarded.

The daunting process of competing for government funding usually involves a two- to three-year period from initial submission through peer review and award. Even applying for federal funding generally reflects a relatively select status in the research community among clinician-scientists at NorthShore and beyond.

Research to advance knowledge and improve patient care is an essential element of the Department and reflects a leadership-driven commitment. Department Chair Richard K. Silver, MD, has grown his team, intentionally recruiting fellowship-trained physicians with a history of research success to continue to expand the Department's research portfolio and achievements. It is remarkable that these individuals are also excellent clinicians and wonderful educators.

Specially trained research nurses and coordinators are also integral members of the Department's multidisciplinary, collaborative team, which has experienced remarkable growth in the last year.

The Department boasts a diverse portfolio of clinical and translational studies bringing benefits to patients in real time. NorthShore's Department of Obstetrics and Gynecology offers a broad range of clinical trials making available the latest options in prevention, diagnostics and therapy for a myriad of conditions in the disciplines of both obstetrics and gynecology.

In 2014, the Department enrolled 163 women in federally funded projects. These patients participated in more than 260 study visits with research staff. Additionally, another 890 women consented to various pregnancy-related screening studies, and 146 pregnant women were enrolled in the Genomic Health Initiative.

NorthShore Research Institute plays an important role in supporting the Department's research initiatives with sustaining infrastructure and resources, including management of the application and budget process. NorthShore's Center for Biomedical Research Informatics is another collaborative research partner with expert biostatisticians and an extensive data warehouse.



*The physician-scientists and research teams of the NorthShore Department of Obstetrics and Gynecology.*

## Funded Principal Investigators in the Department

### Salient Clinical Research Questions

- How can we guarantee evidence-based OB practices across the state of Illinois?
- What is the ideal gestational week for a term infant to be delivered?
- How can we prevent ovarian cancer?
- Which women develop chronic pelvic pain (CPP)? How can we identify them? How can we interrupt the transition to CPP?
- What are the most effective treatments for inhibition of preterm labor?



**Ann Borders, MD, MSc, MPH**, leads a study measuring stress and cortisol levels, funded by NICHD. She is Principal Investigator (PI) on two other studies investigating chronic stress and inflammation during pregnancy, funded by the NorthShore Auxiliary Award and the Research Career Development Award. In addition, she received a Centers for Disease Control and Prevention grant to expand perinatal quality initiatives throughout the state.



**Mara Dinsmoor, MD, MPH**, site-PI for the Maternal-Fetal Medicine Units network funded by NICHD, collaborates with Northwestern University in a 14-center consortium studying pregnancy management topics of high importance. Examples include “A Randomized Trial of Fetal ECG ST Segment and T Wave Analysis,” and “Antenatal Late Preterm Steroids trial”; both are designed to avoid complications at the time of delivery and in the newborn condition.



**Gustavo Rodriguez, MD**, is the PI for a basic laboratory program focusing on prevention of ovarian and endometrial cancers. Funded by the Department of Defense and the NIH/National Cancer Institute, he links his science to translational studies so that clinical progress can be made from his discoveries in the lab. Dr. Rodriguez investigates a variety of hormones, vitamins and anti-inflammatory treatments as preventives before cancer can develop.



**Frank Tu, MD, MPH**, and **Kevin Hellman, PhD**, were awarded two NIH grants from the NICHD and the NIDDK to study mechanisms responsible for chronic pelvic pain, including uterine inflammation and reduced uterine oxygenation. Their translational studies will test the effectiveness of hormonal treatments designed to interrupt the transition to these chronic pain conditions.



**Emmet Hirsch, MD**, leads a basic science laboratory program funded primarily by the NICHD and the March of Dimes that investigates the molecular underpinnings of preterm labor. Dr. Hirsch mentors Maternal-Fetal Medicine Fellows and postdoctoral scientists in his lab. His overarching goal is to bring novel therapeutic strategies to the bedside so that the serious complications of neonatal prematurity can be reduced or eliminated.

# 2014 Clinical Research Studies

## DIVISION OF GYNECOLOGIC ONCOLOGY

Investigator	Clinical Trial	Sponsor	Investigator	Clinical Trial	Sponsor
Hunn	Utility of Routine Surveillance Methods in Detecting Recurrence in High-Grade Endometrial Cancer Patients	NorthShore	Rodriguez	A Multi-Institutional Study of Proteomic Evaluation of Epithelial Ovarian Cancer, Primary Peritoneal Cancer and Fallopian Tube Cancer Patients in First Clinical Remission: Development of a Protein Fingerprint Profile of Relapse	NorthShore
Hunn	A Retrospective Analysis Evaluating the Relationship Between Diabetes, Metformin Use and Survival in Advanced Endometrial Cancer Patients Treated with Chemotherapy	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
Hurteau	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	NorthShore	Rodriguez	Evaluation of Apoptosis and TFG-beta in the Ovary and Fallopian Tubes at Time of Pregnancy Compared to Non-Gravid and Post-Menopausal Women	NorthShore
Hurteau	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	Rodriguez	A Phase III, Randomized, Double-Blind, Placebo-Controlled, Multicenter Study of Olaparib Maintenance Monotherapy in Platinum Sensitive Relapsed BRCA Mutated Ovarian Cancer Patients Who Are in Complete or Partial Response Following Platinum-Based Chemotherapy, Protocol D0816C00002	AstraZeneca
Hurteau	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	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/ NorthShore
Hurteau	UC10-283; NCI 8348: A Phase I/II Study of Cendriantib 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	Rodriguez	Carboplatin and Dose-Dense Paclitaxel and Treatment Combinations for the Treatment of Advanced and Recurrent Ovarian Cancer	NorthShore
Hurteau	A Randomized, Open-Label, Phase II Study of the IDO Inhibitor INCB024360 vs. Tamoxifen for Subjects with Biochemical-Recurrent-Only Epithelial Ovarian Cancer, Primary Peritoneal Carcinoma or Fallopian Tube Cancer Following Complete Remission with First-Line Chemotherapy	Incyte Corp.	Rodriguez	Investigation of Progesterone-Mediated Mechanisms of Cancer Prevention in the Fallopian Tube: Comparison of Fallopian Tubes from Postpartum vs. Non-Gravid Women	NorthShore
Hurteau	GOG 0274: A Phase III Trial of Adjuvant Chemotherapy as Primary Treatment for Locally Advanced Cervical Cancer Compared to Chemoradiation Alone: The Outback Trial (ANZGOG 0902/GOG-0274/RTOG 1174)	NorthShore	Rodriguez	Randomized Controlled Pilot Trial of Vitamin D3 Replacement or Placebo Followed by Bilateral Salpingo-Oophorectomy for Women at Increased Risk of Developing Ovarian, Fallopian or Primary Peritoneal Cancer	Northwestern University
Hurteau	GOG 0286B: A Randomized Phase II/III Study of Palitaxel/Carboplatin/Metformin (NSC#91485) vs. Paclitaxel/Carboplatin/Placebo as Initial Therapy for Measurable Stage III or IVB, or Recurrent Endometrial Cancer	NRG Oncology	Rodriguez	Proteomic Profiling of Primary and Recurrent Ovarian and Endometrial Cancers (under contract EH12-150)	Henry M. Jackson Foundation/Dept. of Defense
Hurteau	UC13-1323: A Phase II Study of XL184 (Cabozantinib) in Recurrent Metastatic Endometrial Cancer	University of Chicago	Rodriguez	Proteomic Profiling of Primary and Metastatic Ovarian and Endometrial Cancers (under contract EH12-150)	Henry M. Jackson Foundation/Dept. of Defense
Hurteau	GOG 0277: A Phase III Randomized Trial of Gemcitabine (NSC #613327) Plus Docetaxel (NSC #628503) Followed by Doxorubicin (NSC #123127) vs. Observation for Uterus-Limited, High-Grade Uterine Leiomyosarcoma	Gynecologic Oncology Group	Rodriguez	Proteomic Profiling of Racial Disparities in Endometrial Cancer (contract under EH12-150)	Henry M. Jackson Foundation/Dept. of Defense
Rodriguez	Development of a Progestin-Based Pharmacologic Approach for the Effective Prevention of Ovarian Cancer	NorthShore Auxiliary	Rodriguez	Proteomic and Molecular Profiles Associated with Endometrial Carcinogenesis (contract under EH12-150)	Henry M. Jackson Foundation/Dept. of Defense

Investigator	Clinical Trial	Sponsor
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	Preoperative Prediction of Metastasis, Recurrence and Resistance in Endometrial Cancer Biopsies	Dept. of Defense

#### DIVISION OF GYNECOLOGICAL PAIN AND MINIMALLY INVASIVE SURGERY

Hellman	Autonomic Modulation of Painful Bladder Syndrome	NorthShore
Hellman	Optogenetic Manipulation of Uterine Contractility	NorthShore
Hellman	Neurophysiological Diagnostics for Menstrual Pain	NIH/NICHD
Hellman	Novel Approaches to Investigation of Menstrual Pain	NorthShore
Pace	A Prospective Randomized Trial Comparing Outcomes of VVF Repairs with a Postoperative Foley for 7 vs 14 Days	NorthShore
Senapati	Laparoscopic Suturing Skills in OB/GYN Residents	NorthShore
Senapati	Registry for Gynecological Patients	NorthShore
Senapati	Vasopressin Administration During Laparoscopic Myomectomy: A Randomized Controlled Trial	NorthShore
Tu	The Role of Hormonal and Neurological Factors on Endometriosis-Associated Pelvic Pain	NorthShore
Tu	National Institute of Diabetes and Digestive and Kidney Diseases (R01DK100368), Deciphering the hormonal and nociceptive mechanisms underlying bladder pain	NIH/NIDDK
Tu	A Randomized Double-Blind, Placebo-Controlled Study to Evaluate the Safety and Efficacy of Elagolix in Subjects with Moderate to Severe Endometriosis-Associated Pain	AbbVie

#### DIVISION OF MATERNAL-FETAL MEDICINE

Borders	Social Conditions in Pregnancy and Fetal Development	NIH/ Northwestern University
Borders	Stress and Maternal-Fetal Health During Pregnancy	Northwestern University
Borders	Stress Measurement in Middle/Upper Income Postpartum Women: An Analysis and Refinement of the PRAMS Life Events Questions	NorthShore
Dinsmoor	Induction in Nulliparous Women and 39 Weeks to Prevent Adverse Outcomes: A Randomized Controlled Trial. A Randomized Trial of Induction vs. Expectant Management (ARRIVE)	NIH/NICHD

Investigator	Clinical Trial	Sponsor
Dinsmoor	An Observational Study of Hepatitis C Virus in Pregnancy	NIH/NICHD
Dinsmoor	A Randomized Trial of Thyroxine Therapy for Subclinical Hypothyroidism or Hypothyroxinemia Diagnosed During Pregnancy	NIH/NICHD
Dinsmoor	An Observational Cohort Study to Evaluate Measures of Quality of Obstetric Care (APEX)	NIH/NICHD
Dinsmoor	Antenatal Late Preterm Steroids (ALPS): A Randomized Placebo-Controlled Trial	NIH/NICHD/ NHLBI
Dinsmoor	A Randomized Trial of Fetal ECG ST Segment and T Wave Analysis as an Adjunct to Electronic Fetal Heart Rate Monitoring (STAN)	NIH/NICHD/ NHLBI
Dinsmoor	Translating Research into Practice in Obstetrics (TRIO)	NIH/NICHD
Dinsmoor	A Randomized Trial to Prevent Congenital Cytomegalovirus Infection (CMV)	NIH/NICHD
Dinsmoor	Non-Invasive Chromosomal Examination of Trisomy Study (NEXT Study), Protocol TD007	Maternal Fetal Medicine Foundation/ Ariosa Diagnostics
Endres	Sonographic Examinations, Shoulder Dystocia and Brachial Plexus Injury: A Case Control Study	NorthShore
McCarthy	Urinary and Breast Milk Iodine Concentrations of U.S. Lactating Women	NorthShore
Ouyang	Sleep-Disordered Breathing During Pregnancy: Relationship with Preeclampsia, A Cohort Study	Preeclampsia Foundation
Ouyang	Adverse Perinatal Outcomes in Dichorionic vs. Trichorionic Triplets	NorthShore
Plunkett	Prenatal Screening for Aneuploidy in Obese Women 35 and Older—A Decision Analysis	NorthShore
Plunkett	Dietary and Behavioral Intervention to Reduce Weight Gain in Obese Pregnant Women	NorthShore Research Inst./ Medical Group Pilot Grant Program
Plunkett	Obesity Is Under-Diagnosed and Under-Treated Among Reproductive Age Women	NorthShore
Silver	Population-Based Preconception Care: An Electronic Health Record Paradigm to Improve Pregnancy Outcomes	NorthShore
Stephens	Prevalence of CMV Infection in Placentas of Small for Gestational Age (SGA) Neonates	NorthShore
Straub	Adverse Perinatal Outcomes in Dichorionic vs. Trichorionic Triplets	NorthShore
Straub	Population-Based Preconceptual Care: An Electronic Health Record Paradigm to Improve Pregnancy Outcomes	NorthShore

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## DIVISION OF OBSTETRICS

Investigator	Clinical Trial	Sponsor
Hirsch	The Molecular Pathogenesis of Health Disparities in Infection-Induced Preterm Birth (5 R01 HD041689-04)	NIH/NICHD/Satter Foundation
Hirsch	Predicting Recurrence of Group B Streptococcus in Subsequent Pregnancies	NorthShore
Hirsch	Effect of Early Purposeful Rotation of Fetal Occiput Posterior Presentation on Delivery Outcomes—A Prospective Randomized Controlled Trial	NorthShore
Hirsch	Viral Amplification of the Impact of the Vaginal Ecosystem in Preterm Labor (1R21NR014779-01)	NIH/NICHD/Satter Foundation
Hirsch	Surfactant Protein A in the Prevention of Preterm Birth	NIH
Hirsch	Delivery and Preterm Infant Morbidity	Collaborative Research Award
Hirsch	Autophagy in the Genesis and Prevention of Labor	March of Dimes
Lu	The Role of Membrane Progesterone Receptors in Primary Myometrial Cells	NorthShore

## DIVISION OF UROGYNECOLOGY AND RECONSTRUCTIVE SURGERY

Botros	A Prospective, Non-Randomized, Parallel Cohort, Multi-Center Study of Xenform vs. Native Tissue for the Treatment of Women with Anterior/Apical Pelvic Organ Prolapse	Boston Scientific Corporation
Botros	Needs Assessment of OB/GYN Fellowship Program Directors	NorthShore
Gafni-Kane	Bladder Perfusion and Abdomino-Pelvic Muscle Contraction as a Source of Pain in Interstitial Cystitis/Bladder Pain Syndrome: A Pilot Study	NorthShore Medical Group Pilot Grant Program
Goldberg	Incontinence and Pelvic Floor Dysfunction: The Evanston-Northwestern Twins Study	NorthShore
Sand	Postoperative Pain, and Perceptions of Recuperation, After Suture-Based, vs. Mesh-Based Sacrospinous Suspension	Boston Scientific Corporation
Sand	Prospective Trial to Evaluate Mesh Augmented Sacrospinous Hysteropexy for Uterovaginal Prolapse	Boston Scientific Corporation
Sand	A Multicenter, Long-Term Follow-Up Study of the Safety and Efficacy of BOTOX® (Botulinum Toxin Type A) Purified Neurotoxin Complex in Patients with Idiopathic Overactive Bladder with Urinary Incontinence	Allergan Sales, LLC
Sand	Anterior Colporrhaphy with and without Concomitant ARCUS Tendineous Graft Placement for the Repair of Advance Anterior Vaginal Wall Prolapse	Boston Scientific Corporation
Sand	Bladder Capacity as an Objective Measure of Response to Intravesical Treatment of Newly Diagnosed Interstitial Cystitis: A Prospective, Randomized Trial	NorthShore

Investigator	Clinical Trial	Sponsor
Sand	BOTOX® for the Treatment of Urinary Incontinence Due to Neurogenic Detrusor Overactivity in Patients with Multiple Sclerosis, Protocol 191622-117	Allergan Sales, LLC
Sand	A Study Evaluating the Efficacy and Safety of BOTOX® and Solifenacin in Patients with Overactive Bladder and Urinary Incontinence, Protocol 191622-125	Allergan Sales, LLC
Sand	A Multi-Center, Double-Blind, Randomized Trial Investigating the Efficacy and Safety of a Combination Therapy, Desmopressin and Tolterodine, for Treatment of Overactive Bladder with Nocturia in Women, Protocol 15214	Ferring Pharmaceuticals A/S
Sand	A Prospective, Non-Randomized, Parallel Cohort, Multi-Center Study of Uphold LITE vs. Native Tissue for the Treatment of Women with Anterior/Apical Pelvic Organ Prolapse	Boston Scientific Corporation
Sand	A Double-Blind, Randomized, Controlled Trial Comparing the Safety and Efficacy of AMDC-USR with Placebo in Female Subjects with Stress Urinary Incontinence	Cook MyoSite, Incorporated
Seitz	Treatment of Postoperative Urinary Retention—What Do Women Want?	NorthShore
Seitz	Time to First Bowel Movement Following Pelvic Reconstructive Surgery: A Randomized Controlled Trial	NorthShore
Seitz	Patient Risk Factors for Vaginal Cuff Dehiscence: A Retrospective Case-Control Study	NorthShore
Seitz	Comparison of One-Year Surgical Outcomes for Sacrospinous Hysteropexy Augmented with Polypropylene Mesh and Acellular Human Dermis: An Ambidirectional Study	NorthShore
Seitz	Hysteropexy: Who's Doing It? A Survey of Female Pelvic Surgeons	NorthShore
Tran	Efficacy of Repeat Mid-Urethral Sling for Persistent or Recurrent Stress Urinary Incontinence	NorthShore
Tran	Practice Patterns of a Urogynecology Division in the Treatment of Overactive Bladder	NorthShore
Tran	Persistence and Patient Satisfaction with Pharmacotherapy Treatment for Overactive Bladder	NorthShore

## PERINATAL DEPRESSION PROGRAM

Kim	Bridging the Gap: Expanding Perinatal Depression Screening to the Pediatric Setting	NorthShore/Satter Foundation
La Porte	Perinatal Depression Hotline Database	NorthShore
Silver	Pilot Study of Computer Adaptive Testing for Perinatal Mood Disorders Screening During and After Pregnancy	NorthShore

## DIVISION OF REPRODUCTIVE ENDOCRINOLOGY AND INFERTILITY

Rinehart	The Predictive Values of a Gene Signature in Cumulus Cells Indicative of Embryo Implantation	GEMA Diagnostics
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## Undergraduate Medical Education



**H. Jacob Saleh, MD**  
*Site Director and Clinical Associate Professor*

### Overview

In collaboration with the University of Chicago Pritzker School of Medicine, NorthShore faculty continues its commitment to ongoing excellence in undergraduate medical education. Students complete learning objectives in healthcare for women in an atmosphere of discovery and clinical excellence.

In addition to the core third-year rotation, fourth-year students are offered unique month-long electives in general and high-risk obstetrics. Electives are expanding to include subspecialty experience in Urogynecology, Gynecologic Oncology, Fertility and Pelvic Pain. Increasing numbers of senior students with a strong interest in post-graduate training from medical schools across the United States and international programs are seeking placement at NorthShore.

### 2014 Highlights and Achievements

- Loren Hutter, MD, and A. Michael Drachler, MD, were recipients of the Holden K. Farrar, Jr. MD Teacher of the Year Award and Lecturer of the Year Award, respectively.
- Michael Hughey, MD, Associate Site Director for Undergraduate Medical Education, has continued to develop excellent learning and testing opportunities at the Grainger Center for Simulation

and Innovation (GSCI) at NorthShore. The centerpiece at GCSI is the Objective Structured Clinical Examination (OSCE), a final exam given to all third-year students that evaluates their ability to apply learned concepts in the clinical environment.

- Sabrina Holmquist, MD, University of Chicago Clerkship Director, led the team that included H. Jacob Saleh, MD, and Dr. Michael Hughey in researching how different grading methodologies predict learner achievements on the OSCE. The study, “Objective Structured Clinical Examination Assessment: Does the Objective Matter?” was accepted as a poster presentation at the University of Chicago Medical Education Day in November.
- This academic year experienced a surge of new faculty participation in student education with new mentors and, most notably, simulation center and OSCE faculty participants.
- Student evaluations and feedback on the NorthShore faculty and Department for the 2013–14 academic year again were at highest levels since the University of Chicago NorthShore affiliation.



**Dr. H. Jacob Saleh presents research with Dr. Sabrina Holmquist**  
*University of Chicago Obstetrics and Gynecology Clerkship Director*

## Graduate Medical Education



**Beth Plunkett, MD, MPH**  
*Site Director and Clinical Assistant Professor*



**Sangeeta Senapati, MD, MS**  
*Associate Site Director and Clinical Assistant Professor*

### Overview

In collaboration with the NorthShore academic affiliates, 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. NorthShore also hosts residents from St. Francis Hospital’s Obstetrics and Gynecology residency training program, which allows one resident 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 NorthShore. This experience gives the residents the opportunity to learn outpatient management within the context of a “group practice.”

### 2014 Highlights and Achievements

- Our OB/GYN faculty are renowned for their remarkable teaching abilities. NorthShore physician Jeremy Miller, MD, was recognized by the Obstetrics and Gynecology residents once again for his

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## Fellowship Programs

### Graduate Medical Education (continued)

talent and dedication to graduate medical education as the recipient of the Golden Apple Award.

- The residents received several important accolades. John Byrne, MD (Class of 2017) was recognized campus-wide by the students of the Pritzker School of Medicine for his superlative teaching. He was awarded the Arnold P. Gold Foundation Humanism and Excellence in Teaching Award. Several residents were recognized by the medical students as outstanding teachers during their clerkships. They include Neha Bhardwaj, MD (Class of 2014), Sarah Conduit-Hulbert, MD (Class of 2015), Benjamin Brown, MD (Class of 2016) and John Byrne, MD (Class of 2017). Marie Colbert, MD, was selected as the American College of Obstetricians and Gynecologists (ACOG) District VI Junior Fellow Advisory Council Program Representative Liaison.
- The Obstetrics and Gynecology residents had outstanding faculty-mentored research accomplishments presented at the ACOG 2014 Annual Meeting and other national meetings. Maliyah Saylawala, MD (Class of 2014), mentored by Amanda Horton, MD (Division of Maternal-Fetal Medicine), presented her investigation of the role of obesity in labor induction. Abbe Kordik, MD, mentored by Beth Plunkett, MD, MPH, (Division of Maternal-Fetal Medicine) presented her work on the under-diagnosis of obesity in our patient population. Andrea Loberg, MD (Class of 2016) and Heather Straub, MD (MFM Fellow, Class of 2014) mentored by Richard Silver, MD (Division of Maternal-Fetal Medicine), presented their analysis of the detection of poorly controlled diabetes using the Electronic Medical Record. Faculty-mentored research was also presented at various other national meetings. Insiyyah Patanwala, MD (Class of 2015) and Sarah Conduit-Hulbert, MD (Class of 2015), mentored by Frank Tu, MD, MPH, and Kevin Hellman, PhD (Division of Gynecological Pain and Minimally Invasive Surgery) presented their research in two separate projects related to pelvic pain. Dana McQueen, MD, mentored by Eve Feinberg, MD (Division of Reproductive Endocrinology and Infertility), presented her investigation of racial disparities in in-vitro fertilization. The resident research projects over this past academic year are representative of the depth and breadth of research in the Department and the faculty's commitment to mentor learners in their academic endeavors.
- Ian Grable, MD, MPH, Clinical Assistant 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 (GCSI) at NorthShore. His educational program provided intensive training for the residents in such areas as complex deliveries, procedural skills, team building, obstetric emergencies, patient counseling and management of medically complex situations. Sangeeta Senapati, MD, MS and colleagues provided the residents with high-impact learning at the GCSI. Under her leadership, residents participate in educational programs to focus on advanced minimally invasive skills and techniques in the safety of the simulated learning environment.



**Jean Hurteau, MD**

*Associate Director and Clinical Professor*

### Gynecologic Oncology

#### Overview

The Division of Gynecologic Oncology has an approved, integrated fellowship training program directed by S. Diane Yamada, MD, at the University of Chicago and certified by the American Board of Obstetrics and Gynecology. The program consists of one basic science research year and two clinical years divided between the two campuses. The clinical experience includes management of preinvasive and complex invasive cancers of the gynecological tract under the supervision of eight attending physicians, with both surgical and medical oncology as central components of the curriculum.

#### 2014 Highlights and Achievements

- Terri Febbraro, MD, began her second year in the Gynecologic Oncology Fellowship Program after completing her first year in the laboratory. Terry completed her residency at Brown University.
- Josephine Kim, MD, was welcomed as our first-year fellow and has performed her six-week introductory clinical rotation at NorthShore. Dr. Kim received her medical degree at the University of Chicago and completed her residency at the University of California-San Diego.
- Annie Jewell, MD, started her third and last year of the Gynecologic Oncology Fellowship. Dr. Jewell completed her residency at New York University.
- Andras Ladanyi, MD, and Jessica Hunn, MD, are the first two fellows to successfully complete the three-year Gynecologic Oncology Fellowship Program. Dr. Ladanyi took a position at the University of Illinois, Peoria, and Dr. Hunn returned home to Salt Lake City, Utah, to join a well-established private practice group. Both were very productive academically throughout the three-year fellowship with multiple publications and abstracts at national meetings.
- Dr. Jessica Hunn presented her research abstracts at the 2014 Annual Meeting of the Society of Gynecologic Oncology in Tampa, Florida.

### Department of Obstetrics and Gynecology 2014 Fellows

Terri Febbraro, MD (Gynecologic Oncology)  
 Shilpa Iyer, MD (Urogynecology)  
 Andrea Jewell, MD (Gynecologic Oncology)  
 Josephine Kim, MD (Gynecologic Oncology)  
 Alicia McCarthy, MD, PhD (Maternal-Fetal Medicine)  
 Miriam Seitz, MD (Urogynecology)  
 Amanda Stephens, MD (Maternal-Fetal Medicine)  
 Alexis Tran, DO (Urogynecology)  
 Edom Yared, MD (Maternal-Fetal Medicine)



**Richard Silver, MD**  
*Program Director and Clinical Professor*  
**Maternal-Fetal Medicine**



**Sylvia Botros, MD, MS**  
*Program Director and Clinical Assistant Professor*  
**Female Pelvic Medicine and Reconstructive Surgery (formerly known as Urogynecology)**

### Overview

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 three of its fellows. Their learning experience includes diagnosis, treatment and management of medical, surgical and obstetrical complications of pregnancy. Additionally, they develop proficiency and expertise in ultrasound and antenatal diagnosis, including procedural skills such as amniocentesis and chorionic villus sampling.

### 2014 Highlights and Achievements

- The American Board of Obstetrics and Gynecology reaccredited the program for four years.
- The MFM fellows had significant scholarly productivity. Collectively, in the past academic year, they presented their research 10 times at national meetings and had 13 publications in leading journals in the specialty.
- Our recently graduated fellow, Anna Gonzalez, MD, and her mentor Beth Plunkett, MD, were recognized as having the best oral presentation during their plenary session at the 2014 Society of Maternal-Fetal Medicine. Dr. Plunkett presented their thesis, "Elevated Neonatal IGF-I Is Associated with Fetal Hypertrophic Cardiomyopathy."
- Heather Straub, MD, mentored resident John Byrne, MD, on a project titled "Evaluation of Ethics Education in Obstetrics and Gynecology Residency Programs: A Survey of OB/GYN Residency Program Directors" that was awarded the Kermit E. Krantz Memorial Paper at the 2014 Central Association of Obstetricians and Gynecologists.
- Dr. Straub also completed an Ethics fellowship at the renowned MacLean Center for Clinical Medical Ethics at the University of Chicago.
- Dr. Straub completed her fellowship training and has joined a Maternal-Fetal Medicine group in Tacoma, Washington. She plans to remain involved in resident education on a local level and ethics committee work on a national level.
- Ankit Shah, MD, completed his fellowship and has joined the Maternal-Fetal Medicine faculty at Inova Women's Hospital in Fairfax, Virginia.
- Alicia McCarthy, MD, PhD, transferred to our fellowship from Ohio State University's program to begin her second year.
- Amanda Stephens, MD, recently began her first year of fellowship after completing her residency at the University of Missouri.

### Overview

The NorthShore Division of Female Pelvic Medicine and Reconstructive Surgery (FPMRS) supports the advanced training for three fellowship positions certified by the Accreditation Council for Graduate Medical Education (ACGME). The program continues to successfully integrate clinical rotations at the University of Chicago. The highly regarded national reputation of the NorthShore FPMRS fellowship program was instrumental in matching with top-tier applicants again in 2014 for the thirteenth consecutive year.

### 2014 Highlights and Achievements

- Recently graduated fellow, Kelly Jirschele, DO, mentored by Sylvia Botros, MD, MS, completed the competitive NorthShore Quality Scholars Program for the year 2014 and was able to complete her fellowship thesis as a quality project. In addition, she has a manuscript resulting from her thesis titled "Physician Attitudes Toward Urinary Incontinence Identification" accepted for publication. She has had several abstracts accepted for presentation at national and international meetings.
- Dr. Jirschele passed her FPMRS written board examination, has graduated and joined a well-regarded FPMRS group in the western suburbs of Chicago.
- Miriam Seitz, MD, our third-year fellow, successfully passed her oral board examination to become a diplomate of the American Board of Obstetrics and Gynecology.
- Alexis Tran, DO, is our second-year fellow. Her research, "Persistence to Drug Therapy in a Female Pelvic Medicine and Reconstructive Surgery Division in the Treatment of Overactive Bladder," was selected for presentation at the 2014 Annual Meeting of the International Continence Society in Brazil.
- Shilpa Iyer, MD, recently began her first year of fellowship after completing her residency at Brigham and Women's Hospital/ Massachusetts General Hospital in Boston. She recently delivered a beautiful baby girl. We welcome and congratulate her.
- Dr. Sylvia Botros was selected to participate in the prestigious Association of Professors of Gynecology and Obstetrics' Scholars and Leaders educational leadership program this year.

# 2014 Publications

- Agrawal, V**, Jaiswal, MK, Ilievski, V, Beaman, KD, Jilling, T, **Hirsch, E** (2014) Platelet Activating Factor (PAF): A role in preterm delivery and an essential interaction with toll-like receptor (TLR) signaling in mice. *Biology of Reproduction* 91(5):119.
- Bokhari, A, Lee, L, Raboteau, D, Hamilton, C, Maxwell, G, **Rodriguez, G**, Syed, V (2014) Progesterone inhibits endometrial cancer invasiveness by inhibiting the TGF- $\beta$  pathway and upregulating E-cadherin. *Cancer Prevention Research* (Philadelphia, PA) 7(10):1045-55.
- Boots, C, Gustofson, R, **Feinberg, E** (2013) Does methotrexate administration after in-vitro fertilization affect ovarian reserve or ovarian responsiveness? *Fertility and Sterility* 100(6):1590-93.
- Diaz, E**, Aoyama, C, Baquing, M, Beavis, A, Silva, E, Holschneider, C, Cass, I (2014) Predictors of residual carcinoma or carcinoma-in-situ at hysterectomy following cervical conization with positive margins. *Gynecologic Oncology* 132(1):76-80.
- Facco, F, **Ouyang, D**, Zee, P, Strohl, A, Gonzalez, A, Lim, C, Grobman, W (2014) Implications of sleep disordered breathing in pregnancy. *American Journal of Obstetrics and Gynecology* 210(6):559.e1-6.
- Facco, F, **Ouyang, D**, Zee, P, Grobman, W (2014) Sleep disordered breathing in a high risk cohort-prevalence and severity across pregnancy. *American Journal of Perinatology* 31(10):899-904.
- Fischer, J, Sarto, G, Hardman, J, **Endres, L**, Jenkins, T, Kilpatrick, S, Jeong, H, Geller, S, DeGo, K, Fischer, P, Rodvold, K (2014) Influence of gestational age and body weight on the pharmacokinetics of labetalol in pregnancy. *Clinical Pharmacokinetics* 53(4):373-83.
- Fitchev, P, Chung, C, **Plunkett, B**, Brendler, C, Crawford, S (2014) PEDF & stem cells: Niche vs. nurture. *Current Drug Delivery* 11:552-60.
- Gafni-Kane, A**, **Sand, P** (2014) Vesicoureteral reflux in women with idiopathic high-pressure detrusor overactivity: Prevalence, bladder function, and effect on the upper urinary tract. *International Urogynecology Journal* 25(10):1405-1410.
- Glasspool, R, Martín, A, Millan, D, Lorusso, D, Avall-Lundqvist, E, **Hurteau, J**, Davis, A, Hilpert, F, Kim, J, Alexandre, J, Ledermann, J (2014) Gynecologic Cancer InterGroup (GCIg) consensus review for squamous cell carcinoma of the ovary. *International Journal of Gynecological Cancer* 24(9 Suppl 3):S26-9.
- Goldberg, R**, **Gafni-Kane, A**, **Jirschele, K**, **Silver, R**, Maurer, D, Solomonides, T, Simmons, A, Silverstein, J (2014) An automatic female pelvic medicine and reconstructive surgery registry and complications manager developed in an electronic medical record. *Female Pelvic Medicine and Reconstructive Surgery* 20(6):302-4.
- Gonzalez, A, Doll, J, Morgan, G, Young, L, **Dinsmoor, M**, Crawford, S, **Plunkett, B** (2014) Elevated neonatal leptin is associated with fetal hypertrophic cardiomyopathy but not cardiac dysfunction. *Reproductive Sciences* 21:S045A.
- Gonzalez, A, Young, L, Doll, JA, Morgan, G, Crawford, S, **Plunkett, B** (2014) Elevated neonatal insulin-like growth factor I is associated with fetal hypertrophic cardiomyopathy in diabetic women. *American Journal of Obstetrics and Gynecology* 211:290e1-7.
- Haymon, L, **Simi, E**, Moyer, K, Aufox, S, **Ouyang, D** (2014) Clinical implementation of noninvasive prenatal testing among maternal fetal medicine specialists. *Prenatal Diagnosis* 34:416-23.
- Hirsch, E**, **Elue, R**, **Wagner, A**, **Nelson, K**, **Silver, R**, Zhou, Y, **Adams, M** (2014) Severe perineal laceration during operative vaginal delivery: The impact of occiput posterior position. *Journal of Perinatology* 34(12):898-900.
- Hurteau, J**, **Jewell, A** (2013) Ovarian Cancer: Epithelial. *State of the State of Gynecologic Cancers, Eleventh Annual Report to the Women of America*, Chicago, IL. Foundation for Women's Cancer, 7-11.
- Jaiswal, M, **Agrawal, V**, Mallers, T, Gilman-Sachs, A, **Hirsch, E**, Beaman, K (2013) Regulation of apoptosis and innate immune stimuli in inflammation induced preterm labor. *Journal of Immunology* 191:5702-13.
- Li, LP, **Lu, J**, Zhou, Y, Papadopoulos, M, Franklin, T, Bokhary, U, Solomon, R, Sen, A, Prasad, P (2014) Evaluation of intrarenal oxygenation in iodinated contrast-induced acute kidney injury-susceptible rats by blood oxygen level-dependent magnetic resonance imaging. *Investigative Radiology* 49(6):403-10.
- Li, L, Thacker J, **Lu, J**, Franklin, T, Zhou, Y (2014) Efficacy of preventive interventions for iodinated contrast-induced acute kidney injury evaluated by intrarenal oxygenation as an early marker. *Investigative Radiology* 49(10):647-52.
- Osorio, A, **Rodriguez, G**, et al. (2014) DNA glycosylases involved in base excision repair may be associated with cancer risk in BRCA1 and BRCA2 mutation carriers. *PLoS Genetics* 10(4):e1004256.
- Perlongo, P, **Rodriguez, G**, et al. (2014) Candidate genetic modifiers for breast and ovarian cancer risk in RCA1 and BRCA2 mutation carriers. *Cancer Epidemiology, Biomarkers and Prevention* Oct 21.
- Peterson, C, Rauscher, G, Johnson, T, **Kirschner, C**, Barrett, R, Kim, S, Fitzgibbon, M, Joslin, C, Davis, F (2014) The association between neighborhood socioeconomic status and ovarian cancer tumor characteristics. *Cancer Causes Control* 25(5):633-37.
- Sand, P**, Owens, G, Black, E, Anderson, L, Martinson, M (2014) Cost effectiveness of radiofrequency microremodeling for stress urinary incontinence. *International Urogynecology Journal* 25(4):517-23.
- Sherman, M, Piedmonte, M, Mai, P, Ioffe, O, Ronnett, B, Van Le, L, Ivanov, I, Bell, M, Blank, S, DiSilvestro, P, Hamilton, C, Tewari, K, Wakeley, K, Kauff, N, Yamada, S, **Rodriguez, G**, Skates, S, Alberts, D, Walker, J, Minasian, L, Lu, K, Greene, M (2014) Pathologic findings at risk-reducing salpingo-oophorectomy: Primary results from Gynecologic Oncology Group Trial GOG-0199. *Journal of Clinical Oncology* 32(29):3275-83.
- Stoneham, S, **Hurteau, J**, et al. (2014) Adolescents and young adults with a "rare" cancer: getting past semantics to optimal care for patients with germ cell tumors. *Oncologist* 19(7):689-92.
- Straub, H**, **Qadir, S**, Miller, G, **Borders, A** (2014) Stress and stress reduction. *Clinical Obstetrics and Gynecology* 57(3):579-606.
- Straub, H**, **Horton, A** (2014) Strip of the month. *NeoReviews* 15:e360-e368.
- Straub, H**, **Adams, M**, **Silver, R** (2014) Can an electronic health record system be used for preconception health optimization? *Maternal and Child Health Journal* 18(9):2134-40.
- Silver, R**, **Straub, H** (2014) What's missing from the electronic health record? *Contemporary OB/GYN* 59(1):38-43.
- Venkatasubramanian, P, Brendler, C, **Plunkett, B**, Crawford, S, Fitchev, P, Morgan, G, Cornwell, M, McGuire, M, Wyrwicz, A, Doll, J (2014) Periprostatic adipose tissue from obese prostate cancer patients promotes tumor and endothelial cell proliferation: A functional and MR imaging pilot study. *The Prostate* 74:326-335.
- Whitaker, A, **Endres, L**, Mistretta, S, Gilliam, M (2014) Postplacental insertion of the levonorgestrel intrauterine device after cesarean delivery vs. delayed insertion: A randomized controlled trial. *Contraception* 89(6):534-9.
- Wymer, K, Shih, T, **Plunkett, B** (2014) The cost-effectiveness of a trial of labor accrues with multiple subsequent vaginal deliveries. *American Journal of Obstetrics and Gynecology* 211:56.e1-56.e12.
- Yared, E**, **Grable, I** (2014) Strip of the month. *NeoReviews* 15(5):e206-e215.

# 2014 Presentations and Abstracts

- Agrawal, V**, Jaiswal, M, Beaman, K, **Hirsch, E** (2014) Characterization of uterine NK cells in preterm labor in the mouse. Society for the Study of Reproduction 47th Annual Meeting, Grand Rapids, MI.
- Boots, C, Desai, S, Hill, M, **Feinberg, E**, Fowler, S, Jungheim, E (2014) Impact of methotrexate on ovarian reserve. American Society for Reproductive Medicine 70th Annual Meeting, Honolulu, HI.
- Boots, C, Hill, M, **Feinberg, E**, Lathi, R, Fowler, S, Jungheim, E (2014) Probability of clinical pregnancy and live birth in ART for women previously treated for ART-related ectopic pregnancy. American Society for Reproductive Medicine 70th Annual Meeting, Honolulu, HI.
- Botros, S** (2014) New developments in urethral radiofrequency coagulation and periurethral injections. Advances in Urogynecology and Reconstructive Pelvic Surgery 23rd Annual Conference, Chicago, IL.
- Botros, S**, DeLancey, J, **Gafni-Kane, A**, Rosenblatt, P, **Sand, P**, Siegel, S, **Tomezsko, J** (2014) Guided anatomic dissection of the abdomen and pelvis hands-on cadaver lab. Advances in Urogynecology and Reconstructive Pelvic Surgery 23rd Annual Conference, Chicago, IL.
- Botros, S**, DeLancey, J, **Gafni-Kane, A**, Rosenblatt, P, **Sand, P**, Siegel, S, **Tomezsko, J** (2014) Prolapse and anti-incontinence operations. Advances in Urogynecology and Reconstructive Pelvic Surgery 23rd Annual Conference, Chicago, IL.
- Conduit-Hulbert, S, Tu, F**, Bulun, S, Furukawa, Y, **Hellman, K** (2014) Endometrial gene expression and relation to endometriosis-associated pelvic pain. International Pelvic Pain Society Annual Fall Meeting on Chronic Pelvic Pain, Chicago, IL.
- Duncan, F, Que, E, **Feinberg, E**, Hirshfeld-Cytron, J, Gleber, S, Vogt, S, O'Halloran, T, Woodruff, T (2014) Zinc sparks are extracellular hallmarks of human egg activation. Society for Gynecologic Investigation 61st Annual Scientific Meeting, Florence, Italy.
- Endres, L** (2013) Association of fetal abdominal-head circumference size difference with shoulder dystocia: A multicenter study. Central Association of Obstetricians and Gynecologists Annual Meeting, Napa Valley, CA.
- Feinberg, E** (2014) How to best evaluate the uterine cavity: Hysteroscopy vs. saline infusion sonography. American Society for Reproductive Medicine 70th Annual Meeting, Honolulu, HI.
- Feinberg, E** (2014) Premature ovarian insufficiency: Workup and considerations. American Society for Reproductive Medicine 70th Annual Meeting, Honolulu, HI.
- Gafni-Kane, A** (2014) Abdominal sacrocolpopexy: Why do anything else? Advances in Urogynecology and Reconstructive Pelvic Surgery 23rd Annual Conference, Chicago, IL.
- Goldberg, R** (2014) Abdominal sacrocolpopexy: When abdominal mesh is best. XIII Paulista Congress of Urology, São Paulo, Brazil.
- Goldberg, R** (2014) Anterior-apical mesh repairs: U.S. experience and evolution of a minimal mesh technique. Japanese Society of Female Pelvic Floor Medicine 6th Annual Meeting, Hirosaki, Japan.
- Goldberg, R** (2014) Management of mesh complications and U.S. experience. XIII Paulista Congress of Urology, São Paulo, Brazil.
- Goldberg, R** (2014) The uterus is the victim and should be preserved during pelvic floor surgery. American Urogynecologic Society/ International Urogynecological Association Joint Scientific Meeting, Washington, D.C.
- Goldberg, R** (2014) Update on minimal mesh repairs. XIII Paulista Congress of Urology, São Paulo, Brazil.
- Gonzalez, A, Doll, J, Morgan, G, Young, L, **Dinsmoor, M**, Crawford, S, **Plunkett, B** (2014) Elevated neonatal leptin is associated with fetal hypertrophic cardiomyopathy but not cardiac dysfunction. Society for Gynecologic Investigation 61st Annual Meeting, Florence, Italy.
- Gonzalez, A, Young, L, Doll, J, Morgan, G, Crawford, S, **Plunkett, B** (2014) Elevated neonatal IGF-I is associated with fetal hypertrophic cardiomyopathy. Society for Maternal-Fetal Medicine 34th Annual Meeting, New Orleans, LA.
- Grable, I** (2014) Simulation and debriefing. Mini-Sun Conference, Evanston, IL.
- Grable, I**, Ochoa, P, **McCarthy, A**, **Yared, E**, **Stephens, A** (2014) Emergent vaginal delivery workshop. American College of Emergency Physicians Scientific Assembly, Chicago, IL.
- Hellman, K, Tu, F** (2014) Behavioral and physiological characterization of the molecules involved in menstrual pain. Society for Neuroscience 44th Annual Meeting, Washington, D.C.
- Hirsch, E, Filipovich, Y** (2014) Disruption of polymorphonuclear leukocyte number and function in mice does not alter bacterially induced preterm delivery or pro-inflammatory gene expression. Society for Maternal-Fetal Medicine 34th Annual Meeting, New Orleans, LA.
- Hirsch, E, Filipovich, Y** (2014) Who signals for labor? Evidence that bacterially induced preterm labor in the mouse is mediated by the mother and not the fetus. Society for Maternal-Fetal Medicine 34th Annual Meeting, New Orleans, LA.
- Holmquist, S, **Hughey, M**, **Saleh, H**, Hill, B (2014) Objective structured clinical examination: Does the "objective" matter? University of Chicago Medical Education Day, Chicago, IL.
- Hoque, S, Straub, H, Hirsch, E, Grable, I** (2014) Effect of simulation training on residents' fetal head rotation skills. Council on Resident Education in Obstetrics and Gynecology and Association of Professors of Gynecology and Obstetrics Annual Meeting, Atlanta, GA.
- Hurteau, J** (2014) Ovarian germ cell tumors: Surveillance versus treatment. NRG Oncology/GOG National Cooperative Group Semiannual Meeting Symposium, San Diego, CA.
- Hurteau, J** (2014) Surveillance for germ cell tumors in the adult. Society of Gynecologic Oncology (SGO) Annual Winter Meeting, Breckenridge, CO.
- Jaiswal, M, **Agrawal, V**, Gilman-Sachs, A, **Hirsch, E**, Beaman, K (2014) Decrease of chaperone-mediated autophagy: A key cause of inflammation-induced preterm labor. Society for Gynecologic Investigation 61st Annual Scientific Meeting, Florence, Italy.
- Jaiswal, M, **Agrawal, V**, Pamarthy, S, Gilman-Sachs, A, **Hirsch, E**, Beaman, K (2014) Notch signaling is notched up in inflammation-induced preterm labor. Society for the Study of Reproduction 47th Annual Meeting, Grand Rapids, MI.
- Jirschele, K** (2014) Don't make me laugh when laughter isn't the best medicine: A discussion on urinary incontinence. Department of Medicine Grand Rounds, NorthShore University HealthSystem, Evanston, IL.
- Kirschner, C** (2014) Abnormal uterine bleeding: Etiology and management. Christian Medical and Dental Association 34th Annual Continuing Education Conference, Evia Island, Greece.

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## 2014 Presentations and Abstracts (continued)

**Kirschner, C** (2014) Cervical cancer: Etiology, prevention and treatment. Christian Medical and Dental Association 34th Annual Continuing Education Conference, Evia Island, Greece.

**Kirschner, C** (2014) Vesicovaginal fistula: Surgical management and continence challenges. Christian Medical and Dental Association 34th Annual Continuing Education Conference, Evia Island, Greece.

**Kordik, A, Adams, M, Plunkett, B** (2014) Obesity is underdiagnosed and under-treated among reproductive age women. American College of Obstetricians and Gynecologists Annual Clinical Meeting, Chicago, IL.

**Lopes-Perdiago, J, Straub, H, Gonzalez, A, Ismail, M, Ouyang, D** (2014) Obstetric and antenatal outcomes of dichorionic versus trichorionic triplet pregnancies. Central Association of Obstetricians and Gynecologist Annual Meeting, Albuquerque, NM.

**Lu, J, Reese, J, Filipovich, Y, Agrawal, V, Hirsch, E** (2014) Membrane progesterone receptor alpha: Implications for human and mouse preterm labor. Experimental Biology Annual Meeting, San Diego, CA.

**McQueen, D, Feinberg, E, Lee, S, Schufreider, A, Uhler, M** (2014) Racial disparities in in-vitro fertilization. American Society for Reproductive Medicine 70th Annual Meeting, Honolulu, HI.

Padavil, N, **Hellman, K, Tu, F** (2014) Alterations in vaginal pain sensitivity in women with dyspareunia independent of psychological factors. Sexual Medicine Society of North America 20th Annual Fall Scientific Meeting, Miami, FL.

**Sand, P** (2014) Biological grafts in reconstructive surgery. Advances in Urogynecology and Reconstructive Pelvic Surgery 23rd Annual Conference, Chicago, IL.

**Sand, P** (2014) Pharmacotherapy for urinary incontinence: This is your bladder on drugs. Advances in Urogynecology and Reconstructive Pelvic Surgery 23rd Annual Conference, Chicago, IL.

**Sand, P** (2014) Site-specific or old fashioned rectocele repairs: Which is best? Advances in Urogynecology and Reconstructive Pelvic Surgery 23rd Annual Conference, Chicago, IL.

**Sand, P** (2014) Urodynamic: How do they help us? Advances in Urogynecology and Reconstructive Pelvic Surgery 23rd Annual Conference, Chicago, IL.

**Sasso, K** (2014) Behavioral therapy for stress and urge incontinence. Advances in Urogynecology and Reconstructive Pelvic Surgery 23rd Annual Conference, Chicago, IL.

**Schufreider, A, McQueen, D, Marut, E, Uhler, M, Davie, J, Feinberg, E** (2014) High Normal CGG repeat number on the Fragile X Mental Retardation (FMR1) gene is not correlated with ovarian reserve. American Society for Reproductive Medicine 70th Annual Meeting, Honolulu, HI.

**Senapati, S** (2014) Laparoscopic hysterectomy: The basics. American Association of Gynecologic Laparoscopists Annual Comprehensive Workshop on Minimally Invasive Gynecology for Residents and Fellows, Chicago, IL.

**Senapati, S** (2014) Morcellate or not...when and how. Department of Obstetrics and Gynecology Grand Rounds, NorthShore University HealthSystem, Evanston, IL.

**Senapati, S** (2014) Teaching strategies: Optimizing your teaching encounters. American Association of Gynecologic Laparoscopists 43rd Global Congress on Minimally Invasive Gynecology, Vancouver, British Columbia.

**Shah, A, Hirsch, E** (2014) TRIF: An essential adaptor protein in synergistic actions of TLR3 and NOD2 in macrophages. Society for Maternal-Fetal Medicine 34th Annual Meeting, New Orleans, LA.

**Shah, A, Wang, D, Hirsch, E** (2014) Next generation sequencing of maternal serum to detect viruses in women with labor or PROM. American College of Obstetricians and Gynecologists 62nd Annual Clinical and Scientific Meeting, Chicago, IL.

**Shah, A, Yared, E, Zhou Y, Ouyang, D** (2014) Increasing titers of anti-SSA antibodies are not predictive of PR interval prolongation: Results from a standardized monitoring protocol. Society for Maternal-Fetal Medicine 34th Annual Meeting, New Orleans, LA.

**Straub, H, Adams, M, Loberg, A, Silver, R** (2014) Preconception detection of undiagnosed/poorly controlled diabetes via the electronic medical record. American College of Obstetricians and Gynecologists 62nd Annual Clinical and Scientific Meeting, Chicago, IL.

**Straub, H, Simon, C, Adam, E, Plunkett, B, Endres, L, McKinney, C, Shalowitz, M** for the Community Child Health Network. (2014) Flattened diurnal cortisol slope correlates with postpartum weight retention. Society for Maternal-Fetal Medicine 34th Annual Meeting, New Orleans, LA.

**Tomezsko, J** (2014) Hormonal effects on the lower urinary tract. Advances in Urogynecology and Reconstructive Pelvic Surgery 23rd Annual Conference, Chicago, IL.

**Tu, F** (2014) Pelvic and visceral pain: Mechanisms and management. University of Wisconsin 12th Annual Comprehensive Pain Board Review Symposium, Madison, WI.

**Tu, F, Hellman, K, Kane, J, Resnick, J, Pozolo, K, Borushko, E** (2014) A novel visceral sensitivity task evaluates bladder hyperalgesia independent of psychological factors. International Association for the Study of Pain 15th World Congress on Pain, Buenos Aires, Argentina.

Venkatasubramanian, P, Mafi, M, Brendler, C, **Plunkett, B, Doll, J** (2014) Mouse periprostatic adipose (PPA) tissue mimics human PPA activity on prostate cancer cells: A model system to study PPA-prostate cancer interactions. American Urological Association Annual Meeting, Orlando, FL.

Wcislak, S, Chawla, A, **Plunkett, B, Brendler, C, Doll, J** (2014) Novel lipid-regulatory function for thrombospondin-1 in prostate cancer. American Urologic Association Annual Meeting, Orlando, FL.

Wilkinson, S, **Tu, F, Furukawa, Y, Bulun, S, Hellman, K** (2014) Endometrial gene expression and relation to endometriosis-associated pelvic pain. International Pelvic Pain Society 21st Annual Meeting, Chicago, IL.

Wymer, K, Shih, T, **Plunkett, B** (2014) Cost-effectiveness of a trial of labor after cesarean for successive deliveries. American College of Obstetricians and Gynecologists Annual Clinical Meeting, Chicago, IL.

# 2014 Grants and Research Support

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

- Awardee: Illinois Department of Healthcare and Family Services (HFS); provide high-risk obstetrics consultation, leadership and oversight for HFS initiatives to improve pregnancy outcomes for high-risk women, leading the CHIPRA WORKGROUP E, Perinatal Health Committee and serving as a consultant for the Illinois High-Risk Maternity/Interconception Care Quality Improvement Initiative.
- Principal Investigator: National Children's Study: Vanguard Study—Task Order 5: Stress and Cortisol Measurement for the National Children's Study. A five-site collaboration investigating self-reported and biologic measures of stress in 725 pregnant women.
- Principal Investigator: Centers for Disease Control and Prevention, Illinois Perinatal Quality Collaborative Grant Award to expand the collaborative and implement new perinatal quality initiatives with hospitals throughout the state of Illinois.
- Awardee: NorthShore University HealthSystem Research Institute Research Career Development Award.
- Awardee: NorthShore University HealthSystem Research Institute 2012 Auxiliary Research Scholar.

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

- Site Principal Investigator: Maternal Fetal Medicine Units Network; A randomized trial of fetal ECG ST segment and T wave analysis as an adjunct to electronic fetal heart rate monitoring (STAN).
- Site Principal Investigator: Maternal Fetal Medicine Units Network; Antenatal late preterm steroids (ALPS): A randomized placebo-controlled trial.
- Site Principal Investigator: Maternal Fetal Medicine Units Network; A randomized trial to prevent congenital CMV infection (CMV).
- Site Principal Investigator: Ariosa Diagnostics: Non-Invasive Examination of Trisomy; Multicenter study of aneuploidy screening comparing cell-free fetal DNA to current first trimester screening.
- Site Principal Investigator: Maternal Fetal Medicine Units Network; A randomized trial of thyroxine therapy for subclinical hypothyroidism or hypothyroxinemia diagnosed during pregnancy (TSH)

## **Adam Gafni-Kane, MD**

- Principal Investigator: NorthShore University HealthSystem Pilot Grant, Bladder perfusion and abdomino-pelvic muscle activity as a source of pain in Interstitial Cystitis/Bladder Pain Syndrome: a pilot study.

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

- Principal Investigator: Incontinence and Pelvic Floor Dysfunction: The NorthShore University HealthSystem Twins Study.

## **Kevin Hellman, PhD**

- Principal Investigator: National Institute of Child Health and Human Development (R21HD081709) Neurophysiological Diagnostics for Menstrual Pain.

## **Emmet Hirsch, MD**

- Principal Investigator: National Institute of Child Health and Human Development (1R01 HD056118) Toll-like receptor signaling in the pathogenesis and prevention of prematurity.
- Principal Investigator: Muneer A. Satter and Kristen H. Hertel perinatal research toward the prevention of preterm birth.
- Principal Investigator: March of Dimes Birth Defects Foundation, Prematurity Research Initiative Program Grant (#21-FY10-202). Synergy in innate immune pathways and the pathogenesis of preterm labor.
- Mentor for K23 project: Eunice Kennedy Shriver National Institute of Child Health and Human Development (K23 HD065844-01). Bacterial Vaginosis: Vitamin D Links Mucosal Immunity and Patient Risk.
- Consultant: Global Alliance for the Prevention of Prematurity and Stillbirth (GAPPS). Development of gene-specific progesterone receptor modulators to prevent preterm birth.
- Co-Investigator: Eunice Kennedy Shriver National Institute of Child Health and Human Development (1R21 HD066471—sub-contract). Epigenome-Wide Association Study of Preterm Birth.

## **Jean Hurteau, MD**

- Principal Investigator: ChemoFx Observational Study: A Non-Interventional, Longitudinal, Multi-Center Initiative Examining Outcomes Associated with the Use of the ChemoFx Assay in Solid Tumor Malignancies.
- Principal Investigator: A Phase III, Randomized, Double-Blind Trial of Pegylated Liposomal Doxorubicin (PLD) Plus AMG 386 or Placebo in Women with Recurrent Partially Platinum Sensitive or Resistant Epithelial Ovarian, Primary Peritoneal or Fallopian Tube Cancer, Protocol 20060517.

## **Jo Kim, PhD**

- Awardee: North Suburban Healthcare Foundation, Expanding the Safety Net for Mothers and Families three-year program grant award.
- Principal Investigator: State of Illinois Department of Human Services, NorthShore Hotline Community Services Agreement.
- Principal Investigator: Muneer A. Satter and Kristen H. Hertel identifying and helping women and families at risk for perinatal mood disorders.

## **Jing Lu, PhD**

- Principal Investigator: NorthShore University HealthSystem Research Institute Pilot Grant, The role of membrane progesterone receptor-alpha in infection-induced preterm labor (EH13-113).

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## 2014 Grants and Research Support (continued)

**Gustavo Rodriguez, MD**

- Site Principal Investigator: Gynecological Cancer Translational Research Center of Excellence (GYNE-COE) (W81XWH-11-2-0131).
- Principal Investigator: Bears Care.
- Principal Investigator: Protocol 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 (IND #79,6210).
- Principal Investigator: Sandy and Ron Schutz Ovarian Cancer Research Fund.

**Peter Sand, MD**

- Principal Investigator: BOTOX® for the Treatment of Urinary Incontinence due to Neurogenic Detrusor Overactivity in Patients with Multiple Sclerosis, Protocol 191622-117 Sponsor: Allergan.
- Principal Investigator: Postoperative Pain, and Perceptions of Recuperation, After Suture-Based, versus Mesh-Based Sacrospinous Suspension Sponsor: Boston Scientific.
- Principal Investigator: A Multicenter, Long-Term Follow-Up Study of the Safety and Efficacy of BOTOX® (Botulinum Toxin Type A) Purified Neurotoxin Complex in Patients with Idiopathic Overactive Bladder with Urinary Incontinence, Protocol 191622-096 Sponsor: Allergan.
- Principal Investigator: Prospective Trial to Evaluate Mesh Augmented Sacrospinous Hysteropexy for Uterovaginal Prolapse Sponsor: Boston Scientific.
- Principal Investigator: A Multicenter, Long-Term Follow-Up Study of the Safety and Efficacy of BOTOX® (Botulinum Toxin Type A) Purified Neurotoxin Complex in Patients with Urinary Incontinence Due to Neurogenic Detrusor Overactivity, Protocol 191622-094 Sponsor: Allergan.
- Principal Investigator: A Study Evaluating the Efficacy and Safety of BOTOX® and Solifenacin in Patients with Overactive Bladder and Urinary Incontinence, Protocol 191622-125 Sponsor: Allergan.
- Principal Investigator: A Multi-Center, Double-blind, Randomized Trial Investigating the Efficacy and Safety of a Combination Therapy, Desmopressin and Tolterodine, for Treatment of Overactive Bladder with Nocturia in Women. Sponsor: Ferring Pharmaceuticals

**Frank Tu, MD, MPH**

- Principal Investigator: K23 Mentored Career Development Award NICHD Novel pelvic floor pain measures to enhance female pelvic pain evaluation. The major goal is to determine how somatic pain sensitivity of the female pelvic floor interacts with visceral pain sensitivity and psychological factors in the pain expression of women with painful bladder syndrome.
- Co-Investigator: U01 Multidisciplinary Approach to Pelvic Pain NIDDK Interactive Mechanisms of Pelvic Pain. The major goal is to develop a broader understanding of male and female pelvic pain syndromes using a combination of animal studies, advanced epidemiological methods including field-testing of the NIH PROMIS multidimensional symptom inventory, and fMRI studies of brain activation in pain states.
- Site Principal Investigator: AbbVie M12-671: A Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Safety and Efficacy of Elagolix in Subjects with Moderate to Severe Endometriosis-Associated Pain.

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- 3 Anesthesiology
- 4 Risk Management
- 5 Perioperative Services
- 6 Pathology
- 7 Family Medicine
- 8 Pharmacy
- 9 Quality Improvement
- 10 Neonatology
- 11 Infection Control

# Department Growth

The Department realized important growth in new members in 2014. Each is playing a critical role in realizing our goals of outstanding clinical care, leading academics and recognized research.

**Claudia del Busto, MD**, received her medical degree from University of Michigan Medical School and completed her residency in Obstetrics and Gynecology at Pennsylvania Hospital. She is currently in practice at Midwest Center for Women's Healthcare with Drs. Cheryl Axelrod, Linda Holt, Marcia Krause, Phyllis Marx and Laura Pearlman.

**Ellen Garrison, BSN, RNC**, received her Bachelor of Science in Nursing from Rush University Medical Center. She is serving as a Research Nurse in the Department of Obstetrics and Gynecology.

**Shilpa Iyer, MD, MPH**, received her medical degree from University of Illinois College of Medicine and completed her residency in Obstetrics and Gynecology at Brigham and Women's Hospital/Massachusetts General Hospital. She is pursuing Urogynecologic fellowship training in the NorthShore Division of Urogynecology and Reconstructive Surgery.

**Josephine Kim, MD**, received her medical degree from University of Chicago, Pritzker School of Medicine and completed her residency in Obstetrics and Gynecology at University of California-San Diego. She is pursuing Gynecologic Oncology fellowship training in the NorthShore Division of Gynecologic Oncology.

**Abbe Kordik, MD**, received her medical degree from Rush University Medical School and completed her residency in Obstetrics and Gynecology at University of Chicago, Pritzker School of Medicine. She is currently in practice at North Shore Associates in Gynecology and Obstetrics with Drs. Gail Goldberg, Pamela Goodwin, Kim Johnson and H. Jacob Saleh and Certified Nurse Midwives Gaye Koconis, Debora Lesnick, Kendria Oliver-Hudson and Barbara Zimmerman-Minnich.

**Alicia McCarthy, MD, PhD**, received her medical degree from The Ohio State University College of Medicine and completed her residency at The Ohio State University Wexner Medical Center. She is pursuing fellowship training in the NorthShore University HealthSystem/University of Chicago Maternal-Fetal Medicine program.

**Kendria Oliver-Hudson, CNM**, received her Master of Science in Nursing from University of Illinois at Chicago. She is currently in practice at North Shore Associates in Gynecology and Obstetrics with Drs. Gail Goldberg, Pamela Goodwin, Kim Johnson, Abbe Kordik and H. Jacob Saleh and Certified Nurse Midwives Gaye Koconis, Debora Lesnick and Barbara Zimmerman-Minnich.

**Barrett Robinson, MD, MPH**, received his medical degree from Duke University School of Medicine, completed his residency in Obstetrics, Gynecology and Reproductive Biology at Brigham and Women's Hospital/Massachusetts General Hospital and his fellowship in Maternal-Fetal Medicine at Northwestern University, Feinberg School of Medicine. He is currently in practice in the NorthShore Medical Group—Maternal-Fetal Medicine.

**Gina Russano, CNM**, received her Master of Science in Nursing from Northwestern University. She is serving as a Research Nurse in the Department of Obstetrics and Gynecology.

**Amanda Stephens, MD**, received her medical degree from University of Missouri School of Medicine and completed her residency in Obstetrics, Gynecology and Women's Health at University of Missouri Health Care. She is pursuing fellowship training in the NorthShore University HealthSystem/University of Chicago Maternal-Fetal Medicine program.

**Chanelle Woods-Lomnick, CNM**, received her Master of Science in Nursing at University of Cincinnati. She is currently in practice at Midwest Center for Women's Healthcare with Dr. Michael Benson.

**Barbara Zimmerman-Minnich, CNM**, received her Master of Science in Nursing from Case Western Reserve University. She is currently in practice at North Shore Associates in Gynecology and Obstetrics with Drs. Gail Goldberg, Pamela Goodwin, Kim Johnson, Abbe Kordik and H. Jacob Saleh and Certified Nurse Midwives Gaye Koconis, Debora Lesnick and Kendria Oliver-Hudson.

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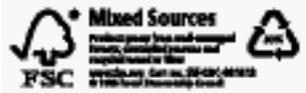
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