Since its inception, the Department of Obstetrics, Gynecology and Reproductive Medicine at Stony Brook University has been committed to creating and expanding knowledge of women’s health through basic and clinical research. During that time, the research conducted by the faculty, residents and medical students has altered the practice of medicine in the United States.

In 2010, Dr. J. Gerald Quirk consolidated the research activities of the Department into a research division and appointed Dr. David Baker as its initial director. Under Dr. Baker’s leadership, the Division supported those faculty and residents who were involved in research activities and assisted new faculty with developing their research projects. Dr. Quirk and Dr. Baker deserve tremendous credit for their leadership in support of the research mission of the Department. Dr. Todd Griffin assumed the Chairmanship of the Department in 2012 and has built upon the solid foundation laid by Drs. Quirk and Baker. Dr. Griffin’s steadfast commitment to the Department’s research mission has enabled us to substantially expand the Division’s activities.

I have had the privilege of serving as the Vice-Chairman for Research since 2014. I am, justifiably, I believe, extremely proud of the division’s accomplishments. It takes a team; our team is extraordinary and I am grateful to each and every one of them. In this, the first annual report of the Division of Research, you will find a summary our accomplishments.

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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 create and expand knowledge and importance of research by our 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 each of these pillars is dependent upon success in the remaining two.

**MISSION**

The Department of Obstetrics, Gynecology and Reproductive Medicine recognizes clinical care, education, and research. Excellence in each of these pillars is dependent upon success in the remaining two.

**Division Overview**

**Michael Pearl, MD | Vice-Chair for Research and Faculty Development**

Dr. Michael Pearl is Professor and Director of the Division of Gynecologic Oncology, as well as 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-Chair, 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**

Lisa Pastore recently joined the Division. She 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.

**Natalie Cnosija, MPH | Senior Research Support Specialist**

Stony Brook University alumna Natalie Cnosija is responsible for assisting faculty and residents in the development, design, and completion of obstetrics and gynecologic research projects, providing biostatistical and qualitative research support. In addition, Ms. Cnosija provides grant writing support and designs and delivers classroom sessions for formal resident research education. Ms. Cnosija frequently mentors undergraduate and medical students when they participate in Departmental research projects.

**Tatyana Peresleni, PhD | Research Scientist**

Research Scientist Tatyana Peresleni has more than twenty years of bench experience with skills including purification and analysis of nucleic acids, chromatin reconstitution and in vitro transcription, cell culture, cytokines, chemokine, and cell migration assays, as well as matrix metalloproteinase (MMP) assays and microbiological techniques. Her recent studies include identification of biomarkers for vulvodynia; the analysis of bacterial flora in patients with vaginosis; and biochemical risk assessment for pre-term delivery.

**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.

**Division Overview continued**

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

**Providing mechanisms to find collaborators in other departments**
Division Overview

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

- MICHAEL PEARL, MD, was appointed Vice-Chair for the Division
- LISA PASTORE, PHD, joined the Division as a Research Associate Professor
- NATALIE CRNOSJA, MPH, was hired as a full-time Senior Research Support Specialist to provide biostatistics and study design support
- ELIZABETH YOUNG (medical student, year 4) was named as the Division’s first Research Fellow, assisting with multiple studies, publications, and providing support to execute critical projects throughout the year
- The Department of Obstetrics, Gynecology and Reproductive Medicine began its collaboration with the New York State Department of Health, enabling the use of the SPARCS database for outcomes research
- IRB approved 50 of our projects
- Faculty and residents produced 15 peer-reviewed publications, 22 abstracts, and 3 book chapters

GRANTS
- A $275,000 (Direct cost) two year R21 grant from the National Institute of Health (NIH) for co-PIs DR. GERALD QUIRK and Dr. Petar M. Dijunin (Department of Electrical and Computer Engineering) for “Machine Learning with Generative Mixture Models for Fetal Monitoring”
- A $192,212 (Direct cost) NIH flow-through award from The Rector and Visitors of the University of Virginia for DR. LISA PASTORE and her project “FMR1 CGG Repeats in Primary Ovarian Insufficiency Women vs 2 Comparison Groups”
- A $30,000 (Total cost) award from the Babylon Breast Cancer Coalition to fund “Development of a genomic test for early detection of high-grade serous ovarian cancer,” a collaboration between DR. MICHAEL PEARL and Dr. Scott Powers (Department of Pathology)
- A $50,000 grant for DR. MICHAEL PEARL to fund Woman to Woman at Stony Brook University Cancer Center, a program of the Ovarian Cancer Research Fund
- A $81,865.00 subcontract to DR. PEARL from Vitatex, Inc. to fund “Biotech: Blood Assays to Analyze Tumor Heterogeneity and Drug Resistance”

Research Division Highlight

New Perspectives: Women and Fertility

LISA PASTORE, PHD. Research Associate Professor, had a productive year after joining the Department in June of 2014. She negotiated the transfer of her existing NIH funds from the University of Virginia to Stony Brook, submitted two additional NIH R01 applications, and obtained and maintained Stony Brook IRB approval for her continuing research. Her projects, which focus on women with FMR1 permutations and their resultant fertility challenges, seek to not only identify genetic markers of infertility, but to educate women about their conditions. The Journal of Genetic Counseling recently published such a study by Dr. Pastore and her co-investigators entitled “Attitudes Towards Potentially Carrying the FMR1 Premutation: Before vs After Testing of Non-Carrier Females with Diminished Ovarian Reserve” (December 2014). Dr. Pastore’s study focused on evaluating the perceptions of FMR1 (Fragile Mental Retardation 1) premutations amongst Diminishing Ovarian Reserve (DOR) patients undergoing genetic testing. Using self-administrated patient interviews, Dr. Pastore and her team analyzed participant attitudes towards FMR1 and Fragile X syndrome. Findings included an increase in concern about the consequential severity of FMR1 premutation; affirmations that test outcomes would affect patients’ course of action when undergoing future reproductive therapies; and responses suggesting that a positive result for the premutation would provide participants with an explanation for their difficulty conceiving, therefore, providing a sense of closure. The study was later presented as a poster at the October 2014 American Society of Reproductive Medicine (ASRM) annual conference.

In addition to her work in FMR1 permutations, Dr. Pastore has pursued other studies with collaborators Drs. Jim Stelling, MD (Reproductive Specialists of New York), and Marci Lobel, PhD (Department of Psychology), as well as four additional researchers from Johns Hopkins, the University of Kansas, and New York Genome Center. Dr. Pastore is an active mentor, having worked with four early investigators (one resident, medical student, graduate student, and undergraduate), while reviewing manuscripts for both Fertility & Sterility and The Journal of Genetic Counseling.
The Division of Research strives to conduct research and apply innovative findings on both a local and global level. Studies conceived and nurtured by Obstetrics and Gynecology faculty at Stony Brook Medicine are currently taking place across the world in locations including Haiti, India, and Panama. JULIANA OPATICH, MD, leads one such study that investigates the socioeconomic impact of long acting reversible contraceptives (LARCs) on the women of remote Ngabe villages in Bocas del Toro, Panama. According to Dr. Opatich, “Families in these villages live below poverty level and have very limited access to health care. Contraception is a major issue.” In her study, Dr. Opatich intends to use contraceptive implants, a convenient form of birth control, in consenting patients. Each woman will then be tracked to determine if this form of contraceptive, which has yet to be studied in third world communities, modifies the projected economic and social circumstances of the participant.

CHRISTINA PARDO MAXIS, MD, MPH recognized a similar need for research and growth in Haitian communities. In 2015, Dr. Pardo Maxis served as a Visiting Professor for Partners in Health, an NGO with the mission “to bring the benefits of modern medical science to those most in need of them.” With Dr. Xun “Julie” Lian, Chief Resident in Obstetrics at Stony Brook Medicine and collaborators at Maimonades Hospital and University Hospital, Mirebalais in Haiti, Dr. Pardo Maxis created didactic materials to teach laparoscopic gynecologic surgical methods. Pre- and post-workshop surveys were conducted to determine the efficacy of these materials and teachings, the results of which were later presented in an abstract at the 2014 American Association of Gynecologic Laparoscopists annual meeting and the 2015 American Congress of Obstetricians and Gynecologists (ACOG)/Council on Resident Education in Obstetrics and Gynecology (CREOG) meeting. Dr. Pardo Maxis intends to continue this work as well as a cervical cancer prevention and research program at the Albert Schweitzer Hospital in Desjardins, Haiti.

JOYCE VARUGHese, MD, is completing work in both the United States and India to explore the attitudes of South Asian and South Asian American parents towards the human papillomavirus (HPV) vaccine. Using surveys to research and analyze perceptions regarding the HPV vaccine, Dr. Varughese hopes to identify and address barriers to vaccination that might exist amongst these communities (see “Student Spotlight: Masra Shameem” on page 6 to learn how Dr. Varughese’s work as a mentor led to a Fulbright Scholarship and HPV vaccination research in India). Additionally, Dr. Varughese intends to partner with the Regional Cancer Centre in Trivandrum, India to research BRCA prevalence amongst South Asians and compare the efficacy of Allopathic versus Ayurvedic treatments for Cervical Dysplasia with Amrita Ayurvedic Medical College and Hospital in Kerala.

Research Highlights

Commitment to Global Health

Families in these villages live below poverty level and have very limited access to health care. Contraception is a major issue...

Dr. Julia Opatich

Residents learning laparoscopic gynecologic surgical methods in Haiti
Teaching the Next Generation

Four clinicians from our Division actively research and develop improved methods of medical education:

MELISSA HENRETTA, MD, MPH, Residency Program Director, along with Associate Residency Program Director ELIZABETH GARDUNO, MD, MPH, is responsible for the design, execution, and oversight of all Resident education in the Department. This year they have begun designing a new module of QA/QI projects for residents. Dr. Henretta’s involvement in clinical research is reflected in her patients’ participation in NRG clinical trials. She is mentoring three residents as they prepare for the department’s annual Resident Research Day (RRD).

Dr. Elizabeth Garduno is completing research to further enhance resident training by creating and executing a systematic approach to teaching informed consent. In addition, she will test the efficacy of using point of view (POV) cameras to train residents.

Director of the Obstetrics and Gynecology Clerkship, EVA SWOBODA, MD, has developed research projects to aid medical students. She recently presented a selection of her findings at the 2014 and 2015 joint ABOG/CAREOG (Association of Professors of Gynecology and Obstetrics/Council on Resident Education in Obstetrics and Gynecology) meetings, covering topics ranging from a “Learner Development Program” to foster professional identity and career planning (with collaborators Drs. Elizabeth Garduno and Lauri Budnick) to assessing medical student experiences in the operating room. She will continue her work by investigating barriers to student interest in Ob/Gyn; evaluating issues in Ob/Gyn clerkship learning environments; and determining Operating Room teams’ expectations of medical students.

LAURI BUDNICK, MD, who established an interest in web-based education modules in previous years, will focus her educational research on the assessment on an instructional video used to describe perineal anatomy and obstetric lacerations to medical students and residents. She will similarly evaluate the benefit of an electrosurgical principles module used to teach residents.

Student Spotlight

Elizabeth Young, BS, Research Fellow

This year the Division of Research welcomed its first medical research fellow, Elizabeth Young, BS, Medical Student, Year 4. Ms. Young participated in and provided critical support to several projects during her tenure, including, “Social Identities in Pregnancy: Effects on Maternal Health and Birth Outcomes” with Marci Lobel, PhD (Department of Psychology) and Dr. Christina Kocis, CNM, DNP; “Placental Fibrosis” with Drs. Demishev and Acosta-Martinez; “Prevalence of Leiomysarcoma Following Hysterectomy or Myectomy” with Drs. Griffin and Blaber; and Dr. Joseph Chappelle’s pilot study: “Non-Invasive Monitoring of Hemodynamic Status via a Pulse Oximetry Machine in Women Undergoing Cesarean Delivery.” Throughout these projects, Ms. Young coordinated and supervised students, recruited and consented patients, and led IRB approval processes. Ms. Young also worked closely with Dr. Lisa Pastore to prepare the manuscript: “Diagnosis and REI treatment choices made by women with DOR.” She was prolific during her fellowship, producing two case reports, a published paper, three draft manuscripts, and two poster abstracts. The Division feels privileged to have worked with Ms. Young and looks forward to hearing about her future successes.

Masra Shameem, MPH

Attending high school in Karachi, Pakistan, Masra Shameem witnessed the disparity in healthcare access for women in developing nations and the United States. This global health issue remained in Ms. Shameem’s mind throughout her education and, most recently, as an MPH student at Stony Brook University. While earning her degree, she sought opportunities to improve women’s healthcare across cultural and economic barriers, joining Dr. Joyce Varughese in the Department of Obstetrics, Gynecology, and Reproductive Medicine to study cervical cancer screening. After beating out thousands of applicants, Ms. Shameem will apply her expertise to analyze cervical cancer screening in Mumbai starting this August with a prestigious Fulbright Scholarship. Under the guidance of Dr. Dhananjaya Saranath, Executive Director at Cancer Patient Aid Association (CPAA), Ms. Shameem will use her award to analyze the cultural and economic factors affecting Mumbai women and their decisions to undergo cervical cancer screening. Ms. Shameem hopes her study will enable future physicians and public health administrators to better understand and manage the complicated cultural factors affecting South Asian women and HPV screening.
**Collaborations: Midwifery**

Midwives are expert, highly-skilled professionals who work independent of, as well as collaboratively with, physicians. Midwives care for patients, educate other healthcare professionals and work together with physicians as valued members of the healthcare team. The philosophy of midwifery is based on the belief that there are natural rhythms within a woman’s life, which include sexuality, pregnancy, childbirth and menopause. Midwives spend time with women, listening and learning from them in the process of educating and providing care for their health needs and choices.

The Midwives take their commitment to education and communication seriously. This is evidenced not only in their daily practice, but in activities such as their recurrent “Meet the Midwives” sessions on the first Thursday of each month and their Breast Feeding Support Group, open to all mothers delivered at Stony Brook. They are active participants in a quality improvement program at The Women and Infants Center at Stony Brook called “Best Fed Beginnings”. The goal of this program is to achieve baby-friendly designation for Stony Brook University Hospital through improvement of maternal-infant healthcare. The Division’s goals of communication and education are further reflected in their own specialized webpage (http://medicine.stonybrookmedicine.edu/midwives) and Facebook page. The Midwifery Division’s expertise in communication and education makes them well-suited as the critical link between patients and our research efforts.

Their unique provider-patient relationship makes the midwives champions at recruiting patients for research; this connection is responsible for the wide range of collaborations in which the Division participates. During the past year the Division of Midwifery has actively supported multiple projects including: “Social Identities in Pregnancy: Effects on Maternal Health and Birth Outcomes” with Marci Lobel, PhD (Department of Psychology); “Biomarkers in Vulvodynia Patients” with Dr. David Baker; “Adapting a Comprehensive Mind-Body Group Intervention for Pregnant Women” with Brittain Mahaffey, PhD (Department of Psychiatry); “EEG correlates of reward in pregnancy” with Dr. Greg Hajcak, PhD (Department of Psychology); “Pregnancy and Cadmium Study” with Jack Kovach, MD, (Department of Preventive Medicine); and most recently, “The Effect of Peripartum Antibiotics on Vertical Transmission of the Maternal Microbiome” with Gretchen Mockler, MD (Department of Family Medicine). On these and other projects, the midwives participate in the full range of research activities: design, subject identification, patient recruitment, survey execution, biosample and data collection, analysis and presentation. Their unparalleled track record in subject recruitment has more than once salvaged foundering studies by convincing many of their patients to participate.

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**Research Highlights**
A common theme running through Dr. Joseph Chappelle's activities is mentoring. All of his research endeavors involve residents, as he frequently engages in and leads studies for Resident Research Day (RRD) projects. During the past year, Dr. Chappelle actively worked with seven residents on retrospective projects that ranged from the early stages of study design, through data collection to presentation and publication. These studies encompassed topics such as blood pressure patterns in postpartum women, intrapartum risk factors associated with neonatal sepsis, and the utility of clinical findings to predict laboratory values in hypertensive disorders of pregnancy (the latter was developed into a paper that is currently in press). In addition, he was a co-investigator on Dr. Blaber’s surgical prospective studies and has launched his own prospective clinical study, “Cesarean Delivery Blood Loss Estimated by Non-Invasive Hemoglobin Monitor.”

Associate Residency Program Director Dr. Elizabeth Garduno commits a significant amount of time to engaging residents in research and education (please see “Commitment to Education” for more information on Dr. Garduno’s research, p. 9). Included in this is her study, “Sign on the X in Between Contractions: Teaching Residents the Informed Consent Process,” which is a program to teach residents (the primary cohort of physicians present for patient conversations about consent) how to accurately explain and perform informed consent. In a related study, Dr. Garduno is mentoring resident Jenny Zhang, MD, for her project: “Patient Understanding and Satisfaction in Informed Consent for Labor and Delivery” investigating the process of medical informed consent prior to admission for labor and delivery from the point of view of the patient. Dr. Garduno has an additional interest in evaluating the use of FOV (point of view) cameras in training residents and physicians, and as a tool for evaluation of individual practitioners’ surgical skills.

Despite the demands on his time as Chair of the Department of Obstetrics, Gynecology and Reproductive Medicine, Dr. Todd Griffin is an active participant in multiple research projects, including: “The Prevalence of Leiomyosarcoma Following Hysterectomy or Myomectomy;” “The Effect of Preincisional Local Analgesia on Postoperative Pain Sites;” and “The Usefulness of Post-operative Incisional Bupivacaine in Gynecologic Laparoscopy,” all in collaboration with Dr. Blaber. In addition, Dr. Griffin is involved in studies related to pregnancy and cadmium with John Kovach, MD (Department of Preventive Medicine), and Dr. James Bernasko; mentored Dr. Emily Blanton’s RRD project entitled “Myomectomy Approach Comparison: Robotic versus Laparoscopic versus Open” and was co-author of her AAGL presentation. Dr. Griffin is involved in the clinical launch of the New York State Opt-to-Quit smoking cessation program in our outpatient practices. Once the clinical program starts, he will initiate research on the impact on babies’ fathers in collaboration with Dr. Rachel Boykin (Department of Pediatrics) and possibly the Department of Preventive Medicine.
Research conducted by Juliana Opatich, MD, reaches a global audience including a community of Ngabe villages in Bocas del Toro, Panama (please see “Commitment to Global Health” for more information on Dr. Opatich’s research, p. 7). Both her current and developing research projects investigate the novel use of contraceptives with one studying the effect of LARC (Long-Acting Reversible Contraception) therapy on socioeconomic factors in remote Panamanian villages and a second examining the use of hormonal IUDs (intrauterine device) in postmenopausal morbidly obese women and their possible role in the prevention of endometrial hyperplasia and carcinoma. The latter is a study developed from the collaborative work Dr. Opatich is presently undertaking with Dr. Joyce Varughese and Dr. Odette Taha, a resident at Stony Brook University School of Medicine.

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CHRISTINA PARDO MAXIS, MD, MPH

Dr. Christina Pardo Maxis is integral to the global health and global health education research undertaken by the Division of Research. Teamwork with Stony Brook resident, Dr. Xun Lian, Dr. Nancy Tang, a minimally invasive surgery fellow at Maimonides Medical Center (Brooklyn), and Dr. Christophe Millen from the University Hospital at Mirebalais (Haiti), Dr. Pardo Maxis has become a leading educator in minimally invasive gynecologic surgery in Haiti (please see “Commitment to Global Health” for more information on Dr. Pardo Maxis’ research, p. 7). In addition to her work as a mentor and teacher, she collects data gauging the usefulness of the didactic materials she and her collaborators create, adding to existing knowledge of medical education. Dr. Pardo Maxis intends to widen her research by forming a cervical cancer prevention and research program at the Albert Schweitzer Hospital in Haiti and assessing Ob/Gyn resident interest in global health for a prospective teen pregnancy study.

MELISSA STRAFFORD, MD

Melissa Strafford, MD, was responsible for bringing the Ryan Residency Program to our Department this year. The Kenneth J. Ryan Residency Program Fellowship, first established in 1999, was designed to enhance formal family planning education and training for residents in the United States and Canada. Dr. Strafford’s Directorship of this program at Stony Brook is a natural outgrowth of her driving interest in contraception and family planning as an integral part of women’s healthcare. Previously, Dr. Strafford mentored resident Deepti Nahar, MD, in her RRD study; “The Effects of Standardized Contraceptive on the Utilization of Contraception in the Immediate Postpartum Period.” A manuscript describing their findings—namely that patients who viewed a standardized educational video were less likely to be undecided on contraception utilization—is in preparation.

EVA SWOBODA, MD

Eva Swoboda, MD, was the Division’s most prolific presenter of 2014, sharing four collaborative research projects on the topic of medical student and resident education at the annual APGO/CREST meeting, followed by another at the organization’s 2015 conference. In addition to her analysis of student perceptions and learning satisfaction in gynecologic operating rooms (please see “Commitment to Education” for more information on Dr. Swoboda’s research, p. 9), Dr. Swoboda is investigating topics including informed consent and quality assurance in patient safety.

MATERNAL FETAL MEDICINE

Three of Dr. Cecilia Avila’s projects reflect her continuing interest in Chorioamnionitis (Chorio). The first, “Optical Coherence Tomography of Fetal Membranes,” with Drs. Annie Laurie Shroyer (Department of Surgery), Cynthia Kaplan (Department of Pathology), and Nancy Tesser (Weatherhead School of Management, Case Western University) has already generated one publication with part two currently being written. This study will continue with analysis of histology and Optical Coherence Tomography (OCT) images, followed by correlation of the results with maternal and perinatal outcomes. Dr. Avila’s second study, “Microbiomics in Chorioamnionitis” is underway with Joseph Petrosino, PhD (Department of Molecular Virology and Microbiology, Baylor College), and Dr. Shroyer (Department of Surgery). Patient enrollment, sample collection, and analysis of samples are ongoing for this project in an effort to establish a picture of the bacterial diversity in women with and without chorioamnionitis. For her third Chorio project Dr. Avila, in collaboration with William Dan Roberts, PhD (Interim Associate Chief Quality Officer, Stony Brook Medicine), and Dr. Shroyer, (Department of Surgery), is mentoring MPH candidate Asma Bhindarwala (Colombia University) in a retrospective analysis to identify best practice and care management of admitted pregnant women with chorioamnionitis. Dr. Avila’s additional mentoring activities focus on an RRD project looking at peripartum hysterectomy incidence, indications, risk factors, and complications before and after the implementation of a standardized multidisciplinary protocol with Dr. Ruth Wei, as well as a Scholar-in-Medicine project with Jacob Mathai (medical student, year 1), on the topic of nephrolithiasis in pregnant women.
Research by Clinical Division

DAVID BAKER, MD

Dr. David Baker focuses on two general areas of research: women’s use of herbal supplements and the use of biomarkers in screening, diagnosis, and treatment. His first area of interest has been productive, with data collection via surveys in collaboration with the Stony Brook Survey Center. As a result, “Use of Herbal Supplements in Menopause” was completed with a presentation of the results by Natalie Cmosija, MPH (see “Abstracts,” p. 24), and a manuscript in preparation. In addition, data collection for “Supplement Use in Pregnancy” was completed and is currently being analyzed. Dr. Baker’s biomarker studies, “The Microbiome and Host Inflammatory Response in Pre-term Labor” and “Biomarkers in Vulvodynia,” are collaborations with Stephen Walker, PhD (Department of Oral Biology and Pathology), and Jackie Collier, PhD (School of Marine and Atmospheric Sciences). The former has generated multiple grant applications. The latter, “Biomarkers in Vulvodynia,” will continue this year with the Division of Midwifery providing invaluable support in patient recruitment and sampling.

JAMES BERNASKO, MB, CHB, CDE

In addition to being the Director of the Division of Maternal Fetal Medicine, Dr. James Bernasko is a collaborator on three research efforts begun this year, including “Pregnancy and Cadmium Study (PACS)” with Drs. John Kovach, MD and Lynette Dias, PhD (both Department of Preventive Medicine); “Adapting a Comprehensive Mind-Body Group Intervention for Pregnant Women” with Brittain Mahaffey, PhD (Department of Psychiatry), and “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). In each study, Dr. Bernasko contributes the critical clinical insights of a specialist in high risk pregnancy.

MICHAEL DEMISHEV, MD

Dr. Michael Demishev had a busy and challenging year working on “Placental Fibrosis,” collaborating first with Glenda Trujillo, PhD (Department of Pathology), and later, Maricedes Acosta-Martinez, PhD (Department of Physiology and Biophysics). This project was designed to make a preliminary evaluation of the presence or absence of known markers of Epithelial Mesenchymal Transition (EMT) in normal and preeclamptic human placentas. Unfortunately, it was determined that the method used would not be effective. The study continued to evolve under the guidance of Dr. Acosta-Martinez, who will investigate exosomes in pregnancy with Dr. James Bernasko as a collaborator. Dr. Demishev is mentoring the Maternal Fetal Medicine Fellows, particularly Dr. Nadia Kunzer, through their project “The Use of Cervical Sonography to determine True versus False Labor at Term,” which looks to determine if cervical length can differentiate true and false labor in term patients. Dr. Demishev additionally served as PI on a project with resident Julie Lian, MD: “Rate of Adhesions at Time of Cesarean Section.”

J. GERALD QUIRK, MD

Dr. J. Gerald Quirk’s long-time collaboration with Dr. Petar M. Djurić (Department of Electrical and Computer Engineering) on “Machine Learning with Generative Mixture Models for Fetal Monitoring” bore fruit this year with multiple presentations, publications, and, most significantly, an NIH R21 grant. This two-year award for exploratory work will help support the project as Drs. Quirk and Djurić and their Electrical Engineering graduate students continue to explore ways to standardize the interpretation of fetal heart rate data. The field of signal processing and monitoring in labor is rapidly advancing; Dr. Quirk and his team are helping to break new ground in this area. Dr. Quirk mentored resident Kir-Wei Chen, MD, in developing his upcoming RRD project, “Neonatal Outcomes of Pregnancies with Absent/Reversed End Diastolic Flow of the Umbilical Artery.” In addition, Dr. Quirk is Director of the joint Stony Brook/Winthrop University Hospital Maternal Fetal Medicine Fellows program.

MICHAEL PEARL, MD

Dr. Michael Pearl’s responsibilities as the Vice-Chair for Research and Faculty Development are wide and varied. In spite of these and other demands on his time, he is the PI for the gynecological oncology portion of the NRG Oncology Cooperative Group activities at Stony Brook that involves numerous clinical trials. In addition to these efforts, Dr. Pearl pursues his own personal research efforts, including his collaboration with Dr. Wen-Tien Chen (described below). His project: “Development of a Genomic Test for Early Detection of High-grade Serous Ovarian Cancer” in collaboration with Dr. Scott Powers, PhD (Department of Pathology) was recently funded by the Babylon Breast Cancer Coalition. Dr. Pearl has been mentoring Alexandra Filippi (medical student, year 4) in execution of “A Prospective Cohort Study of Post-Operative Recovery for Patients Undergoing Gynecologic Oncology Surgery” a survey of patients about their perception of their post-operative recovery.

MELISSA HENRETTA, MD, MPH

Apart from the general resident education program, Dr. Melissa Henretta mentors individual residents as they prepare for the department’s annual RRD. Ongoing projects for which she is serving as the guiding investigator include: resident Dr. Jessica Parker’s study reviewing readmissions of ovarian cancer patients using the SPARCS database; Dr. Andre Plair’s research looking at readmission rates of hysterectomy patients based on mode of surgery; and a quality assurance project with Anna (“Anya”) Kutsenok, MD.

GYNECOLOGIC ONCOLOGY

MICHAEL PEARL, MD

Dr. Michael Pearl’s responsibilities as the Vice-Chair for Research and Faculty Development are wide and varied. In spite of these and other demands on his time, he is the PI for the gynecological oncology portion of the NRG Oncology Cooperative Group activities at Stony Brook that involves numerous clinical trials. In addition to these efforts, Dr. Pearl pursues his own personal research efforts, including his collaboration with Dr. Wen-Tien Chen (described below). His project: “Development of a Genomic Test for Early Detection of High-grade Serous Ovarian Cancer” in collaboration with Dr. Scott Powers, PhD (Department of Pathology) was recently funded by the Babylon Breast Cancer Coalition. Dr. Pearl has been mentoring Alexandra Filippi (medical student, year 4) in execution of “A Prospective Cohort Study of Post-Operative Recovery for Patients Undergoing Gynecologic Oncology Surgery” a survey of patients about their perception of their post-operative recovery.
JOYCE VARUGHES, MD

Dr. Joyce Varughese’s strong interest in global health is reflected in several of her ongoing and planned projects (please see “Commitment to Global Health” for more information on Dr. Varughese’s research, p. 7), including two projects she recently initiated: “BRCA Prevalence among South Asians” (with Regional Cancer Centre, Trivandrum) and “Comparison of Effectiveness of Allopathic versus Ayurvedic Treatments for Cervical Dysplasia” (with Amrita Ayurvedic Medical College and Hospital, Kerala). In addition, she is working with resident Odette Taha, MD, on her project “Cost-Effective Analysis of Overtreatment of Low-risk Endometrial Cancer in the United States” and also “Prophylactic Levonorgestrel IUD use in Obese Postmenopausal Women” with both Odette and Juliana Opatich, MD. Finally, Dr. Varughese is collaborating with Mark Sedler, MD (Department of Psychiatry and Behavioral Science), and Srinivas Pentyala, PhD (Department of Anesthesiology), to apply for an Obama-Singh grant for an international collaboration with Amrita Institute for Medical Sciences for a study on women's cancer screening or postpartum depression.

COLLABORATOR: WEN-TIEN CHEN

Wen-Tien Chen, PhD, is the founder and president of Vitatex, a company focused on advancing personalized medicine with tests of invasive circulating tumor cells (iCTCs) to provide better information about the metastatic potential of a patient’s cancer to improve treatment and reduce healthcare costs. His collaboration with Dr. Pearl has resulted in an ongoing research contract between Ob/Gyn and Vitatex to fund “Biotech: Blood Assays to Analyze Tumor Heterogeneity and Drug Resistance.” Recent studies suggest that circulating tumor cells (CTCs) could represent cancer stem or progenitor cells emigrated in blood and might be a potential alternative to biopsies as a source of tumor tissue for the detection, molecular characterization, and monitoring of non-hematologic cancers. This work led to two publications in 2014–15 (see pages 22-23). Vitatex is currently negotiating with the National Cancer Institute for funding to transition the technology to commercialization. The successful completion of these discussions may lead to the development of non-invasive blood tests for characterization of different types of epithelial cancers, as well as to build a foundation for FDA filing to market these products.

REPRODUCTIVE ENDOCRINOLOGY

RICHARD BRONSON, MD

Dr. Richard Bronson oversees our Resident Research program, which includes the Department’s annual Resident Research Day, where residents present a formal research project the day of their graduation. Dr. Bronson’s personal research interest is male infertility. The preliminary data from “Detection of Candidate Gene Mutations in Infertile Men with Severe Teratospermia” is in manuscript preparation with co-authors from the Core Genomics Lab. Further work studying sperm mRNA is underway. Dr. Bronson has also studied the effects of smoking, its cessation, and the use of antioxidant vitamins on sperm DNA damage (assessed using a flow cytometric TUNEL assay) in collaboration with Marc Golightly, PhD (Department of Pathology). As an outgrowth of this work, they have obtained approval from New York State to run the assay clinically, which will allow them to determine the proportion of men with evidence of increased DNA damage in infertile populations.

JAMES STELLING, MD

Dr. Stelling, a practitioner with and the Research Director for Reproductive Medical Specialists of NY, is a close collaborator with Dr. Lisa Pastore. 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 role of cadmium and other environmental exposures in reproductive endocrinology outcomes. Dr. Stelling’s personal research interest is reflected in his ongoing project, “Amniopap: A Non-invasive Alternative to Amniocentesis,” which continues to involve multiple residents. In addition, Dr. Stelling has actively mentored two residents for RRD: Malini Persad, MD, for: “A Comparison of Implantation Rates of 5 In Vitro Fertilization Ovarian Stimulation Protocols: A Retrospective Study” and Fabiola Balmir, MD, for: “Comparison of Aneuploidy Frequency Between Day 5 and Day 6 Human Blastocysts.”

Critical to our success are the pillars of academic medicine: clinical care, education, and research.


HENRETTA MS, Copeland AR, Kelley SL, Hallowell PT, Modesit SC. Perceptions of obesity and cancer risk in female bariatric surgery candidates: highlighting the need for physician action for unsuspectingly obese and high risk patients. Gynecol Oncol. 2014 Apr;133(1):73-7

Bierer BE, Barnes M, IRB/RIO/IO WORKING GROUP. Research misconduct involving noncompliance in human subjects research supported by the Public Health Service: Reconciling separate regulatory systems. Hastings Center Report. July–August 2014;S2-S27.


IN PRESS


IN REVIEW


MANUSCRIPTS IN PREPARATION


BRONSON R, Hatchwell E., Grateko D. Detection of Candidate Gene Mutations in Infertile Men with Severe Teratospermia.

CRONOSIA N, ROEMER E, BAKER D. Associations between supplement information sources and menopausal women’s consumption of herbal supplements.

Walker E, Clark ML, Shieltto T, Young SL, Baker VL, Timko MR. PASTORE LM. The impact of genetic carrier testing in reproductive decision making: FMR1 testing in women with diminished ovarian reserve.
MANUSCRIPTS IN PREPARATION, continued

Nicoloro J, Lobel M, Pastore LM. Diminished Ovarian Reserve (DOR), Title TBD.

Young E, Freling J, Stelling J, Pastore L. Diagnosis and REI treatment choices made by women diagnosed with diminished ovarian reserve

Nahar D, Strafford M, Young E, Crnosija N, Chapelle J. The Effects of Standardized Counseling Materials on the Knowledge and Planned Utilization of Contraception in the Postpartum Period

Young E, CrnosiJA N, Baker D. Predictors of Consumption of Dietary Supplements

BOOKS AND CHAPTERS


ABSTRACTS


Budnick L, Swoboda E, Hutchinson-Colas J. If you see something, say something: empowering learners to speak up for patient safety. Breakout Session. Annual Meeting CREOG and APGO; 2015 March; San Antonio, Texas.


Chapelle J. Utility of laboratory tests in the evaluation of hypertensive disorders of pregnancy. ACOG Annual Clinical Meeting; April 2014; Chicago.


Harmon B, PEARL ML, HENRETTA M, and Tomos C. The increasing frequency of bilateral salpingectomy in patients with benign GYN conditions. College of American Pathology Annual Meeting; 2014 September; Chicago.


Regenbogen E, Oleszak SP, Corrado T, Shroyer ALW, Vanner E, Goldstein J, PEARL ML. Monitoring hypopharyngeal pH in patients undergoing general endotracheal tube anesthesia; a pilot study. 95th Annual Meeting of the American Broncho-Esophageal Association; 2015 April; Boston.

SWOBODA E, Stevens E, GARDUNO E. OR Etiquette: How to reduce events of learner mistreatment and increase learner satisfaction. Workshop. APGO Martin L. Stone, MD Faculty Development Seminar; 2014 January; Palm Beach, Florida.

SWOBODA E. Medical student experience and learning environment in the Ob/Gyn operating room. Poster presentation. APGO Scholars Graduation Project, Annual Meeting CREOG and APGO; 2014 February; Atlanta.

SWOBODA E, GARDUNO E, BUDNICK L. Creating a learner development program to foster professional identity and career planning. Breakout Session. Annual Meeting CREOG and APGO; 2014 March; Atlanta.

SWOBODA E. Orienting your learner to a new culture: the operating room. Round Table. APGO Martin L. Stone, MD Faculty Development Seminar; 2015 January; Palm Spring, California.