

Division of Research Annual Report | 2017-2018



Department of Obstetrics, Gynecology and Reproductive Medicine

Content

Message from the Vice Chairman	2
Research Division Overview	
Mission.....	6
Highlights	7
Staff	8
Grants and Contracts	10
Applications.....	10
Currently Funded.....	11
Research by Departmental Division	
General Obstetrics and Gynecology	12
Maternal Fetal Medicine	14
Midwifery	25
Gynecologic Oncology	26
Reproductive Endocrinology	27
Research	28
Publications	30

Message from the Vice Chairman



Michael Pearl, MD, FACOG, FACS

Vice Chairman for Research and Faculty Development, Department of Obstetrics, Gynecology and Reproductive Medicine

Professor and Gynecologic Oncology Disease Management Team Leader

DIRECTORS' REPORT 2018

*"Putting time, energy and effort into what matters, matters. Consistent effort adds up and makes a difference."
[Akiraq Brost]*

*"One bulb at a time. There was no other way to do it. No shortcuts—simply loving the slow process of planting. Loving the work as it unfolded. Loving an achievement that grew slowly and bloomed for only three weeks each year."
[Jaroldeen Asplund Edwards, The Daffodil Principle]*

"Success is neither magical nor mysterious. Success is the natural consequence of consistently applying basic fundamentals." [Jim Rohn]

On October 27, 1915, Sir Earnest Shackleton and 27 members of his Imperial Trans-Antarctic Expedition abandoned their stricken ship, the Endeavor, "as it was crushed in the icy wasteland of the Antarctic's treacherous Weddell Sea, just about midway between the South Pole and the nearest known outpost of humanity, some 1200 miles away. They were alone, it had been almost a year since they were last in contact with civilization, and no one knew where they were or that they were in trouble. Thus, their plight was naked and terrifying in its simplicity. If they were to get out—they had to get themselves out." [1]

Thus began one of the most incredible journeys of all time. The expedition members spent the winter on the ice until, with the onset of spring, the ice floes broke apart. They took to the sea in three lifeboats, crossing 346 miles to Elephant Island. Although now safely on land, there was no chance of rescue and supplies were limited. Sir Shackleton and five expedition members crossed 720 miles of the Southern Sea in 17 days to reach King Haakon Bay at South Georgia Island. As King Haakon Bay was deserted, Sir Shackleton and two expedition members crossed 32 miles of South Georgia Island's extremely dangerous mountain terrain in 36 hours to reach the Stromness Whaling Station. The next day, a whaler from the station rescued the three expedition members at King Haakon Bay. On August 30, 1916, a Chilean steam tug loaned to Sir Shackleton rescued the remaining



Shackleton's Endurance Expedition: a crewman's view on Elephant Island

expedition members from Elephant Island. All 28 men had survived their ordeal; they "got themselves out." If they had not endured, they would have simply disappeared forever, just another ill-fated expedition lost to an unknown catastrophe.

Not long after I read *Endurance: Shackleton's Incredible Voyage* [1], I watched *The Martian* by Ridley Scott. Mark Watney, played by Matt Damon, is an astronaut stranded on Mars. The story is reminiscent of the Shackleton Expedition; after overcoming seemingly endless hardships and surviving an incredible journey, Astronaut Watney is rescued and returns to Earth. He speaks to an incoming astronaut class about his experiences; "At some point, everything's gonna go south on you...everything is gonna go south and you're going to say, this is it. This is how I end. Now, you can either accept that, or you can get to work. That's all it is. You just begin. You do the math. You solve one problem...and you solve the next one...and then the next. And if you solve enough problems, you get to come home. All right, questions?"

For those who conduct research or manage research programs, these stories are all too familiar. Research is crucial and carries incredible promise but is fraught with incredible difficulty and no guarantee of success. When problems arise, and they will arise, one can either give in or get to work solving one problem, and the next one and the next.

In my report last year, I wrote about the crisis in clinical and translational research enterprise. "Many reasons for this crisis have been put forth; decreased or stagnant funding (e.g., the success rate for NIH funding has remained functionally stagnant for the past three years; 18.1 percent in fiscal year 2014, 18.3 percent in 2015 and

19.1 percent in 2016. [2]), skyrocketing costs, suffocating regulation, lack of patient participation, negative public perception, insufficient infrastructure to train and support clinical researchers, ever-increasing non-research burdens on active clinical researchers, the reasons are myriad and complex. Consequently, "There is a growing fear that if we do not establish a better support system for clinical research, we will lose a generation of clinical investigators needed for sophisticated, scientifically valid clinical research." [3]

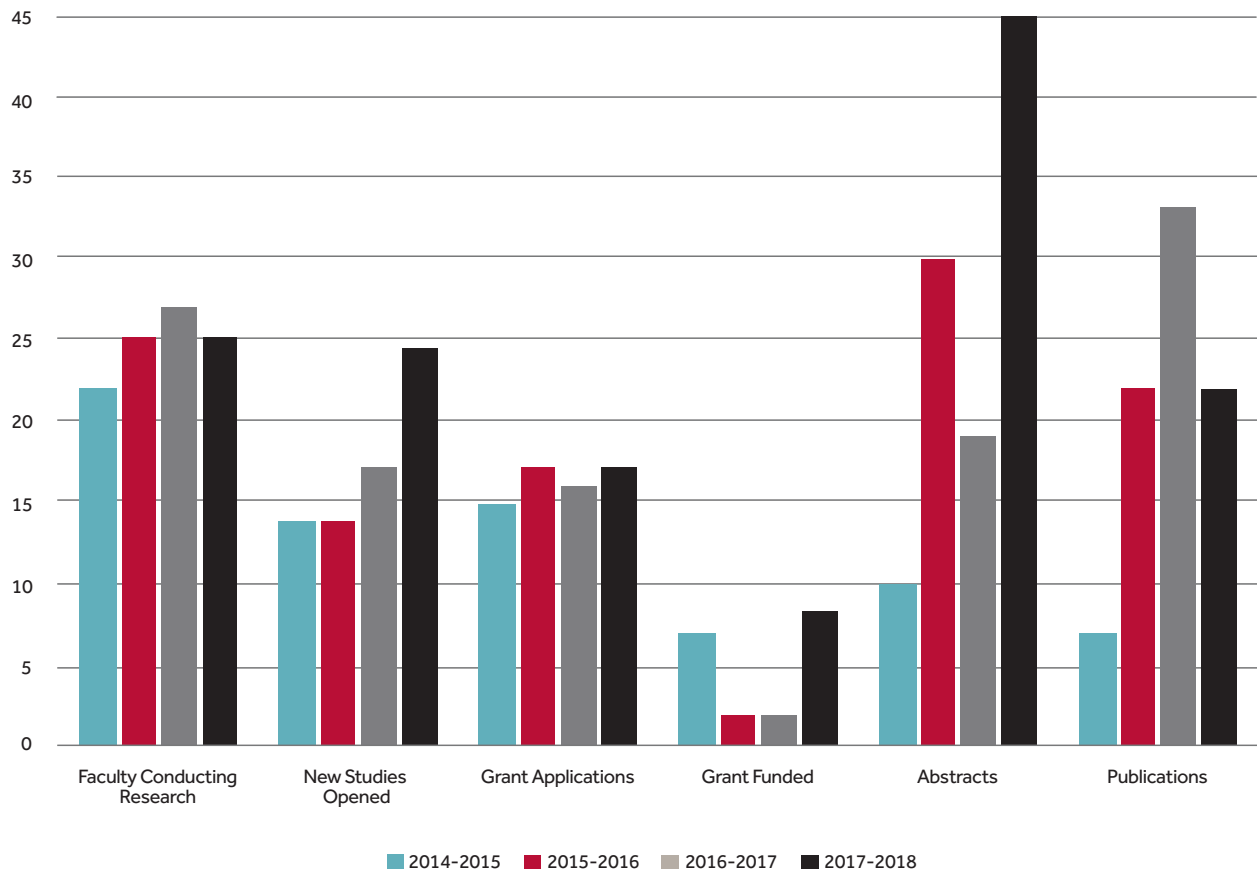
Despite the barriers, as you will see in this report, we are at hard at work solving one problem, and the next one, and the next. Amongst many, let me give you a few representative examples:

Ms. Marlo Dombroff is a Physician's Assistant in the Division of Gynecologic Oncology. She developed a collaborative, prospective study to better understand the cognitive changes that occur in endometrial cancer patients. She is conducting this study in order to: (1) help physicians and patients select the most appropriate, individualized, treatment; (2) identify previously unknown treatment-related risk factors contributing to cognitive decline; and (3) raise awareness in the medical community of subtle, yet important, cognitive changes after cancer treatment, resulting in more frequent interventions to enable patient optimization of post-treatment quality of life.

Dr. Diana Garretto joined the faculty in 2015 as a member in the Division of Maternal-Fetal Medicine. She is the principal investigator for eight clinical research projects and a co-investigator for an additional five projects. Among her projects, she is investigating whether socioeconomic status affects maternal/neonatal morbidity in Suffolk County, assessing the impact of the diagnosis of fetal growth retardation on neonatal outcome in Haiti, and conducting an investigator-initiated prospective randomized, controlled trial of Vitamin D prophylaxis in the prevention of hypertensive disorders of pregnancy. She was a co-author on one peer-reviewed paper and 15 abstracts presented at national meetings. Addressing critical effects of the opioid epidemic on Long Island, she will be a co-investigator on a prospective, randomized controlled trial of buprenorphine vs. buprenorphine/naloxone in pregnancy.

Dr. Kimberly Herrera also joined the faculty in 2015 as a member in the Division of Maternal-Fetal Medicine. She conducted seven clinically important research projects, six in collaboration with departmental residents or faculty. Among her projects, she is investigating whether a cesarean section in the 2nd stage of labor confers an increased risk of cervical insufficiency in the subsequent pregnancy, whether the 75gm glucose tolerance test increases the prevalence of gestational diabetes, and plans to initiate a study to determine if the addition of Azithromycin preoperatively improves the infection rate after C-section. She was the first author on two peer-reviewed papers and a co-author on two abstracts presented at national meetings. She was accepted into the Research Mentorship Program for the National Health Foundation PCORI Hispanic Patient-Centered Health and plans to investigate whether there are treatment differences in Hispanic women with gestational diabetes.

Dr. Lisa Pastore is in her fourth year as a faculty member of the Research Division. Since joining the division, she has submitted 10 extramural grant applications, published eight peer-review papers and presented 13 abstracts at national meetings. She continues her multi-pronged research on various aspects of infertility with several active projects underway. Two of her projects focus on patients' attitudes to prenatal and preimplantation genetic testing, resulting in three peer-reviewed publications. Her remaining projects are outgrowths of her interest in the genetic basis of infertility. In response to a recent NIH request for applications, she submitted a multi-institutional R21 application to assess the prevalence of BRCA1/2 and genes associated with the BRCA 1/2 pathway among women with diminished ovarian reserve. She serves as a research mentor for junior faculty and actively participates in resident education.



Currently, we have 52 open studies with 16 of our faculty and eight collaborators serving as principal investigators. The table above provides a graphical summary of our research activities for the past four academic years.

With the consistent support of our Chairman, Dr. Todd Griffin, the clinical division directors, the Research Division staff led by Elizabeth Roemer, the faculty and staff of the Department of Obstetrics, Gynecology & Reproductive Medicine, and our research collaborators, we had a productive and successful year despite the difficulties. We continue to work to solve one problem, and the next one and the next. I look forward to an even more productive and successful year in 2018-2019.

REFERENCES

1. Endurance: Shackleton's Incredible Voyage. Alfred Lansing, Carroll & Graf Publishers, 4th printing, 2001
2. <http://faseb.org/Science-Policy—Advocacy-and-Communications/Federal-Funding-Data/NIH-Research-Funding-Trends.aspx>
3. Klein S. <http://www.afmr.org/multimedia/2009/Clinical-Research-Conference/jim200299.pdf>

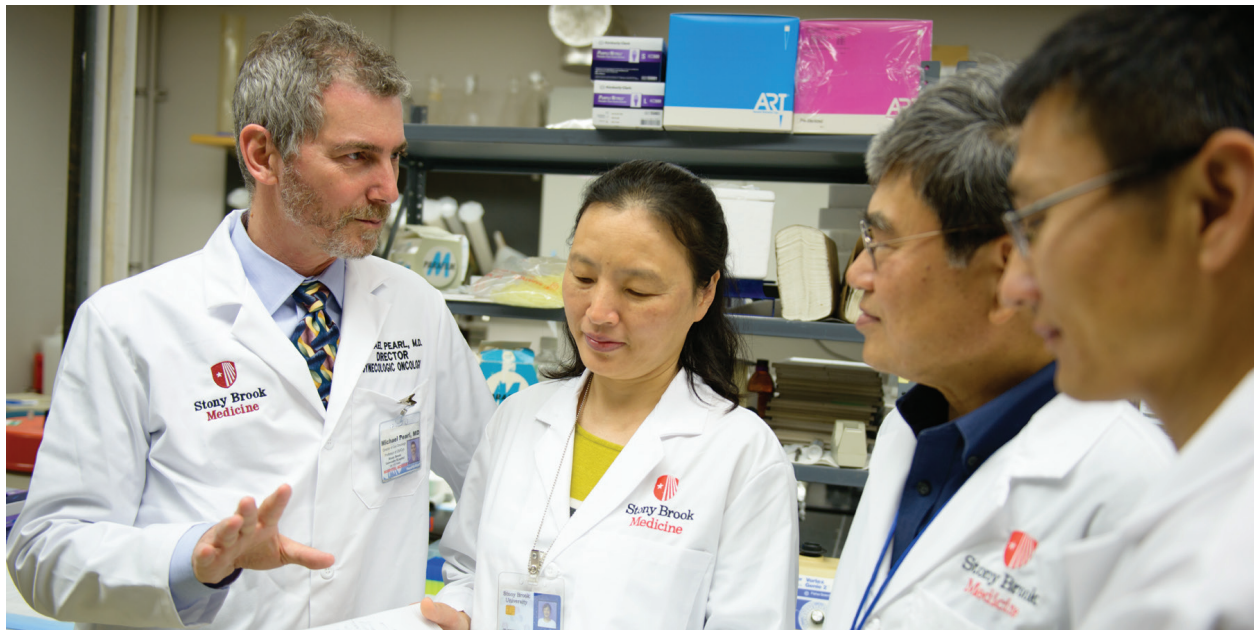
Research Division Overview

Mission

The Department of Obstetrics, Gynecology and Reproductive Medicine recognizes the importance of research by our faculty members, residents and students. One of our core values, as part of the academic mission of the department, is to establish an atmosphere of respect and excitement for research. Our commitment to multidisciplinary team-based women's healthcare is a key component of our efforts to create and expand knowledge and improve the quality of our patients' lives through excellent basic, translational, and clinical research. The Department's mission to foster clinical investigation and translational research amongst the faculty is supported by an established and rapidly growing Division of Research.

Critical to the success of our endeavor is the integration of the pillars of academic medicine: clinical care, education, and research. Excellence in one of these domains is always dependent upon success in the other two. To this end, the Division of Research is dedicated to supporting our faculty members, residents and students in a variety of ways. A few of these, all part of an ever-expanding list, include:

- Aiding our investigators in developing their research interests
- Assisting researchers in the design and development of their projects
- Providing assistance with regulatory compliance
- Helping to identify and secure funding for research projects
- Providing mechanisms to find collaborators in other departments
- Creating opportunities to meet with other investigators to discuss common interests
- Fostering inter-departmental and inter-institutional collaborative research efforts
- Hosting regular research meetings for faculty and staff where projects can be discussed



Dr. Michael Pearl discussing data with Dr. Wen-Tien Chen and his team

Highlights

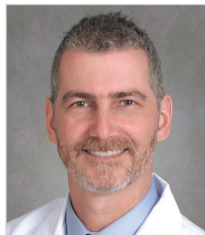
A number of important events impacted the Research Division this year. Key among them were:

- **Samantha Dayton, MPH, MBA**, has joined us as a Senior Research Support Specialist, responsible for supporting department faculty and residents in the design and biostatistical analysis of obstetrics and gynecologic research projects. She also provides IRB application support and assists in the creation of databases and surveys used in research projects.
- CORIHS approved 24 new Ob/Gyn projects and we currently have 52 projects approved and underway.
- Faculty, fellows and residents produced 20 peer-reviewed publications with an additional 3 in review, as well as 2 book chapters, 45 meeting abstracts and 4 community outreach presentations.
- Department faculty submitted 17 funding applications either as PI or in collaboration with others. The department currently has 6 actively funded studies (not including 2 Cancer Center clinical trials).



Dr. Ayisha Buckley discussing her work at Resident Research Day

Staff



Michael Pearl, MD | Vice Chairman for Research and Faculty Development

Dr. Michael Pearl is Professor and the Gynecologic Oncology Disease Management Team Leader at Stony Brook Medicine. He is the Principal Investigator at Stony Brook Medicine for NRG Oncology, a National Cancer Institute-funded cooperative research group dedicated to promoting excellence in the quality and integrity of scientific research. As Vice Chairman, Dr. Pearl oversees departmental research projects and advises faculty and staff on related matters.



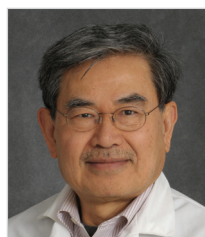
Elizabeth Roemer, MA | Research Coordinator

Elizabeth Roemer is the primary point-of-contact between the Division of Research and the SUNY Research Foundation offices and the Stony Brook Office of Vice President for Research. She facilitates interaction with academic departments on and off campus and aids faculty and residents in developing their research interests. In addition, Ms. Roemer identifies and tracks funding opportunities and works with faculty to develop strategies and proposals for grant and clinical research funding. She is the Division's key resource to obtain auxiliary services and assistance for research enterprises.



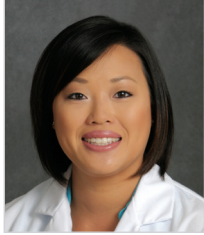
Lisa Pastore, PhD | Associate Professor

Associate Professor Lisa Pastore has a PhD in Epidemiology with a minor in Biostatistics with specialization in the genetics of infertility, genetic counseling and infertility, psychology of infertility, and infertility related to Polycystic Ovary Syndrome. Dr. Pastore has experience with NIH funding and an extensive history of successful external research funding. She has over fifty peer reviewed publications and more than a decade of teaching and mentoring experience.



Wen-Tien Chen, PhD | Research Professor

Research Professor Wen-Tien Chen is an international expert in cancer metastasis. Before joining Stony Brook Medicine in 1998, Dr. Chen was the Director of the Tumor Invasion and Metastasis Program at Georgetown University Lombardi Cancer Center. Throughout his career, he has developed novel methods to isolate and analyze metastatic cancer cells and holds a number of patents for these technologies. His most recent work focuses on circulating tumor cells (CTCs) and their use in detecting endothelial ovarian cancer.



Deidre Lee, MHS | Senior Research Support Specialist

Deidre Lee provides support for faculty and residents in their research studies and coordinates ongoing industry-sponsored clinical trials. In this role, she assists with preparation and submission of regulatory documents, consent and enrollment of eligible patients as study participants, and data collection and management. Ms. Lee also aids in IRB submissions, grant writing, chart reviews, and is responsible for supervising undergraduate and medical students as research assistants.



Samantha Dayton, MPH/MBA | Senior Research Support Specialist

Samantha Dayton is responsible for supporting department faculty and residents in the design and biostatistical analysis of research projects. Her training in analysis includes regression modeling, longitudinal data analysis, mixed method modeling, and survival analysis. She is trained in qualitative methods as well, for focus group and interview analysis. She also provides IRB application support and assists in the creation of databases and surveys used in research projects.



Maureen Rogers | Administrative Assistant

Maureen Rogers provides both general and specialized administrative support for the Division of Research and the Department of Obstetrics, Gynecology and Reproductive Medicine. In this role, she works to expedite documentation required for faculty research proposals and projects. In addition, Ms. Rogers acts as the point of contact for the Division of Midwifery's public programs, including Breastfeeding Support Groups and meetings describing the role of midwives.



Deidre Lee, MHS, Senior Research Support Specialist, and Samantha Dayton, MPH, MBA, Biostatistician, reviewing a data report

Grants and Contracts

Grants Submitted

This year saw 17 applications: 10 with our Ob/Gyn faculty as PIs and an additional 7 applications with Ob/Gyn faculty as co-investigators.

With Ob/Gyn faculty as PIs:

- June 2018: **Dr. Lisa Pastore** (Research Division) submitted a new NIH R21: "The Prevalence of BRCA1/2 and Genes Associated with the BRCA1/2 Pathway Among Women with Diminished Ovarian Reserve" with co-investigator **Dr. James Stelling** (Reproductive Endocrinology).
- May 2018: **Maria Fisher** (Midwifery) submitted an application to the Rita and Alex Hillman Foundation's Hillman Innovations in Care Program.
- April 2018: **Dr. Michael Pearl** (Gynecologic Oncology) submitted a research contract "Metastasis-focused diagnostic blood tests" to Vitatex.
- March 2018 **Dr. Hafsa Memon** (General Obstetrics & Gynecology) applied to the Dean at Stony Brook Medicine for a grant to support her work "Using NYS SPARCS Database of Obstetrics, Gynecologic, and Gynecologic Oncology Outcomes for Research" with the Biostatistical Consulting Core.
- March 2018: **Dr. Lisa Pastore** (Research Division) resubmitted an NIH R21: "Genetic Testing of Embryos for Inherited Childhood Conditions: Influences on Individual Decisional Distress and Uncertainty from Ethical Concerns and Health Information Seeking" with co-investigators **Dr. James Stelling** (Reproductive Endocrinology), *Dr. Marci Lobel* (Department of Psychology, School of Arts and Sciences, SBU) and *Dr. Lisa Rubin* (Department of Psychology, New School for Social Research).
- February 2018: **Dr. Gerald Quirk** (Maternal Fetal Medicine) and *Dr. Petar Djurić* (Department of Electrical Engineering, School of Engineering, SBU) submitted an NIH R01: "Rethinking Electronic Fetal Monitoring to Improve Perinatal Outcomes and Reduce Frequency of Operative Vaginal and Cesarean Deliveries" with co-investigators **Dr. David Garry**, **Dr. Diana Garretto**, **Dr. Kimberly Herrera**, and **Dr. Michael Demishev** (all Maternal Fetal Medicine) and *Dr. I.V. Ramakrishnan* (Department of Computer Science, School of Engineering, SBU).
- January 2018: **Dr. Christina Pardo** (General Obstetrics & Gynecology) developed and submitted a multi-campus application for pre-implementation funding of the Health Sector for the SUNY/Kellogg Foundation SVLC collaboration.
- October 2017: **Dr. Lisa Pastore** (Research Division) resubmitted an NIH R01: "Whole Exome Sequencing and Copy Number Variants in Young Women with Diminished Ovarian Reserve (DORSeq Study)" with coinvestigator **Dr. James Stelling** (Reproductive Endocrinology) and extramural colleagues: *Drs. M.S. Christianson, W.G. Kearns* and *J.H. Segars* at Johns Hopkins and *Dr. M. Hill* at Walter Reed.
- August 2017: **Dr. Gerald Quirk** (Maternal Fetal Medicine) and *Dr. Petar Djurić* (Department of Electrical Engineering, School of Engineering, SBU) resubmitted an NIH R01: "Predictive analytics for monitoring the well-being of fetuses" with co-investigators **Dr. David Garry** (Maternal Fetal Medicine) and *Dr. I.V. Ramakrishnan* (Department of Computer Science, School of Engineering, SBU).
- July 2017: **Dr. Michael Pearl** (Gynecologic Oncology) submitted a research contract "Cancer cell enrichment platform" to Vitatex.

With Ob/Gyn Faculty as co-Investigators:

- June 2018: *Dr. Anat Biegon* (Department of Neurology) submitted a new NIH R21 "Targeting Aromatase in Ovarian Cancer: PET Studies with [11C]vorozole," with **Dr. Gabrielle Gossner** (Gynecologic Oncology).
- June 2018: *Dr. Helen Fox* (Department of Psychiatry) submitted a new NIH R01 "The impact of buprenorphine maintenance (BPM) on maternal, fetal and neonatal stress" with **Dr. David Garry** (Maternal Fetal Medicine).
- June 2018: *Dr. James Swain* (Department of Psychiatry) submitted an NIH R01 "Stress and Brain Mechanisms of Drug Relapse in Buprenorphine Medicated Postpartum Women" with **Dr. David Garry** (Maternal Fetal Medicine) and **Dr. Christina Kocis** (Midwifery).
- May 2018: *Dr. Maricedes Acosta* (Department of Physiology & Biophysics) with **Dr. James Bernasko** (Maternal Fetal Medicine) submitted a Fusion Research TRO project to the Dean's office for support of project looking at exosomes and MiRNA in pregnancy.
- May 2018: *Dr. Petar Djurić* (Department of Electrical Engineering, School of Engineering, SBU) submitted an NSF grant "Advanced analytics with transparency for improved decision making during intrapartum fetal health monitoring" with **Dr. Gerald Quirk** (Maternal Fetal Medicine).
- February 2018: *Dr. James Swain* (Department of Psychiatry) submitted an NIH R01 "Opioids and Maternal Brain-Behavior Adaptation during the Early Postpartum" with **Dr. David Garry** (Maternal Fetal Medicine) and **Dr. Christina Kocis** (Midwifery).
- July 2017: *Dr. Brittain Mahaffey* (Department of Psychiatry) resubmitted an NIH K23: "An Internet-Delivered Mind-Body Program for Reducing Prenatal Maternal Stress" with **Dr. David Garry** (Maternal Fetal Medicine) and *Dr. Marci Lobel* (Department of Psychology, School of Arts and Sciences, SBU) as members of her mentorship team.

Current active accounts

We currently have six active funded studies, five as the home department and one co-funded with another department, as well as two ongoing Gynecological Cancer clinical trial funds.

With Ob/Gyn as home department:

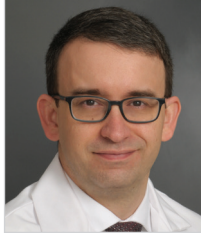
- PI: **Dr. Hafsa Memon** (General Obstetrics & Gynecology) grant from Dean at Stony Brook Medicine to support her work "Using NYS SPARCS Database of Obstetrics, Gynecologic, and Gynecologic Oncology Outcomes for Research."
- PI: **Dr. Michael Pearl** (Gynecologic Oncology) subcontract from a Vitatex NIH SBIR: "Vita-Cap Tube to Preserve Circulating Tumor Cells in Blood (Phase I & II)."
- PI: **Dr. Michael Pearl** (Gynecologic Oncology) award from the Ovarian Cancer Research Fund "Woman to Woman at Stony Brook University Cancer Center."
- PI: **Dr. Michael Pearl** (Gynecologic Oncology) 2 ongoing clinical trial funds: the "NRG Oncology Foundation Contract" and "Gynecologic Oncology Group."
- PI: **Dr. Todd Griffin** (General Obstetrics and Gynecology) combined funding for the Departments of Obstetrics, Gynecology & Reproductive Medicine and Urology: New York State Senate Initiative funding for the ObGyn/Urology Women's Clinic.

Ob/Gyn faculty as Co-investigators:

- PI: *Dr. Brittain Mahaffey* (Department of Psychiatry) was awarded an NIH K23: "An Internet-Delivered Mind-Body Program for Reducing Prenatal Maternal Stress" with **Dr. David Garry** (Maternal Fetal Medicine) and *Dr. Marci Lobel* (Department of Psychology, School of Arts and Sciences, SBU) as members of her mentorship team.

Research by Departmental Division

General Obstetrics and Gynecology



Joseph Chappelle, MD

Dr. Joseph Chappelle has returned to academic medicine, rejoining the Generalists as their Division Director. He carries a significant clinical load and pursues his research interests by mentoring residents. He mentored three of the presenters at the 2018 Resident Research Day (RRD):

Dr. Sara Kim, "Postpartum Utilization of Narcotics for Analgesia,"

Dr. Dijana Poljak, "Post-operative pain control following Cesarean birth:

Should NSAIDs play a bigger role?" and, together with **Dr. Melissa Strafford**,

Dr. Ayisha Buckley, "Retrospective Analysis of Post Abortal Retained Products of Conception."

Dr. Chappelle also mentored three of the poster presenters at the 2018 RRD: **Dr. Doreen**

Panzarella, "BD Affirm™ for diagnosis of bacterial vaginosis and effect on clinical management of vaginitis," **Dr. Shantel Jiggets**, "The distribution of HPV 16, HPV 18 and other high risk HPV associated with HSIL and cervical cancer compared by racial group" and a QA project with

Dr. Anita Patel, "Correlation of the State-Trait Anxiety Inventory-S (STAI-S) and postpartum Depression." In addition, Dr. Chappelle was co-author on two ACOG poster presentations.

"Optimal Duration of Urinary Catheterization After Cesarean Delivery" with **Dr. Odette Taha** and "Postpartum Utilization of Narcotics for Analgesia" with **Dr. Sara Kim**.



Todd Griffin, MD

Dr. Todd Griffin collaborates on multiple research projects, even with the demands on his time as Chairman of the Department of Obstetrics, Gynecology and Reproductive Medicine. He is involved in studies related to pregnancy and cadmium with *Dr. John Kovach* (Department of Family, Population & Preventive Medicine), and **Dr. James Bernasko** (Maternal Fetal Medicine). He is working closely with **Dr. Jenny Zhang**, MIS Fellow, on her project: "Understanding health care disparities in wait times at ObGyn resident clinics."

Dr. Griffin was also the PI on combined funding from the NYS Senate for both the Department of Obstetrics, Gynecology & Reproductive Medicine and Department of Urology for support of the ObGyn/Urology Women's Clinic.



Hafsa Memon, MD

Dr. Hafsa Memon has taken over the Department's project: "Using NYS SPARCS Database of Obstetrics, Gynecologic, and Gynecologic Oncology Outcomes for Research." She is working with *Dr. Jie Yang* from the Biostatistics core looking at hysterectomy and prolapse patients.

Dr. Memon received a grant from the Dean's office in support of this work, and is being mentored by **Dr. Michael Pearl**.



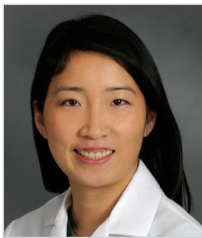
Christina Pardo, MD, MPH

Dr. Christina Pardo continues her commitment as the Director of the Health Sector on a statewide collaboration involving 10 SUNY campuses and five not-for-profit organizations to establish a sustainable village and learning community in Akayè, Haiti. Dr. Pardo is also working closely with **Dr. Melissa Peskin-Stolze** to develop a global medicine track for our residents. Based on her interest in global women's healthcare she has been mentoring Nia Boyd, an MPH student on "Assessment of gynecologic care among immigrant and underserved populations."



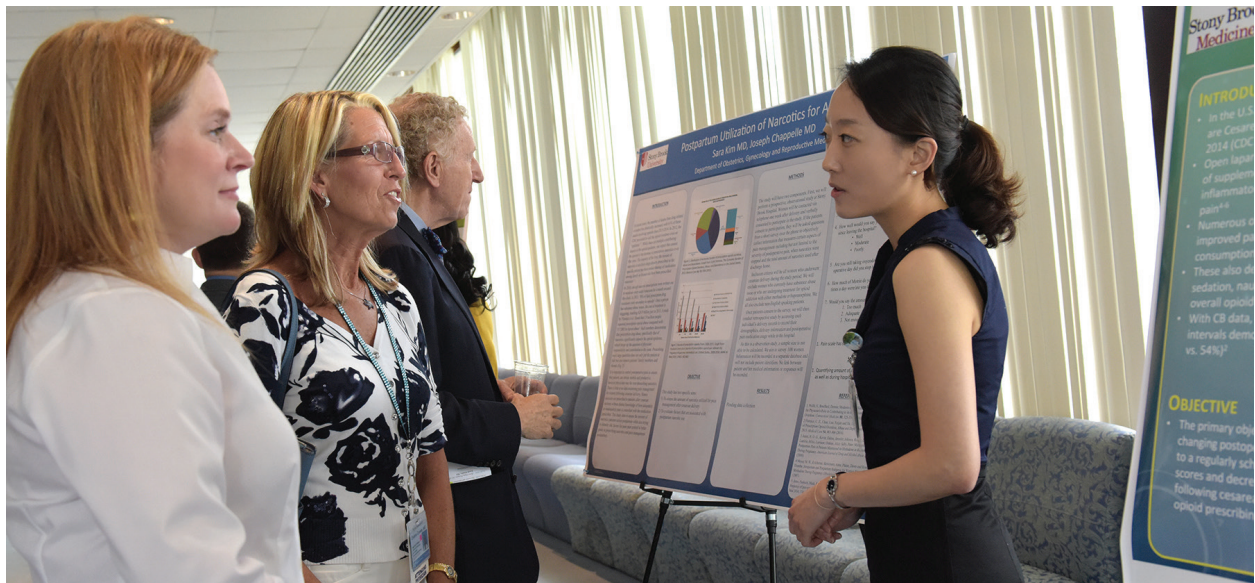
Melissa Strafford, MD

Dr. Melissa Strafford continues in her role as Associate Residency Program Coordinator. She and **Dr. Chappelle** mentored **Dr. Ayisha Buckley** on her project: "Retrospective Analysis of Post Abortal Retained Products of Conception." In addition, they both mentored **Dr. Lindsey Michel** with her project: "Incidence of Post-Partum Hemorrhage Pre and Post Oxytocin Protocol Implementation." Both of these projects were presented at this year's Resident Research Day.



Jenny Zhang, MD

Dr. Jenny Zhang is one of our two Minimally Invasive Surgery (MIS) Fellows. She developed and is executing a project: "Understanding health care disparities in wait times at ObGyn resident clinics," assessing differences in service between patients with Medicaid or private insurance at clinics across the country.



Dr. Sara Kim presenting her work at Resident Research Day

Maternal Fetal Medicine



Cecilia Avila, MD

Dr. Avila was co-author on two posters presented at the American Institute of Ultrasound in Medicine (AIUM): "Ductus arteriosus measurements and morphology in a single fetus with increasing gestational age: A descriptive analysis" and "Ductus arteriosus measurements and morphology: Does gender matter?"



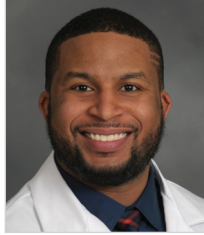
David Baker, MD

Dr. Baker was a coinvestigator on **Dr. Michael Demishev's** thesis project, a prospective clinical study: "Effects of Progesterone on Biochemical Markers in Pregnancy." Dr. Baker was a co-author on three presentations: a study on vitamin D levels in breast milk in women with a history of bariatric surgery that was presented at both the Society of Maternal Fetal Medicine (SMFM) and the American College of Obstetricians and Gynecologists (ACOG) meetings, and a second "Progesterone Effects on Vaginal Cytokines in Women with a History of Preterm Birth" based on data from **Dr. Demishev's** study that was also presented at ACOG. He was also the co-author of "Cytomegalovirus, herpes simplex virus, adenovirus, coxsackivirus, a chapter in the 5th edition of High-Risk Pregnancy: Management Options online.



James Bernasko, MD, CHB, CDE

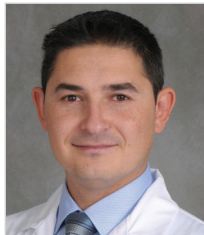
Dr. James Bernasko contributes critical clinical insights as a specialist in high risk pregnancy to multiple collaborators, including *Dr. Brittain Mahaffey* (Department of Psychiatry) and *Dr. Maricedes Acosta-Martinez* (Department of Physiology and Biophysics). He continues to collaborate on "Pregnancy and Cadmium Study (PACS)" with **Dr. Todd Griffin** (General Gynecology & Obstetrics) and *Dr. John Kovach* (Department of Family, Population & Preventive Medicine). He and *Dr. Maricedes Acosta-Martinez* (Department of Physiology & Biophysics) submitted a Fusion Research TRO project to the Dean's office for support of their project looking at exosomes and MiRNA in pregnancy. Dr. Bernasko was a co-author on **Dr. Kimberly Herrera's** paper on maternal serum analyte screening in the *Journal of Gynecology and Obstetrics* and on seven posters with **Dr. Jennie Ou** (Ob/Gyn Resident) and **Dr. Malini Persad** (MFM Fellow).



Jay Davis, MD

Dr. Jay Davis, our first year MFM Fellow, began his research endeavors in the deep end of the pool with a randomized control trial (RCT) to be run in the Division's Maternal Opioid Management Support (MOMS) clinic. He spent the past year obtaining IRB approval for the study: "A Randomized Control Trial of Buprenorphine vs. Buprenorphine/naloxone on the Effects of Maternal Symptomatology" for PI **Dr. David Garry**. Dr. Davis is also working with **Dr. Diana Garretto** to supervise **Dr. Cara Staszewski** (resident)

and **Victoria Ly** (medical student) on their project: "Demographics and Neonatal Abstinence Syndrome in Pregnant Women with Active Opioid Abuse Compared to Pregnant Women on Opioid Maintenance Medications Over the Last 10 Years in a Tertiary Care Hospital." In addition, Dr. Davis is working on three retrospective reviews. Two of these: "Does Early Pregnancy Hemoglobin A1C Screening Predict Adverse Pregnancy Outcome?" and "First trimester maternal serum alpha fetoprotein and its association with preeclampsia and other adverse pregnancy outcomes" are being done at NYU Winthrop Hospital, the third: "Does Supplemental Vaginal Progesterone Improve Pregnancy Outcomes in Patients receiving 17OH-P or Cervical Cerclage with Developing Cervical Shortening?" at Stony Brook.



Michael Demishev, MD

Dr. Michael Demishev completed the work on his prospective clinical study: "Effects of Progesterone on Biochemical Markers in Pregnancy" and presented it as his thesis study. The study was done to assess immune physiologic response due to progesterone supplementation in pregnant women by evaluating the biochemical markers in vaginal rinses as compared to women who did not receive these interventions. The work was presented as a poster at ACOG. Dr. Demishev was co-author on four additional posters at ACOG, SMFM and the AIUM.



Dr. Gerald Quirk (Maternal Fetal Medicine) in discussion at the weekly Chairman's Rounds

Maternal Fetal Medicine

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Cheryl Dinglas, DO

Dr. Cheryl Dinglas, our second year MFM Fellow, was actively involved in six projects this year, three of which focus on her strong interest in gestational diabetes.

Immediate postpartum glucose tolerance testing in women with gestational diabetes (GDM):

This prospective cohort study attempts to find a solution to the poor follow up rate for the standard 4-12 week postpartum glucose tolerance test (GTT) used to determine if women need

closer follow up for glucose intolerance. Women with GDM at NYU Winthrop Hospital are enrolled and undergo postpartum glucose tolerance testing on postpartum days 2-4 in addition to standard recommended testing at 4-12 weeks postpartum. Pilot data was published in the *American Journal of Perinatology* in which results demonstrate that an immediate 75 gram GTT has a high sensitivity and high negative predictive value when compared to the standard 4 to 12 week GTT. Collaboration with the CDC to pool data due to small sample sizes at various academic centers is underway.

Labor Stage specific glycemic management in women with gestational diabetes decreases neonatal hypoglycemia:

This is a retrospective cohort study conducted at NYU Winthrop Hospital, evaluating laboring patients with gestational diabetes and undergoing intrapartum glycemic management before and after a labor stage specific standardized protocol was established in April 2017. The primary outcome is the neonatal intensive care unit (NICU) admission rate for neonatal hypoglycemia. Data has been collected and results analyzed demonstrating a reduction in NICU admission for neonatal hypoglycemia as well as a reduction in maternal hypoglycemia and C-section rate for non-reassuring fetal heart rate tracings. This data has been presented at several meetings/conferences.

Utility of software-guided insulin dosing for intrapartum glycemic management in women with diabetes:

This retrospective cohort study, also conducted at Winthrop, evaluated whether introduction of a software-guided insulin dosing program compared to standard insulin dosing charts would improve the rate of maternal glycemic control in labor. Data were collected on patients with diabetes who were placed on an insulin infusion during their labor course from January 2012 through December 2017 whose intrapartum glycemic management was achieved using standard insulin dosing charts, versus the software-guided insulin dosing program called GlucoStabilizer which was implemented after May 2016. The results demonstrated a 9-fold increase in reaching target glucose in labor (9 percent of women in target at time of delivery using standard insulin dosing charts versus 81 percent using software-guided insulin dosing), without increasing maternal hypoglycemia. This data has been presented as a talk and posters at several meetings/conferences. The manuscript was recently accepted by the *American Journal of Obstetrics and Gynecology* and plans for a prospective clinical trial are being considered.

First trimester msAFP and association with adverse pregnancy outcomes: This ongoing retrospective cohort study involving both Stony Brook University and NYU Winthrop Hospitals is evaluating whether first trimester maternal serum alpha-fetoprotein (msAFP) is associated with adverse pregnancy outcomes. It is well established that abnormal maternal serum biomarkers are associated with adverse pregnancy outcomes, but a combination of these biomarkers still yields low sensitivity. Most studies demonstrating an association with adverse pregnancy outcomes use second trimester msAFP levels in combination with serum biomarkers and ultrasound. With the recent implementation of first trimester msAFP in screening for aneuploidy, there is the potential to improve sensitivity and allow an opportunity for better screening for adverse pregnancy outcomes earlier in pregnancy. Thus, this study looks to determine the relationship of first trimester msAFP levels and adverse pregnancy outcomes, with the primary outcome of early onset preeclampsia (<34 weeks).

Evaluating practice patterns since the introduction of late preterm ACS: This retrospective cohort study is evaluating how practice patterns have adhered to the newly recommended guidelines for late antenatal corticosteroids (ACS). As of February 2016, administration of antenatal corticosteroids to infants born late preterm (34 and 0/7 through 36 and 6/7 weeks) demonstrated a reduction in the rate of neonatal respiratory complications. However, women are not considered candidates if they are likely to deliver within 12 hours (e.g., deemed unstable, nonreassuring fetal status), have received a prior course of betamethasone, have pre-gestational diabetes, multiple gestation, chorioamnionitis, or any other contraindication to betamethasone. The reasons for this ineligibility criteria are based on the fact that these women were not included in the study and outcomes for these populations are not known. Thus, this study also aims to assess both maternal and neonatal outcomes in patients where trials have not studied their effects or when eligibility is unclear.

Hemoglobin A1C (HbA1c) and prevalence of prediabetes and overt diabetes in early pregnancy: This retrospective cohort study is examining the prevalence of prediabetes and overt diabetes in pregnancy from HbA1C values. Pregnancy provides an opportunity for women with pre-existing diabetes to be diagnosed and treated. Early pregnancy screening for undiagnosed type 2 diabetes, preferably at the initiation of prenatal care, is suggested in obese women and those with a history of GDM. Based on the American Diabetes Association (ADA) guidelines, measurement of hemoglobin A1C (HbA1C) can be used for the diagnosis of preexisting diabetes. With its reproducibility and ease of testing, first trimester HbA1C can diagnose pre-existing diabetes in all pregnant patients. At our institution, first trimester HbA1C has been included in prenatal laboratory evaluation for all pregnant patients registering for prenatal care since July 2014. Thus, this study would like to determine prevalence of undiagnosed preexisting overt diabetes and prediabetes based on first trimester HbA1C values in pregnancy. In addition, the study will evaluate how HbA1C values correlate with further diabetes testing both antepartum and postpartum.

During the year, these projects have resulted in two papers (one published and one accepted for publication) as well as eight poster presentations and 1 talk. Dr. Dinglas was also awarded the Poster of Distinction at the 11th Annual Winthrop Research Day for: "Stage specific intrapartum glycemic management in women with gestational diabetes improves neonatal outcomes."



Diana Garretto, MD

Dr. Diana Garretto was PI on eight research projects: supervising three resident projects, one MFM Fellow's thesis and two medical student Scholar in Medicine projects as well as two projects of her own. She also participated as a co-investigator on an additional five projects.

What are the differences in maternal and neonatal morbidity/mortality at Stony Brook University Hospital over the past five years based on zip code: a Resident project for **Dr. Christina Johnson** was designed to

assess maternal and neonatal outcomes in Suffolk County by zip code in order to identify specific subpopulations with outcomes below the national standard. Healthy people 2020 is a national initiative that outlines objectives for improving the care of Americans, including improving well-being for mothers, infants and children. It is well known that there are increased adverse health outcomes in patients from lower socioeconomic statuses and that socioeconomic status is an independent risk factor for various adverse Ob/Gyn related health outcomes including: preterm birth, small for gestational age, rates of cervical cancer, etc. Suffolk County is often thought of as affluent and demographically homogenous, however it is becoming increasingly

Maternal Fetal Medicine

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diverse. There are multiple underserved areas in Suffolk County with health outcomes akin to underserved areas in inner cities. Analysis of public health data in Suffolk County shows that it fares well in many maternal and perinatal outcomes, but falls below the benchmark in others, including perinatal and neonatal death rates that fall below statewide benchmarks. Although there are many excellent maternal/fetal outcomes across Suffolk County, it is possible that there are still specific subpopulations with outcomes below the national standard. This study used zip codes as a geographical marker to attempt to determine if poor outcomes localized in specific regions.

A retrospective look at fetal growth restriction at St. Damien Hospital in Haiti: a Resident Global health project with **Dr. Ayisha Buckley** included collaborators **Dr. Christina Pardo** and **Dr. Melissa Peskin** (both General Gynecology & Obstetrics). The diagnosis of fetal growth restriction (FGR) is based on discrepancies between actual and expected sonographic biometric measurements for a given gestational age and has traditionally been defined as <10 percentile weight for gestational age. A weight <10th percentile alone however, does not distinguish between the constitutionally small fetus from uteroplacental insufficiency. When ultrasound examination suggests fetal growth restriction, prenatal care involves confirming the suspected diagnosis, determining the cause and severity of FGR, managing maternal comorbidities, counseling the patient, closely monitoring fetal growth trajectory and wellbeing, and determining the optimal time for and route of delivery using serial assessment of fetal well-being. The complications of FGR include, stillbirth, neonatal death, neonatal morbidity, and abnormal neurodevelopmental outcomes are more common in growth restricted fetuses than in those with normal growth. The prognosis worsens with early onset and increasing severity of growth restriction. There are no studies on this subject matter in the literature (fetal growth restriction in a Haitian population) so a retrospective chart review of all women with FGR compared to women with AGA fetuses was performed between Jan 1, 2012 and December 1, 2017.

Correlation between patient understanding of intrapartum course and satisfaction with labor and delivery experience: was **Dr. Hannah Valdes'** resident project and included **Dr. Gina Milone** (first year resident) and **Dr. Malini Persad** (3rd year Fellow) as collaborators. In recent years, there has been a growing focus on patient satisfaction as a quality measure in hospitals. In labor and delivery wards, in particular, the patient experience has become a topic of extensive discussion. Multiple studies have looked at the various aspects that relate to patient satisfaction with the birthing experience. Despite the variability in the care that women receive prenatally and during delivery and the multiple tools used to assess patient satisfaction, studies have found striking similarities in what women want out of their delivery experience. Factors that have continually been identified as contributing to higher patient satisfaction on the labor ward include patient perception of control, communication with doctors and nurses, and personal feeling of preparedness. Studies have also shown that a woman's prenatal care affects her expectations of delivery and, hence, her satisfaction. However, there is a paucity of research extending into how much each of these factors directly contributes to the patient's perception of the quality of her experience. What can be gathered from the published data is the importance of a woman's understanding of her pregnancy and delivery and her ability to communicate effectively with her treatment team. This study sought to elucidate the strength of this association between patient understanding and satisfaction with the delivery experience through use of a survey. The survey results/patient's understanding of her labor and delivery were then correlated with the clinical record.

A Randomized Control Trial of Vitamin D Prophylaxis in the Prevention of Hypertensive Disorders of Pregnancy: a 3rd year MFM fellow thesis for **Dr. Malini Persad** included collaborators **Dr. Kimberly Herrera, Dr. Michael Demishev, Dr. David Garry, Dr. Gerald Quirk, and Dr. Cynthia Kaplan** (Department of Pathology). Vitamin D not only plays a crucial role in maintaining bone health for the mother and baby but also modulates maternal blood pressure and immune response and placental implantation and function. It is no surprise, therefore, that studies have found that Vitamin D deficiency is associated with an array of adverse maternal and neonatal outcomes, including hypertensive disorders of pregnancy, gestational diabetes, infection, preterm delivery, low birth weight, and neonatal fractures. While studies have consistently demonstrated that Vitamin D supplementation improves maternal and neonatal serum vitamin D levels, data on its benefits in preventing adverse pregnancy outcomes have been inconsistent. As such, the American Congress of Obstetricians and Gynecologists has called for high quality studies to address whether the use of Vitamin D supplementation beyond that found in prenatal vitamins is beneficial. This study was a randomized control trial to assess if Vitamin D prophylaxis in a cohort of pregnant women reduces the incidence of hypertensive disorder of pregnancy. Women were recruited from Stony Brook Hospital's Obstetrics and Gynecology outpatient clinic sites. Eligible women completed a demographic form and a food frequency questionnaire. Maternal blood samples were collected at the time of recruitment and on the day of admission for delivery. Cord blood samples were also collected at the time of delivery. Blood samples were assessed for 25(OH)D levels. The placentas were sent to pathology for gross and histological examination. The hope is that data from this study will support an NIH grant application to continue to the project and more fully review the placentas.

Demographics and Neonatal Abstinence Syndrome in Pregnant Women with Active Opioid Abuse Compared to Pregnant Women on Opioid Maintenance Medications Over the Last 10 Years in a Tertiary Care Hospital: this Medical Scholars Program project with current 3rd year student **Victoria Ly** Included collaborators: **Dr. Kimberly Herrera, Dr. David Garry, Dr. Malini Persad, Dr. Cara Staszewski** and **Dr. Cynthia Kaplan** (Department of Pathology). According to the American Congress of Obstetricians and Gynecologists, chronic opioid abuse during pregnancy has been associated with complications including fetal growth restriction, placental abruption, fetal death, preterm labor, and intrauterine passage of meconium. Additionally, neonates are at risk for narcotic withdrawal (neonatal abstinence syndrome (NAS)), as well as poor social situations and infectious diseases, emphasizing the importance of maintenance therapy with methadone and buprenorphine to combat opioid addiction for the health of the neonate as well as the mother. Therefore, it is essential to determine the demographics and maternal/neonatal outcomes in women with ongoing opioid abuse compared to pregnant women on opioid maintenance medications. The observed demographic differences between the women of the two groups will help pinpoint characteristics that may make a pregnant woman less or more inclined to report their addiction. This information will better future physician-patient relationships and improve prenatal care by addressing the needs of specific groups. Likewise, the differences in severity of neonatal abstinence syndrome may improve counseling in patients anxious to try maintenance medications.

Promoting Labor Progress to Prevent the Primary Cesarean-Before and After Educational Intervention: the Medical Scholars Program project for second year medical student **Nikitha Karkala** included collaborators: **Dr. Heather Findletar Hines** (Midwifery), **Dr. Malini Persad, and Dr. Kimberly Herrera**. Since January of 2016, we have led a quality improvement initiative in our labor and delivery unit to decrease the rate of cesarean deliveries in low risk women through education on active labor, the labor curve, the definition of a large baby, the definition of when labor progress has stopped, interventions to help labor progress, and identification of a woman who

Maternal Fetal Medicine

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has a cervix favorable for delivery. The objective is to determine if education and interventions on the labor and delivery suite can help to reduce the rate of primary cesarean in nulliparous, term, singleton, vertex presentation women. The primary outcome is the rate of primary cesarean overall (for low risk women) for the 2014 and 2015 (before the QA project started) compared to the rate in 2016 and until September 27, 2017. The secondary outcomes are the following: percentage of women at ≥ 6 cm dilated when cesarean performed; rate of primary cesarean in NTSV patients of midwives, private attendings, and faculty attendings.

Ductus Arteriosus changes with increasing gestational age was done with collaborators: **Dr. Malini Persad, Dr. Kimberly Herrera, Dr. Ayisha Buckley, Dr. Michael Demishev, Dr. David Garry, Dr. Gerald Quirk, Dr. Cecilia Avila, and Dr. James Bernasko.** The ductus arteriosus (DA) is one of three shunts in fetal circulation that transfers oxygenated blood into the systemic circulation. It is observed that while the aorta remains straight in the pregnancy, the DA appears more and more curved as the pregnancy progressed. This distinction is important to avoid misdiagnosis of a normally progressing DA as an anomaly. Therefore, the objective of this study was to create a nomogram of the DA length by gestational age and to evaluate the distribution of the three morphologic gradings in 4 different gestational ages in the fetuses of pregnant women. The routine anatomy ultrasound was used to enroll patients and then three other follow up growth ultrasounds were done.

Retrospective cohort study of Vitamin D deficiency in pregnant and postpartum breastfeeding women after bariatric surgery was done with collaborators **Dr. David Baker, Dr. Tatyana Peresleni, and Dr. Malini Persad.** Fifty percent of gastric bypass procedures are performed in women of child-bearing age. Consequently, physicians are highly likely to encounter pregnant women who have had bariatric surgery. Much of the current literature on pregnant women who have had gastric bypass surgery focuses on the beneficial effects of gastric bypass surgery on gestational diabetes mellitus, pre-eclampsia and the reduced incidence of macrosomic infants. However, nutritional deficiencies in women post-bariatric surgery are common; thus it is likely that there are a significant number of post-bariatric women with unrecognized nutritional deficiencies that may result in adverse fetal outcomes and neonatal programming for metabolic disease in adulthood. These surgical procedures often result in malabsorption and therefore women are at risk for fat soluble vitamin deficiencies including vitamin D deficiency. Retrospectively collected, de-identified samples in the third trimester in pregnant women, cord blood, and postpartum blood were used for 25-hydroxy-vitamin D analysis in the Stony Brook University Department of Ob/Gyn. Breast milk samples of colostrum (postpartum day 1-7), transitional milk (postpartum 7-21 days), and mature milk (6 weeks postpartum) were also analyzed for 25-hydroxy vitamin D in the Stony Brook University Department of Ob/Gyn.

In addition, Dr. Diana Garretto was an active collaborator on: "Effects of progesterone on biomarkers in pregnancy: with **Dr. Michael Demishev**, "Risk Factors for failure of metformin use in diabetes in pregnancy," "Does a cesarean in the second stage of labor confer an increased risk of cervical insufficiency in the subsequent pregnancy?" and "Pre-operative antibiotics and the risk of post-operative cesarean infection" all with **Dr. Kimberly Herrera.** Her 5th collaboration is on Dr. David Garry's RCT of buprenorphine in pregnancy (see description on page 21).

This year Dr. Garretto had one paper published and has another in review. She was co-author on 18 meeting presentations: nine at ACOG, two each at SMFM and AIUM, one each at the Society for Reproductive Investigation (SRI) and the New York Perinatal Society (NYPS) and three at our own Resident Research Day.



David Garry, DO

Dr. David Garry has extensive clinical and administrative responsibilities. He is both the Maternal Fetal Medicine Division Director and the Director of Labor and Delivery (L&D). With his limited time for his own research, Dr. Garry focuses his efforts on various aspects of opioid abuse in pregnancy.

A Randomized Control Trial of Buprenorphine vs Buprenorphine/naloxone in Pregnancy was a major undertaking this year with completion of IRB approval for the study to be run in the MOMS clinic as **Dr. Jay Davis'**

thesis project. Opioid use disorders in pregnancy have known adverse social, economic, legal and health ramifications on both the mother and developing fetus. Opioid use in pregnancy has been associated with adverse pregnancy outcomes including neonatal abstinence syndrome, prolonged hospital stay, intrauterine growth restriction, and fetal demise. Inadequately treated opioid disorders can lead to maternal withdrawal symptoms, increased cravings, at risk behaviors, and other illicit substance usage. Research endeavors continue to explore optimal treatment regimens to prevent and decrease some of the known maternal and newborn adverse outcomes. Buprenorphine has many preferential characteristics over methadone, including decreased risk of maternal overdose, lower incidence of preterm labor, less frequent clinical visits, shorter duration of neonatal hospital stay and treatment for neonatal abstinence syndrome. A combination of buprenorphine and naloxone has the added benefit of preventing diversion of the opioid medication therapy to illicit use. This study will directly compare the two opiate formulations looking at outcomes assessed by a variety of measures including: monthly COWS and drug cravings questionnaires, maternal and cord blood samples and maternal and neonatal outcomes collected from the electronic medical record.

Due to his expertise in high risk pregnancy, Dr. Garry is also a very sought after collaborator. He was included on seven grant applications this year. In July, he was a member of the mentorship team on *Dr. Brittain Mahaffey's* (Department of Psychiatry) NIH K23 resubmission: "An Internet-Delivered Mind-Body Program for Reducing Prenatal Maternal Stress" with *Dr. Marci Lobel* (Department of Psychology, School of Arts and Sciences, SBU). This application was officially funded in 2018. In August, Dr. Garry, and *Dr. I.V. Ramakrishnan* (Department of Computer Science, School of Engineering, SBU) were co-investigators on **Dr. J. Gerald Quirk's** and *Dr. Petar Djurić's* (Department of Electrical Engineering, School of Engineering, SBU) NIH R01 resubmission: "Predictive analytics for monitoring the well-being of fetuses." In February, Dr. Garry, **Dr. Diana Garretto**, **Dr. Kimberly Herrera**, **Dr. Michael Demishev**, and *Dr. I.V. Ramakrishnan* (Department of Computer Science, School of Engineering, SBU) were co-investigators on **Dr. J. Gerald Quirk's** and *Dr. Petar Djurić's* (Department of Electrical Engineering, School of Engineering, SBU) new NIH R01 "Rethinking Electronic Fetal Monitoring to Improve Perinatal Outcomes and Reduce Frequency of Operative Vaginal and Cesarean Deliveries." Also in February, Dr. Garry and **Dr. Christina Kocis** (Midwifery) were coinvestigators with PI *Dr. James Swain* (Department of Psychiatry) on an NIH R01: "Opioids and Maternal Brain-Behavior Adaptation during the Early Postpartum." The same team had a second R01 application in June: "Stress and Brain Mechanisms of Drug Relapse in Buprenorphine Medicated Postpartum Women." Also in June, Dr. Garry was a co-investigator on *Dr. Helen Fox's* (Department of Psychiatry) new NIH R01 "The impact of buprenorphine maintenance (BPM) on maternal, fetal and neonatal stress." Dr. Garry was a coauthor on 13 poster presentations: nine at ACOG in Austin, TX, two at the AIUM; New York, NY, one at the 38th SMFM Annual Pregnancy Meeting in Dallas, TX, and one at Stony Brook Medicine's 12th Annual Women in Medicine Research Day.

Maternal Fetal Medicine

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Kimberly Herrera, MD

Dr. Kimberly Herrera, in addition to her clinical duties this year, had extensive research activities including six projects that she was directing and an additional five that she substantially collaborated on.

Risk factors for Failure of Metformin Use in Diabetes in Pregnancy was **Dr. Jennie Ou's** RRD retrospective cohort project which investigated risk factors for metformin failure in GDM. Four posters were accepted to ACOG: "Does pregnancy weight gain increase the risk of metformin failure

in treatment of gestational diabetes?" "Can the two-hour glucose tolerance test (GTT) values predict metformin failure in women with gestational diabetes," "Can body mass index predict metformin failure in women with gestational diabetes?" and "Can initial glycemic control predict metformin failure in women with gestational diabetes?" A fifth presentation was done at the ADA: "Predictors of Metformin Failure in the Treatment of Gestational Diabetes." In addition to Dr. Ou, co-authors on these were: **Drs. Malini Persad, James Bernasko, Gerald Quirk, and Diana Garretto**. Data collection is complete and the manuscript is written and currently being edited prior to submission.

Does a C-section in the 2nd stage of labor increase the risk of cervical insufficiency in future pregnancies? Residents **Dr. Ayisha Buckley** and **Dr. Gina Milone** have been working on this retrospective case controlled study. This study looked at women who have had a Cesarean Section in the 2nd stage of labor as compared to those who have not to determine if there is a higher risk of cervical insufficiency in subsequent pregnancies. They each have presented posters of the work: "Does a Second Stage Cesarean Section Increase the Risk of Cervical Insufficiency in Future Pregnancies?" (**Dr. Buckley**) and "Are second stage cesarean deliveries associated with cervical insufficiency in future pregnancies" (**Dr. Milone**) at SRI and the New York Perinatal Society, respectively. Data collection is complete and a manuscript is in review at Journal of Perinatal Medicine preparation. **Drs. Malini Persad** and **Diana Garretto** were collaborators and coauthors on this work.

Preoperative antibiotics and the risk of post-operative Cesarean section infection is a QA project with resident **Dr. Christina Johnson** looking at infection rates pre and post the addition of Azithromycin to preoperative antibiotics to Cesarean section patients. Data collection is still underway.

First trimester maternal serum alpha fetoprotein (msAFP) and its association with preeclampsia and other adverse pregnancy outcomes is a retrospective study with **Dr. Cheryl Dinglas** (MFM Fellow), as well as **Dr. Elizabeth Cochrane** (resident), looking at outcomes in pregnancy if the msAFP is elevated. Data collection is ongoing.

Evaluating practice patterns since the introduction of late preterm antenatal corticosteroids is also a retrospective study with **Dr. Dinglas**, and residents **Dr. Vaibhavi Umesh** and **Dr. Cochrane**, looking at adherence to the new recommendation for late preterm steroids. Data is still being collected.

The accuracy of sonographic diagnosis of vasa previa is **Dr. Cara Staszewski's** (resident) project. It is a retrospective looking at how well physicians have diagnosed and managed vasa previa over the last 10 years. Data collection is complete and abstract submission is planned.

In addition, Dr Herrera is supporting others in their research efforts by collaborating on five projects. She is collaborating with **Dr. Lisa Pastore** on patient surveys regarding decision making process for patients as they are deciding to undergo CVS or amniocentesis. **Drs. Ayisha Buckley** and **Gina Milone** have been helping with data collection, which is about half done.

Dr. Herrera is collaborating with **Dr. Malini Persad** (MFM fellow) and **Dr. Diana Garretto** on a randomized control trial (RCT) of Vitamin D prophylaxis for prevention of preeclampsia by recruiting and enrolling patients. She is also a co-author on two of **Dr. Persad's** posters for this project: "Does vitamin D prophylaxis in pregnancy decrease the risk of adverse neonatal outcomes?" at ACOG and "Does vitamin D prophylaxis in pregnancy decrease the risk of adverse maternal outcomes?" at the 38th SMFM Annual Pregnancy Meeting.

Two more collaborations, one with **Dr. Garretto** and medical student Victoria Ly, the second with **Dr. David Garry, Dr. Garretto** and **Dr. Jay Davis** (MFM Fellow) are both looking at aspects of addiction in pregnancy. The first, a retrospective study looking at pregnancies complicated by substance abuse at Stony Brook has produced three ACOG posters: "Does buprenorphine decrease the risk of neonatal abstinence syndrome in mothers with opioid use disorder," "Does opioid maintenance therapy decrease the risk of neonatal withdrawal in mothers with opioid use disorder?" and "Does using psychiatric medication exacerbate neonatal abstinence syndrome in pregnancy in women using opioid maintenance therapy?" The second collaboration is an RCT looking at buprenorphine vs suboxone for opioid maintenance therapy in pregnancy. This is submitted to the IRB and awaiting approval. In addition, Dr. Herrera was a co-author on Dr. Cara Staszewski's RRD poster: "Are there placental histological changes associated with opioid exposure during pregnancy?"

Dr. Herrera collaborated with **Dr. Garretto** on a prospective ultrasound project that looked at changes in the ductus arteriosus in fetuses by helping to recruit and enroll patients. This has resulted in two AIUM posters: "Ductus arteriosus measurements and morphology in a single fetus with increasing gestational age: A descriptive analysis" and "Ductus arteriosus measurements and morphology: Does gender matter?" with coauthors **Drs. Malini Persad, Ayisha Buckley, Michael Demishev, Cecelia Avila, David Garry, Gerald Quirk, James Bernasko** and **Diana Garretto**.

Finally, Dr. Herrera was first author on a paper: "Utility of Maternal Serum Analyte Screening in the Era of Cell-free Fetal DNA" in the Journal of Gynecology & Obstetrics.



Malini Persad, MD

Dr. Malini Persad completed her 3rd and final year as an MFM Fellow with an extremely extensive list of accomplishments. Her Fellow's thesis was based on data from an RCT: "A Randomized Control Trial of Vitamin D Prophylaxis in the Prevention of Hypertensive Disorders of Pregnancy" conducted under the guidance of **Dr. Diana Garretto**. This work, done in collaboration with medical student Victoria Ly and **Drs. Kimberly Herrera, Michael Demishev, Gerald Quirk, Diana Garretto** and **David Garry** was presented as a poster: "Does vitamin D prophylaxis in pregnancy decrease the risk of

adverse neonatal outcomes?" at both ACOG and SMFM.

Dr. Persad was a first or co-author on 18 additional presentations on a range of topics. Five of these were poster presentations focused on Gestational Diabetes (GDM): "Does pregnancy weight gain increase the risk of metformin failure in treatment of gestational diabetes?" "Can the two-hour glucose tolerance test (GTT) values predict metformin failure in women with gestational diabetes?" "Can body mass index predict metformin failure in women with gestational diabetes?" and "Can initial glycemic control predict Metformin failure in women with gestational diabetes?" all presented at ACOG and "Predictors of Metformin Failure in the Treatment of Gestational Diabetes" presented at the 15th Biennial Meeting of the Diabetes in Pregnancy Study Group of North America. This work was done in collaboration with former resident **Dr. Jennie Ou** and **Drs. James Bernasko, David Garry, Diana Garretto** and **Kimberly Herrera**.

Maternal Fetal Medicine

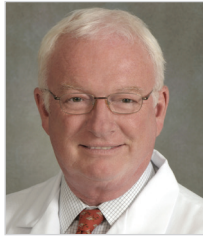
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Dr. Persad had three ACOG posters with Victoria Ly, and **Drs. Kimberly Herrera, David Garry** and **Diana Garretto** on addiction: "Does buprenorphine decrease the risk of neonatal abstinence syndrome in mothers with opioid use disorder?" "Does opioid maintenance therapy decrease the risk of neonatal withdrawal in mothers with opioid use disorder?" and "Does using psychiatric medication exacerbate neonatal abstinence syndrome in pregnancy in women using opioid maintenance therapy?"

She was the first author on two posters from **Dr. Diana Garretto's** Ductus Arteriosus project: "Ductus arteriosus measurements and morphology in a single fetus with increasing gestational age: A descriptive analysis" presented at the American Institute of Ultrasound Medicine Annual Convention and "Ductus arteriosus measurements and morphology: Does gender matter?" presented at AIUM. These were co-authored with **Drs. Ayisha Buckley, Kimberly Herrera, Michael Demishev, Cecelia Avila, David Garry, Gerald Quirk, James Bernasko** and **Diana Garretto**.

Dr. Persad also authored two posters from **Dr. Garretto's** bariatric patient vitamin D study: "Are vitamin D levels lower in the breast milk of bariatric surgery patients?" at ACOG and "Does maternal vitamin D deficiency correlate with lower vitamin D levels in breast milk in women with a history of bariatric surgery?" at the 38th SMFM Annual Pregnancy Meeting. Co-authors on these were **Drs. Tatyana Peresleni, David Baker, Ayisha Buckley, and Diana Garretto**.

In addition to her own projects, Dr. Persad was an active mentor to many of the Residents and helped them to produce four additional posters, and she was a major contributor to **Dr. Michael Demishev's** progesterone project.



J. Gerald Quirk, MD, PhD

Dr. J. Gerald Quirk had a busy year with his own research as well as supporting others. His collaboration with *Dr. Petar M. Djurić* (Department of Electrical and Computer Engineering, School of Engineering, SBU) on new approaches in fetal heart rate monitoring continues. In addition to *Dr. I.V. Ramakrishnan* (Department of Computer Science, School of Engineering, SBU), *Dr. Christian Luhmann* (Department of Psychology, School of Arts & Sciences, SBU) has joined the team. This year the project has yielded one Patent Application:

"Apparatus and method for feature extraction and classification of fetal heart rate"; and two publications: "Dynamic classification of fetal heart rates by hierarchical Dirichlet process mixture models" with graduate student Kezi Yu and "Recovery of Missing Samples in Fetal Heart Rate Recordings with Gaussian Processes" with graduate student Guanchao Feng. Dr. Quirk and Dr. Djurić continued their efforts to obtain funding with three grant applications: an NIH R01 resubmission of "Predictive analytics for monitoring the well-being of fetuses" and a new R01 submission "Rethinking Electronic Fetal Monitoring to Improve Perinatal Outcomes and Reduce Frequency of Operative Vaginal and Cesarean Deliveries" both with co-investigators **Dr. David Garry** and *Dr. I.V. Ramakrishnan* (Department of Computer Science, School of Engineering, SBU). An NSF grant: "Advanced analytics with transparency for improved decision making during intrapartum fetal health monitoring," was also submitted with Dr. Djurić as PI.

Dr. Quirk was co-author on 6 posters. He co-directed a roundtable discussion: "Real world experience with seeking grant funding" with **Dr. Lisa Pastore** (Research Division) for the Research Division's monthly meeting and he was a co-author on a paper: "Placental Alpha Microglobulin-1 Compared With Fetal Fibronectin to Predict Preterm Delivery in Symptomatic Women.

Midwifery

Our growing division of midwives epitomize collaborative research in a clinical environment, with an unparalleled track record in patient recruitment and has more than once helped to salvage studies by encouraging many of their patients to participate. All of the practitioners (**Christina Kocis, CNM, DNP, Director; Kristen Clemens, CM; Evangelia Falkner, CNM; Heather Findletar-Hines, CNM, DNP; Maria Fisher, CNM, MSN, MPH, IBCLC; Pamela Koch, CNM, IBCLC; Goldie McBride, CM; Joan Nastasi, CNM, NMS; Michelle Salz, CNM; Kathleen Sharrott, CNM; Amanda Sini, Elizabeth Sullivan, CNM; Ann Visser, CNM; and Rakiya Watts, CMN**) actively participate in multiple projects and are key to the successful integration of research into clinical practice. The Midwifery Division's expertise in communication and education makes them well-suited as the critical link between patients and our research efforts.

On the many projects that they support, the midwives participate in the full range of research activities: design, subject identification, patient recruitment, survey execution, biosample and data collection, analysis and presentation. During the past year, the midwives were the primary collaborators on "Social Identities in Pregnancy: Effects on Maternal Health and Birth Outcomes" and "Experiences of Expectant Fathers" both with *Marci Lobel, PhD* (Department of Psychology, School of Arts & Sciences, SBU); and "The Effect of Peripartum Antibiotics on Vertical Transmission of the Maternal Microbiome" with *Gretchen Mockler, MD* (Department of Family, Population & Preventive Medicine). In addition, they provide significant support to other projects, including: "Characterization of circulating miRNAs from placenta exosomes in women with normal weight vs. obese women of different ethnic groups" with *Maricedes Acosta-Martinez, PhD* (Department of Physiology and Biophysics); and "Adapting a Comprehensive Mind-Body Group Intervention for Pregnant Women" with *Brittain Mahaffey, PhD* (Department of Psychiatry).

In addition to their group participation, individual members of the Division had their own achievements.



Heather Findletar-Hines, CNM, DNP

Dr. Heather Findletar-Hines and **Dr. Diana Garretto** (Maternal Fetal Medicine) continued to collaborate on "Promoting Labor Progress to Prevent the Primary Cesarean- Before and After Educational Intervention," an ACNM (American College of Nurse-Midwives) QI project to decrease cesareans in nulliparous, term, singleton and vertex presentation women. In addition, Dr. Findletar-Hines is the Interim Director for the Advanced Practice Nursing Program (MS) in Nurse Midwifery at Stony Brook's School of Nursing.



Maria Fisher, CNM, MSN, MPH, IBCLC

Maria Fisher submitted an application for a grant to support her efforts to expand the breast feeding clinic to the Rita and Alex Hillman Foundation's Hillman Innovations in Care Program.



Christina Kocis, CNM, DNP

Dr. Kocis was a co-investigator along with **Dr. David Garry** (Maternal Fetal Medicine) on two NIH grant submissions with PI *Dr. James Swain* (Department of Psychiatry): "Opioids and Maternal Brain-Behavior Adaptation during the Early Postpartum" and "Stress and Brain Mechanisms of Drug Relapse in Buprenorphine Medicated Postpartum Women." She was also co-author (representing the Midwifery Division) on a publication that resulted from collaboration with *Dr. Marci Lobel* (Department of Psychology School of Arts & Sciences, SBU) and her graduate students: "Patient-provider communication predicts lower distress and better self-care in pregnancy."

Gynecologic Oncology



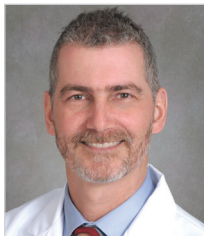
Marlo Dombroff, MS, PA-C

Marlo Dombroff has been successfully recruiting participants for her ongoing project: "Treatment Related Cognitive Dysfunction in Endometrial Cancer," a long term clinical study examining mental function and dysfunction in patients diagnosed with endometrial cancer. In addition, she was co-author with **Dr. Michael Pearl** (Gynecologic Oncology) and **Dr. Wen-Tien Chen** (Research Division) on "CTC drug resistance (CDR) testing ex vivo for evaluation of available therapies to treat patients with epithelial ovarian cancer."



Gabrielle Gossner, MD

Dr. Gabrielle Gossner was a co-investigator of *Dr. Anat Biegon's* (Department of Neurology) NIH R21 application: "Targeting Aromatase in Ovarian Cancer: PET Studies with [¹¹C]vorozole."



Michael Pearl, MD

Dr. Michael Pearl serves as the Vice Chairman for Research and Faculty Development. Dr. Pearl's personal research efforts are extensive. He frequently mentors residents and is currently working with **Samantha Dayton** (Research Division) and MD/PhD student *Greg Kirschen* to build a database of pre-operative testing for gynecological surgery.

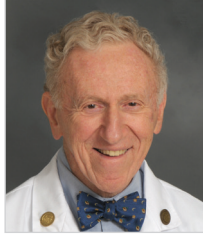
Dr. Pearl's collaboration with **Dr. Wen-Tien Chen** (Research Division) resulted in two research contract applications to Vitatex: "Metastasis-focused diagnostic blood tests" and "Cancer cell enrichment platform."

He currently has a funded contract: "Vita-Cap Tube to Preserve Circulating Tumor Cells in Blood (Phase I & II)," also from Vitatex.

Dr. Pearl is the Principal Investigator for numerous Stony Brook clinical trials through the gynecological oncology portion of the NRG Oncology Cooperative Group (formerly GOG). This resulted in eight co-authorships, including five published papers, two meeting abstracts and one submitted paper (see Department Publications). Dr. Pearl, with co-authors **Dr. Chen** and **Marlo Dombroff, MS, PA-C**, published: "iCTC drug resistance (CDR) testing ex vivo for evaluation of available therapies to treat patients with epithelial ovarian cancer." He co-authored a chapter: "Ovarian, fallopian tube and primary peritoneal cancer" in *The American Cancer Society's Oncology in Practice - Clinical Management*.

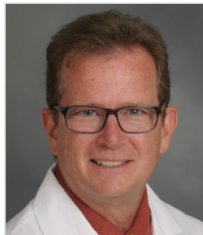
In addition to his clinical and research responsibilities, Dr. Pearl has continued his active community outreach efforts, giving four presentations this year: "HPV and the Cervical Cancer Connection," "The Unique Challenges of End-of-Life Care," "Cervical Cancer, Including Pap Smear Update" and "Extreme measures; Finding a better path to the end of life."

Reproductive Endocrinology



Richard Bronson, MD

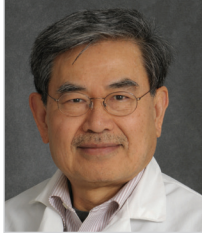
Dr. Richard Bronson supervises the annual Resident and Fellows Research Day. His own research, on male fertility, has produced a manuscript: "Detection of candidate nectin gene mutations in infertile men with severe teratospermia" with co-authors *Dr. Dmitri Gnatenko* (Department of Medicine, Genomics Core) and *John Schwedes* (DNA Microarray Facility). He also published "Taking Sides" in *Family Medicine. The Male Role in Pregnancy Loss and Embryo Implantation Failure*, for which he was the editor, which has had a total of 13,292 chapter downloads since its online publication, making it one of the top 50 percent most downloaded eBooks in the relevant Springer International eBook Collection in 2017.



James Stelling, MD

Dr. James Stelling is a close, regular collaborator with **Dr. Lisa Pastore** (Research Division). Together, they are exploring a variety of subjects relevant to female infertility, including: continued work on FMR1 and ovarian insufficiency, other aspects of ovarian reserve and genetics, and the emotional and social impact of the stress involved in pre-implantation genetic testing. This year he was co-author on four publications: "Psychological and emotional concomitants of infertility diagnosis in women with diminished ovarian reserve and anatomical cause of infertility" "Reproductive Ovarian Testing and the Alphabet Soup of Diagnoses: DOR, POI, POF, POR and FOR" "Review of Patient Decision-Making Factors and Attitudes Regarding Preimplantation Genetic Diagnosis" and "Psychological and emotional concomitants of infertility diagnosis in women with diminished ovarian reserve or anatomical cause of infertility." Dr. Stelling was co-investigator on three NIH grant applications with **Dr. Lisa Pastore** as PI. These were: "Whole Exome Sequencing and Copy Number Variants in Young Women with Diminished Ovarian Reserve (DORSeq Study)" and "The Prevalence of BRCA1/2 and Genes Associated with the BRCA1/2 Pathway Among Women with Diminished Ovarian Reserve" both with co-investigators from Johns Hopkins, and "Genetic Testing of Embryos for Inherited Childhood Conditions: Influences on Individual Decisional Distress and Uncertainty from Ethical Concerns and Health Information Seeking" with co-investigators *Dr. Marci Lobel* (Department of Psychology, School of Arts and Sciences, SBU) and *Dr. Lisa Rubin* (Department of Psychology, New School for Social Research).

Research



Wen-Tien Chen, PhD

Dr. Wen-Tien Chen's publications this year included: "Assessing Clinical Outcomes in Colorectal Cancer with Assays for Invasive Circulating Tumor Cells" in *Biomedicines* with **Dr. Michael Pearl** (Gynecologic Oncology) and "iCTC drug resistance (CDR) Testing ex vivo for evaluation of available therapies to treat patients with epithelial ovarian cancer" in *Gynecologic Oncology* with **Dr. Pearl** and **Marlo Dombroff, MS, PA-C** (both Gynecologic Oncology).



Lisa Pastore, PhD

Dr. Lisa Pastore has continued her multi-pronged research on various aspects of infertility with several active projects underway. The first two focus on patients' attitudes to genetic testing.

Preimplantation Genetic Testing (PGT) Study: This year, the interview portion of the study was launched and completed. Specifically, 17 informed consents and 15 interviews were done. An initial quantitative analysis of the first 50 completed questionnaires (excluding questionnaires from the interviewees) was run. In terms of completed questionnaires, approximately 100 individuals have completed most/all of the anonymous questionnaires thus far, though certainly some stopped after the first page or two (incomplete surveys). Ten states are represented in the responses! Recruitment-wise, through the end of March 2018, 2050 unique visitors came to the recruitment website, and there were 4100 page views of the website. The website was changed from "dot com" to "dot org," and that definitely increased website traffic but not the number of questionnaire responses. The Virginia and New England Resolve Support Groups informed their participants about the study, and it was also publicized once through the national Inspire/Resolve social networking site. An NIH R21 application "Genetic Testing of Embryos for Inherited Childhood Conditions: Influences on Individual Decisional Distress and Uncertainty from Ethical Concerns and Health Information Seeking" was submitted with co-investigators **Dr. James Stelling** (Reproductive Endocrinology), *Dr. Marci Lobel* (Department of Psychology, School of Arts and Sciences, SBU) and *Dr. Lisa Rubin* (Department of Psychology, New School for Social Research). Three publications: "Psychological and emotional concomitants of infertility diagnosis in women with diminished ovarian reserve and anatomical cause of infertility," "Review of Patient Decision-Making Factors and Attitudes Regarding Preimplantation Genetic Diagnosis" and "Psychological and emotional concomitants of infertility diagnosis in women with diminished ovarian reserve or anatomical cause of infertility" also resulted from this work.

Prenatal Genetic Testing Study: This is an extension of the PGT Study into the Maternal Fetal Medicine prenatal clinics in collaboration with **Dr. Kimberly Herrera**. Approximately 30 questionnaires were completed through the end of March 2018. This questionnaire is now available in English and Spanish, both on paper and online. Various clinicians, including residents and genetic counselors, are involved in encouraging patients to complete this questionnaire. A summer 2018 abstract submission to a national conference is anticipated.

The remaining projects are outgrowths of Dr. Pastore's long standing interest in the genetic basis of infertility, especially Diminished Ovarian Reserve (DOR). This involves collaboration with both Stony Brook: **Dr. James Stelling** (Reproductive Endocrinology) and external colleagues: *Drs. M.S. Christianson, W.G. Kearns and J.H. Segars* at Johns Hopkins and *Dr. M. Hill* at Walter Reed.

FMR1 Gene and IVF Outcomes: was a major literature review done in support of two presentations at a national conference, a post-doctoral course: "The FMR1 Gene in Female Infertility" and a talk: "The Ovarian Function of the FMR1 Gene." The material is now being prepared as a review article: "Is There an Impact from the FMR1 gene on In Vitro Fertilization Success?" with the Johns Hopkins collaborators. The majority of the review (including summary tables) was completed by an OB/GYN resident from Winthrop Hospital (Baily McGuinness). The material was subsequently summarized into PowerPoint slides for presentation, and then subsequently used to support presentation at our department's Grand Rounds: "The Importance of FMR1 in the OB/GYN Clinic" in addition to the extramural publications.

X Chromosome Analysis in DOR Patients: To increase productivity with the Johns Hopkins group, and strengthen the ties for collaboration and grant applications, Dr. Pastore mined her data from an X chromosome sequencing study from 2013-2014 that had never been published, but had been used in prior NIH grant submissions. These data are being used for articles and abstracts, including a recent submission: "Is There an Impact from the FMR1 gene on In Vitro Fertilization Success?" The group resubmitted an NIH R01: "Whole Exome Sequencing and Copy Number Variants in Young Women with Diminished Ovarian Reserve (DORSeq Study)" and published a review paper: "Reproductive Ovarian Testing and the Alphabet Soup of Diagnoses: DOR, POI, POF, POR and FOR."

BRCA1/2 Genes and DOR: A recent NIH call for applications looking at links between infertility and women's health led to the development of this R21 application to NIH: "The Prevalence of BRCA1/2 and Genes Associated with the BRCA1/2 Pathway Among Women with Diminished Ovarian Reserve" with co-investigator **Dr. James Stelling** (Reproductive Endocrinology) and the team from Johns Hopkins and Walter Reed.

In addition to her research, Dr. Pastore is very involved in mentoring and resident education. She is the official mentor for two of our junior faculty, **Dr. Diana Garretto** and **Dr. Kimberly Herrera** (both Maternal Fetal Medicine Division). In this capacity, she is guiding their evolution as active researchers, as well as acting as a professional development resource. This year, as part of her education efforts at Stony Brook, Dr. Pastore collaborated with **Dr. J.G. Quirk** (Maternal Fetal Medicine) to present "Real world experience with seeking grant funding" at the Department of Ob/Gyn Monthly Research Meeting. She also participated in a state conference: "The Richmond Fertility Workshop: The Road to Parenthood."

Publications

Stony Brook Medicine Ob/Gyn members are listed in bold.

Awards

Heo H, **Dinglas C**, Fanning K, Peragallo-Dittko V, Muscat J, Adams T, Vintzileos A. "Labor Stage specific intrapartum glycemic management in women with gestational diabetes improves neonatal outcomes." Poster of Distinction: NYU Winthrop's 11th Annual Research Day. New York, NY, April 2018.

Poljak D, Chappelle J. "Post-operative pain control following Cesarean birth: Should NSAIDs play a bigger role?" Oral presentation: Ob/Gyn Resident Research Day. Stony Brook, NY. June 2018

Publications

Bronson R, Mikhailik A, Schwedes J, Gnatenko D, Hatchwell E. Detection of Candidate Nectin Gene Mutations in Infertile Men With Severe Teratospermia. *J Assist Reprod Genet.* 2017 Oct; 34(10):1295–1302, doi: 10.1007/s10815-017-0985-4. PMID: 28689229

Bronson R. Taking Sides. *Fam Med.* 2018; 50(3):233-233, doi: 10.22454/FamMed.2018.671436

Zhang Y, Zarrabi K, Hou W, Madajewicz S, Choi M, Zucker S, **Chen WT.** Assessing Clinical Outcomes in Colorectal Cancer with Assays for Invasive Circulating Tumor Cells. *Biomedicines.* 2018 Jun 6; 6(2). doi: 10.3390/biomedicines6020069. PMID: 29882767

Dinglas C, Muscat J, Heo H, Islam S, Vintzileos A. Immediate Postpartum Glucose Tolerance Testing in Women with Gestational Diabetes: A Pilot Study. *Am J Perinatol.* 2017 Oct; 34(12):1264-1270. doi: 10.1055/s-0037-1606620. PMID: 28910846

Sheen JJ, Reimers L, Govindappagari S, Ngai IM, **Garretto D**, Donepudi R, Tropper P, Goffman D, Dayal AK, Bernstein PS. A SWIFT Method for Handing Off Obstetrical Patients on the Labor Floor. *J Patient Saf.* 2017 Jul 6. doi: 10.1097/PTS.0000000000000377. PMID: 28691973

Herrera KM, Lewis D, Foroutan J, Bimson B, **Bernasko J**, Tambini-King L. Utility of Maternal Serum Analyte Screening in the Era of Cell-free Fetal DNA. *J Gynec Obstet.* 2017; 1(1):006

Nicoloro-SantaBarbara J, Rosenthal L, Auerbach M, **Kocis C**, Busso C, Lobel M. Patient-provider communication predicts lower distress and better self-care in pregnancy. *Soc Sci Med.* 2017 Oct; 190:133-140. doi: 10.1016/j.socscimed.2017.08.011. PMID: 28863336

Nicoloro-SantaBarbara J, Lobel M, Bocca S, **Stelling J, Pastore LM.** Psychological and emotional concomitants of infertility diagnosis in women with diminished ovarian reserve and anatomical cause of infertility. *Fertil Steril.* 2017 Jul; 108(1):161-167. doi: 10.1016/j.fertnstert.2017.05.008. PMID: 28579416

Pastore LM, Christianson MS, **Stelling J**, Kearns WG, Segars JH. Reproductive Ovarian Testing and the Alphabet Soup of Diagnoses: DOR, POI, POF, POR and FOR. *J Assist Reprod Genet.* 2018 Jan; 35(1):17-23. doi: 10.1007/s10815-017-1058-4. PMID: 28971280

Genoff Garzon MC, Rubin LR, Lobel M, **Stelling J, Pastore LM.** Review of Patient Decision-Making Factors and Attitudes Regarding Preimplantation Genetic Diagnosis. *Clin Genet.* 2018 Jul; 94(1):22-42. doi: 10.1111/cge.13174. 11. PMID: 29120067

Nicoloro-SantaBarbara J, Lobel M, Bocca S, **Stelling J, Pastore LM**. Psychological and emotional concomitants of infertility diagnosis in women with diminished ovarian reserve or anatomical cause of infertility. *Fertil Steril*. 2017 Jul; 108(1):161-167. doi: 10.1016/j.fertnstert.2017.05.008. Epub 2017 Jun 1. PMID: 28579416

Cosgrove C, Tritchler DL, Cohn DE, Mutch DG, Rush CM, Lankes HA, Creasman WT, Miller DS, Ramirez NC, Geller MA, Powell MA, Backes FJ, Landrum LM, Timmers C, Suarez AA, Zaino RJ, **Pearl ML**, DiSilvestro PA, Lele SB, Goodfellow PJ. An NRG Oncology/GOG study of molecular classification for risk prediction in endometrioid endometrial cancer. *Gynecol Oncol*. 2018 Jan; 148(1):174-180. doi: 10.1016/j.ygyno.2017.10.037. PMID: 29132872

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Felix AS, Brasky TM, Cohn DE, Mutch DG, Creasman WT, Thaker PH, Walker JL, Moore RG, Lele SB, Guntupalli SR, Downs LS, Nagel C, Boggess JF, **Pearl ML**, Ioffe OB, Deng W, Miller DS, Brinton LA. Endometrial carcinoma recurrence according to race and ethnicity: An NRG Oncology/Gynecologic Oncology Group 210 Study. *Int J Cancer*. 2018 Mar 15; 142(6):1102-1115. doi: 10.1002/ijc.31127. Epub 2017 Nov 6. PMID: 29063589

Richardson DL, Sill MW, Coleman RC, Sood AK, **Pearl ML**, Kehoe SM, Carney ME, Hanjani P, Van Le L, Zhou XC, Alvares Secord A, Gray HJ, Landrum LM, Lankes HA, Hu W, Aghajanian C. Paclitaxel With and Without Pazopanib for Persistent or Recurrent Ovarian Cancer: A Randomized Clinical Trial. *JAMA Oncol*. 2018 Feb; 4(2):196-202. doi: 10.1001/jamaoncol.2017.4218. PMID: 29242937

Bishop ER, Moore KN, Spirtos NM, **Pearl ML**, Zivanovo, Zushner DM, Backes F, Hamilton CA, Geller MA, Hurteau JA, Mathews C, Wenhem RM, Ramirez PT, Zweizig SL, Walker JL. Surgical outcomes among a geriatric population of uterine cancer patients: An NRG Oncology/Gynecologic Oncology Group ancillary data analysis of LAP2. *Am J Obstet Gynecol* (in press)

Pearl ML, Dong H, Zhao Q, Tulley S, **Dombroff MK, Chen WT**. iCTC drug resistance (CDR) Testing ex vivo for evaluation of available therapies to treat patients with epithelial ovarian cancer. *Gynecol Oncol*. 2017 Nov; 147(2):426-432. doi: 10.1016/j.ygyno.2017.08.018. PMID: 28830645

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Feng G, **Quirk JG**, Djurić PM. Recovery of Missing Samples in Fetal Heart Rate Recordings with Gaussian Processes. *Proceedings 25th EUSIPCO*. 2017 Aug; 261-265.10.23919/EUSIPCO.2017.8081209. DOI 10.5281/zenodo.1160195 <http://www.eurasip.org/Proceedings/Eusipco/Eusipco2017/papers/1570347673.pdf>

Publications

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Submitted

Dinglas C, Talucci E, Muscat J, Adams T, Peragallo-Dittko V, Vintzileos A, Heo H. Gluco Stabilizer software guided insulin program improves intrapartum glycemic control in women with pre-gestational and gestational diabetes requiring an insulin infusion. *AJOG*. (accepted)

Buckley A, Chittineedi N, **Milone G**, **Persad M**, **Garretto D**, **Herrera K**. Are second stage cesarean deliveries associated with cervical insufficiency in future pregnancies? *Journal of Perinatal Medicine*. (in review)

Pastore LM, Christianson MS, McGuinness B, Vaught KC, Maher JY, and Kearns WG. Is There an Impact from the FMR1 gene on In Vitro Fertilization Success? *Reproductive BioMedicine Online*. (in review)

Tewari KS, Sill MW, Monk BJ, Penson RT, Moore DH, Lankes HA, Ramondetta LM, Landrum LM, Randall L, Oaknin A, Leitao MM, Eisenhauer E, DiSilvestro P, Van Le L, **Pearl ML**, Burke J, Salani R, Michael HE, Birrer MJ. Circulating tumor cells as a predictive biomarker for anti-angiogenesis therapy in advanced cervical cancer: An NRG Oncology Gynecologic Oncology group study. *JNCI* (in review)

Book Chapters

Aziz N, **Baker D**. Cytomegalovirus, Herpes Simplex Virus, Adenovirus, Coxsackievirus, and Human Papillomavirus in Pregnancy. In *High-Risk Pregnancy: Management Options: Five-Year Institutional Subscription with Online Updates* (pp. 660-695); Eds: D. James, P. Steer, C. Weiner, B. Gonik, & S. Robson. 2017 Oct; Cambridge: Cambridge University Press.

Pearl ML, Stevens EE, Varughese J. Ovarian, fallopian tube and primary peritoneal cancer. In: *The American Cancer Society's Oncology in Practice - Clinical Management*. Eds: The American Cancer Society. 2018 Feb; Online ISBN: 9781118592168. DOI: 10.1002/9781118592168

Patent Application

Shishir D, **Quirk JG**, Djurić PM. Apparatus and method for feature extraction and classification of fetal heart rate—US Patent App. 15/824,215, US20180078160A1 March 2018

Abstracts/Meeting Presentations

Buckley A, Chittineedi N, **Milone G**, **Persad M**, **Garretto D**, **Herrera K**. "Does a Second Stage Cesarean Section Increase the Risk of Cervical Insufficiency in Future Pregnancies?" poster: SRI's 65th Annual Scientific Meeting. San Diego, CA. March 2018

Buckley A, **Strafford M**, **Chappelle J**. "Retrospective Analysis of Post Abortal Retained Products of Conception". Oral presentation: Ob/Gyn Resident Research Day. Stony Brook, NY. June 2018

Demishev M, **Persad MD**, **Peresleni T**, **Baker D**, **Hilsenroth J**, **Garry D**. Progesterone Effects on Vaginal Cytokines in Women with a History of Preterm Birth. Poster: ACOG. Austin, TX. May 2018. *Obstetrics & Gynecology*. 131:56S doi: 10.1097/01.AOG.0000533034.50954.c2

Dinglas C, Muscat J, Heo H, Islam S, Vintzileos A. Does an immediate postpartum HbA1C or 2 hour glucose tolerance test (GTT) in women with gestational diabetes identify those at risk for persistent glucose intolerance? Poster: 15th Biennial Diabetes in Pregnancy Study Group Conference, Washington, DC, Oct 2017

Heo H, **Dinglas C**, Fanning K, Peragallo-Dittko V, Muscat J, Adams T, Vintzileos A Optimization of Intrapartum Glycemic Control in Women with Pregestational and Gestational Diabetes. Poster: NYU Winthrop's 6th Annual Performance Improvement Poster Session, Mineola, NY, Oct 2017

Dinglas C, Muscat J, Heo H, Boryushkina V, Ng N, Islam S, Vintzileos A. Does HbA1C correlate with Birth weight and adverse neonatal outcomes in gestational diabetics? Poster: 15th Biennial Diabetes in Pregnancy Study Group Conference, Washington, DC, Oct 2017

Dinglas C, Talucci E, Muscat J, Adams T, Peragallo-Dittko V, Vintzileos A, Heo H. The use of a GlucoStabilizer software program improves intrapartum glycemic control in women with pre-gestational and gestational diabetes requiring an insulin infusion. Poster: 38th SMFM Annual Pregnancy Meeting, Dallas, TX, February 2018. American Journal of Obstetrics & Gynecology. 218(1):S596 doi: <https://doi.org/10.1016/j.ajog.2017.11.546>

Dinglas C, Muscat J, Adams T, Peragallo-Dittko V, Vintzileos A, Heo H. Software-guided insulin dosing improves intrapartum glycemic management in women with diabetes mellitus. Poster: 38th Annual Meeting of the Society for Maternal Fetal Medicine; Dallas, TX, February 2018. American Journal of Obstetrics & Gynecology.219(2):191.e1 - 191.e6 doi: <https://doi.org/10.1016/j.ajog.2018.05.003>

Dinglas C, Talucci E, Muscat J, Adams T, Peragallo-Dittko V, Vintzileos A, Heo H. Utility of software-guided insulin dosing for intrapartum glycemic management in women with diabetes. Oral presentation: NY Perinatal Society meeting, New York, NY, April 2018 and Poster: NYU Winthrop's 11th Annual Research Day, New York, NY, April 2018.

Heo H, **Dinglas C**, Fanning K, Peragallo-Dittko V, Muscat J, Adams T, Vintzileos A. Standardization of intrapartum glycemic management in women with gestational diabetes improves neonatal outcomes. Poster: 38th SMFM Annual Pregnancy Meeting, Dallas, TX, February 2018. American Journal of Obstetrics & Gynecology. 218(1):S596-S597 doi: <https://doi.org/10.1016/j.ajog.2017.11.547>

Heo H, **Dinglas C**, Fanning K, Peragallo-Dittko V, Muscat J, Adams T, Vintzileos A. Labor Stage specific intrapartum glycemic management in women with gestational diabetes improves neonatal outcomes. Poster: NY Obstetrical Society Meeting, New York, NY, April 2018. and Poster: NYU Winthrop's 11th Annual Research Day, New York, NY, April 2018. Awarded poster of distinction.

Jiggets S, Chappelle J. "The distribution of HPV 16, HPV 18 and other high risk HPV associated with HSIL and cervical cancer compared by racial group" Poster: Ob/Gyn Resident Research Day, Stony Brook, NY, June 2018

Johnson C, Garretto D. "What are the differences in Maternal/Neonatal Morbidity and Mortality at Stony Brook University Hospital based on the differences in Providers of Prenatal Care and Zip Code?" Poster: Ob/Gyn Resident Research Day, Stony Brook, NY, June 2018

Publications

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Kim S, Chappelle J. Postpartum Utilization of Narcotics for Analgesia. Poster: ACOG. Austin, TX. May 2018. *Obstetrics & Gynecology*. 131:126S–127S, doi: 10.1097/01.AOG.0000533531.13541.c7

Kim S, Chappelle J. "Postpartum Utilization of Narcotics for Analgesia", Oral presentation: Ob/Gyn Resident Research Day. Stony Brook, NY. June 2018

Ly V, **Persad MD, Herrera K, Garry D, Garretto D.** "Does buprenorphine decrease the risk of neonatal abstinence syndrome in mothers with opioid use disorder?" Poster: ACOG. Austin, TX. May 2018. *Obstetrics & Gynecology*. 131:159S, doi: 10.1097/01.AOG.0000533122.79665.49

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Milone G, Buckley A, Chittineedi N, Persad M, Garretto D, Herrera K. Are second stage cesarean deliveries associated with cervical insufficiency in future pregnancies? Poster: New York Perinatal Society, Manhattan, NY. April 2018.

Ou JP, Persad MD, Bernasko J, Quirk JG, Herrera K. Predictors of Metformin Failure in the Treatment of Gestational Diabetes. *Diabetes*. Poster: 15th Biennial Meeting of the Diabetes in Pregnancy Study Group of North America. Washington, DC. October 2017.

Panzarella D, Chappelle J. "BD Affirm™ for diagnosis of bacterial vaginosis and effect on clinical management of vaginitis" Poster: Ob/Gyn Resident Research Day. Stony Brook, NY. June 2018

Pastore LM, Quirk JG. "Real world experience with seeking grant funding." Department of Ob/Gyn Monthly Research Meeting. November 2017

Pastore LM. "The FMR1 Gene in Female Infertility." Led: Post-Doctoral Course, Annual 2017 National Conference of the Foundation for Reproductive Medicine in Translational Reproductive Biology and Clinical Reproductive Endocrinology. November 2017

Pastore LM. "The Ovarian Function of the FMR1 Gene." Oral Presentation: Annual 2017 National Conference of the Foundation for Reproductive Medicine in Translational Reproductive Biology and Clinical Reproductive Endocrinology. November 2017

Pastore LM. "The Importance of FMR1 in the OB/GYN Clinic." Department of Ob/Gyn Grand Rounds. March 2018

Patel A, Chappelle J. "Correlation of the State-Trait Anxiety Inventory-S (STAI-S) and postpartum Depression". Poster: Ob/Gyn Resident Research Day. Stony Brook, NY. June 2018

Felix AS, Cohn DE, Brasky TM, Mutch DG, Creasman WT, Thaker P, Walker JL, Moore RG, Lele SB, Guntupalli SR, Downs LS, Nagel C, Boggess JF, **Pearl ML**, Ioffe OB, Deng W, Randell ME, Brinton

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Persad MD, Peresleni T, Baker D, Pimentel V, Buckley A, Garretto D. Are vitamin D levels lower in the breast milk of bariatric surgery patients?" Poster: ACOG. Austin, TX. May 2018. Obstetrics & Gynecology. 131: 156S–157S doi: 10.1097/01.AOG.0000533114.69938.d6

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Persad M, Buckley A, Herrera K, Dar P, Demishev M, Avila C, Garry D, Quirk J, Bernasko J, Garretto D. Ductus arteriosus measurements and morphology in a single fetus with increasing gestational age: A descriptive analysis Poster presented at: American Institute of Ultrasound Medicine Annual Convention; New York City, NY, USA.

Persad M, Buckley A, Herrera K, Dar P, Demishev M, Avila C, Garry D, Quirk J, Bernasko, Garretto D. Ductus arteriosus measurements and morphology: Does gender matter? Poster presented at: American Institute of Ultrasound in Medicine; New York City, NY, USA.

Persad MD, Ly V, Herrera K, Demishev M, Quirk JG, Garretto D. "Does vitamin D prophylaxis in pregnancy decrease the risk of adverse neonatal outcomes?" Poster: ACOG. Austin, TX. May 2018. Obstetrics & Gynecology. 131: 160S–161S doi: 10.1097/01.AOG.0000533129.31245.69

Persad MD, Ly V, Herrera K, Demishev M, Quirk J, Garry D, Garretto D. "Does vitamin D prophylaxis in pregnancy decrease the risk of adverse maternal outcomes?" Poster: 38th SMFM Annual Pregnancy Meeting. Dallas, TX, February 2018. American Journal of Obstetrics & Gynecology. 218(1):S131 doi:<https://doi.org/10.1016/j.ajog.2017.10.074>

Persad MD, Ou J, Bernasko J, Garry D, Garretto D, Herrera K. "Does pregnancy weight gain increase the risk of metformin failure in treatment of gestational diabetes?" Poster: ACOG. Austin, TX. May 2018. Obstetrics & Gynecology. 131:50S doi: 10.1097/01.AOG.0000533014.92643.df

Persad MD, Ou J, Bernasko J, Garry D, Garretto D, Herrera K. "Can the 2-hour glucose tolerance test (GTT) values predict metformin failure in women with gestational diabetes?" Poster: ACOG. Austin, TX. May 2018. Obstetrics & Gynecology. 131:56S doi: 10.1097/01.AOG.0000533033.73824.9e

Persad MD, Ou J, Bernasko J, Garry D, Garretto D, Herrera K. "Can body mass index predict metformin failure in women with gestational diabetes?" Poster: ACOG. Austin, TX. May 2018. Obstetrics & Gynecology. 131:107S-108S doi: 10.1097/01.AOG.0000533464.55299.af

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Persad MD, Ou J, Bernasko J, Garry D, Garretto D, Herrera K. "Can initial glycemic control predict metformin failure in women with gestational diabetes?" Poster: ACOG. Austin, TX. May 2018. *Obstetrics & Gynecology*. 131:30S doi: 10.1097/01.AOG.0000532940.96214.87

Persad MD, Staszewski C, Ly V, Garry D, Quirk JG. "Characteristics and outcomes of unexecuted postpartum sterilization in high risk low income obstetrical patients." Poster: ACOG. Austin, TX. May 2018. *Obstetrics & Gynecology*. 131:197S doi: 10.1097/01.AOG.0000533260.97110.1a

Poljak D, Chappelle J. "Post-operative pain control following Cesarean birth: Should NSAIDs play a bigger role?" Oral presentation: Ob/Gyn Resident Research Day. Stony Brook, NY. June 2018

Staszewski C, Persad M, Garry D, Quirk JG, Ly V. "Is Bilateral Salpingectomy a Safe and Effective Form of Postpartum Sterilization in High Risk Pregnancies?" Poster: Stony Brook Medicine's 12th annual Women in Medicine Research Day, May 2018

Staszewski S, Ly V, Kertowidjojo E, Kaplan C, Garretto D, Herrera K. "Are there placental histological changes associated with opioid exposure during pregnancy?" Poster: Ob/Gyn Resident Research Day. Stony Brook, NY. June 2018

Taha O, Chappelle J. Optimal Duration of Urinary Catheterization After Cesarean Delivery. Poster: ACOG. Austin, TX. May 2018. *Obstetrics & Gynecology*. 131:91S, doi: 10.1097/01.AOG.0000533405.59763.e0

Yang L, Thomas C, Resnick S, Acosta-Martinez M. "The effects of palmitic acid and linoleic acid on exosomal miRNAs released from mouse placental explants." Poster: Undergraduate Research & Creative Activities (URECA) Annual Meeting, Stony Brook University. April 2018

Community Outreach

Pearl, ML. "HPV and the Cervical Cancer Connection". CME Conference. New York State Society of Physician's Assistants. Tarrytown, NY

Pearl, ML. "The Unique Challenges of End-of-Life Care". CME Conference. New York State Society of Physician's Assistants. Tarrytown, NY

Pearl, ML. "Cervical Cancer, Including Pap Smear Update." 44th Annual Family Medicine Update. Department of Family Medicine. State University of New York at Stony Brook, Stony Brook, NY

Pearl, ML. "Extreme measures; Finding a better path to the end of life." Book Club Table Leader. American Academy of Hospice and Palliative Medicine Annual Assembly. Boston, MA



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