

Program Mentors

Cindy Amundsen, MD, Roy T. Parker MD Professor of Obstetrics and Gynecology. Expert in design and conduct of prospective observational and clinical trials of interventions for treatment of pelvic floor disorders; Program Director for Duke/NCCU BIRCWH Program, and PI of the Duke KURe Program; highly experienced in mentoring junior faculty researchers. Dr. Amundsen has ongoing collaborations with Drs. Wienfurt, Gall and Grill.

James Bain, PhD, Associate Professor of Medicine. Leads Duke's DMPI Metabolomics Laboratory, collaborating with other investigators on a variety of metabolic diseases; leads the Duke consortium on metabolomics for the international Hyperglycemia and Adverse Pregnancy Outcome (HAPO) and HAPO Follow-Up Studies; has developed a recent collaboration with Duke's Division of Maternal-Fetal Medicine to study urinary metabolomics in women with and without intrauterine growth restriction.

Donna Baird, PhD, MPH, National Institute of Environmental Health Sciences. An intramural scientist at NIEHS with extensive experience in studies of reproductive hormones, fertility and early pregnancy, and the natural history of uterine fibroids; methodological expert in longitudinal data analysis, analysis of bias in reproductive outcomes, and research design in reproductive epidemiology.

Matthew D. Barber, MD, MHS, E.C. Hamblen Professor and Chair of Obstetrics and Gynecology. PI of this WRHR; expert in design and conduct of clinical outcomes studies in treatment of pelvic floor disorders, including development and validation of specific outcome measures, multicenter clinical trials, device registries and the unique challenges of evaluating surgical interventions.

Andrew Berchuck, MD, Professor of Obstetrics and Gynecology. Translational researcher with a focus on the molecular origins of ovarian cancer, both in the laboratory and through collaborative epidemiologic studies such as the North Carolina Ovarian Cancer Study and the Ovarian Cancer Association Consortium.

Blanche Capel, PhD, Professor of Cell Biology. Research focus on cell fate and patterning decisions that underlie development of the bipotential gonad into either testis or ovary using a variety of molecular and biochemical techniques; established the basic paradigm governing sex determination in vertebrates; has focused on the primary cell fate decision in somatic cells during sex determination, as well as the organogenesis process that encloses germ cells in a sex-specific environment and regulates their cell cycle and differentiation in the testis; recent work on the effect of chemotherapy agents on ovarian function has the potential to guide development of fertility-sparing treatments for women with cancer.

Michael Cohen-Wolkowicz, MD, PhD, Professor of Pediatrics. Expert in pediatric and perinatal clinical pharmacology with support from a number of federally funded grants and contracts; specializes in design and execution of early phase studies supporting labeling for drugs used in children and pregnant women.

Amy Corneli, PhD, Associate Professor of Population Health Sciences. Research interest in the use of qualitative and mixed-method studies with an emphasis on engaging patients/participants and other key stakeholders in qualitative research to inform clinical research, socio-behavioral interventions, and material and scale/questionnaire development; has developed a grant-funded research portfolio focused on prevention of HIV; brings unique experience as a women's health researcher in a non-university setting, having come to Duke from a non-profit clinical research organization (FHI 360).

Michael Cotten, MD, MHS, Professor of Pediatrics. Research focus in four major areas: neuroprotection, development and application of novel technologies in neonatology, establishing a repository of samples linked with clinical data to study associations between genetic variants and morbidities of extreme prematurity, and practice variations in the intensive care nursery; much of this work was conducted as part of the NICHD Neonatal Research Network.

Holly Dressman, PhD, Research Professor of Molecular Genetics and Microbiology. Research interest is intertwined with providing shared resources to investigators utilizing genomic and transcriptomic profiling as well as being engaged as an investigator on a number of basic and translational studies; involved in the development of shared resources that enables the development of major projects that utilize various genomic and transcriptomic technologies coupled with identifying clinically relevant studies for investigators who want to define mechanisms underlying microbial regulation of host metabolism and targeted therapeutics.

Ken Gall, PhD, Professor and Chair of Mechanical Engineering and Materials Science. Research interest in the mechanical properties of materials, covering a broad

range of technologies and length scales and working across a range of clinical areas; expertise is particularly timely for WRHR Scholars interested in translational research into surgical approaches for the treatment of these conditions due to the recent controversies about the impact of current policies for evaluating and introducing foreign materials into treatment of pelvic floor disorders. Dr. Gall has an on-going collaboration with the Division of Urogynecology including Drs. Amundsen and Visco.

Warren Grill, PhD, Professor of Biomedical Engineering. Translational researcher with foci on neurourology, neural stimulation, computational neuroscience, and neural prostheses, all of which have potential applications to development of innovative treatments for pelvic floor disorders; multi-disciplinary projects frequently integrate computational modeling, preclinical experiments in animal models, and translational experiments in human subjects. Dr. Grill has an ongoing collaboration with Dr. Amundsen.

Megan Huchko, MD, MPH, Associate Professor of Obstetrics, Gynecology and Global Health, and Director of the Center for Global Reproductive Health. Research focuses on approaches to optimize cervical cancer screening and treatment for women in low-resource settings and with co-existing morbidities; expert in implementation science, cluster randomized trials and cohort design and analysis, with a special emphasis on vulnerable populations in both the United States and globally. Dr. Huchko is a current collaborator with Dr. Nimmi Ramanujam.

Brenna Hughes, MD, MSc, Associate Professor of Obstetrics and Gynecology and Chief of the Division of Maternal-Fetal Medicine. Training includes dual fellowships in Maternal-Fetal Medicine and Reproductive Infectious Diseases and Immunology; research interest focuses on translational and clinical studies of infectious complications in pregnancy; experience in leading and participating in multicenter clinical trials in pregnancy; former WRHR Scholar at Brown will provide important insight for the Program through her service on the Advisory Committee. Drs. Hughes and Steiner are Co-PIs for the SWAN study.

Eric Jelovsek, MD, MMed, MSDS, Associate Professor of Obstetrics and Gynecology and Director of Data Science. Research interests focus on the development and evaluation of clinical prediction models using traditional biostatistics and machine learning approaches broadly in obstetrics and gynecology; in the context of pelvic floor disorders, these models have been applied to prevention of pelvic floor disorders after childbirth and pelvic organ prolapse surgery and reducing transfusion risk during gynecologic surgery; experience in the design and conduct of clinical trials in pelvic floor disorders.

Scott Kollins, PhD, Professor of Psychiatry. Research interests include understanding the effects of pre- and peri-natal exposures on child neurodevelopment, including attention disorder/hyperactivity disorder (ADHD), eating behaviors, and autism; recent work has emphasized the use of novel methods including mobile technologies to measure aspects of health. Dr. Kollins has a long-standing collaboration with Dr. Murphy for NIEHS/EPA-funded research.

Joanne Kurtzberg, MD, Professor of Pediatrics and Pathology. Expert in development of novel therapies for medically complex diseases failing conventional therapies; pioneer in use of autologous and allogeneic cord blood and cord tissue cells to treat inherited metabolic disease, with recent work studying the potential for cord blood and tissue cells to treat acquired brain injuries.

Donald McDonnell, PhD, Professor and Chair of Pharmacology and Cancer Biology. Multi-disciplinary researcher utilizing biochemical, genetic, and chemical biological approaches to define targetable regulatory steps in estrogen, androgen, progesterone, and estrogen-related receptor signaling pathways in reproductive cancers, breast cancer and diseases associated with dysregulated hormone signaling; developed mechanism-based screens that have resulted in the discovery of several drug/drug combinations that are currently being evaluated in the clinic (or approved for clinical use).

Susan K. Murphy, PhD, Associate Professor of Obstetrics and Gynecology, Chief of the Ob/Gyn Division of Reproductive Sciences. Studies the role of epigenetics in genomic imprinting, gynecologic malignancies, neurodevelopmental disorders and in the developmental origins of disease, both from the *in utero* perspective and from the environment encountered during preconception; preconception environmental exposure research includes study of the role of the paternal environment on epigenetic reprogramming in sperm, including use of nicotine and cannabis, exposure to flame retardant chemicals, and in the context of obesity; co-founded the Newborn Epigenetics Study, a mother-infant dyad study with over 2,300 mother-infant pairs that has served as a rich resource for exploration of numerous hypotheses regarding impact of gestational environment on the epigenome and health outcomes. *Dr. Murphy* has a long-standing collaboration with *Dr. Kollins* – see above.

Evan Myers, MD, MPH, Walter L. Thomas Professor of Obstetrics and Gynecology. Experienced in systematic review/meta-analysis, use of mathematical modeling and decision analysis, and conduct of multi-center observational and randomized studies.

Truls Ostbye, MD, MPH, MBA, PhD, Professor of Family Medicine and Community Health. Health services researcher and chronic disease epidemiologist who has worked on a large number of longitudinal observational and intervention studies; has collaborations with a number of members of the Ob-Gyn Department on studies of

smoking cessation in pregnancy, obesity during and after pregnancy, and prevention of recurrent preterm birth in non-Hispanic Black women.

Nimmi Ramanujam, PhD, Professor of Biomedical Engineering, Global Health, and Pharmacology and Cancer Biology. Expert on the development of optically based tools for cervical and breast cancer screening, diagnosis, and management, with a special emphasis on the development of scalable and inexpensive tools to help reduce health disparities. Dr. Ramanujam currently collaborates with Dr. Huchko on implementation of novel cervical cancer screen technology in Kenya.

Angeles Alvarez Secord, MD, MHSc, Professor of Obstetrics and Gynecology, Director, Gynecologic Oncology Clinical Trials. Basic and translational scientist focused on understanding the tumor microenvironment in ovarian and endometrial cancers, the role of obesity in both the etiology and optimal management of gynecologic cancers, and innovative methods for the design and conduct of clinical trials in gynecologic cancer.

Geeta Swamy, MD, Haywood Brown, MD, Professor of Women's Health (effective July 1, 2022), Vice-Chair of Research of Obstetrics and Gynecology, Vice Dean for Scientific Integrity, Duke SoM, and Associate Vice President of Research, Duke University. Experienced in clinical studies of perinatal infectious disease, especially vaccine-preventable diseases; PI for the Duke site of the NICHD Maternal-Fetal Medicine Unites Network; previous BIRCWH Scholar; her leadership roles in research administration at Duke are invaluable resources for individual Scholars and the Program as a whole. Dr. Swamy has a long-standing collaboration with Dr. Walter.

Anthony Visco, MD, Professor of Obstetrics and Gynecology. PI of the Duke NICHD Pelvic Floor Disorders Network site; extensive experience in the design and conduct of multi-center clinical trials for the evaluation of medical and surgical management of pelvic floor disorders.

Emmanuel Walter, MD, MPH, Professor of Pediatrics. Pediatric infectious disease specialist with a primary research interest in disease prevention through vaccination; extensive experience in conducting pre- and post-approval trials of vaccines; has a long-standing collaboration with Dr. Swamy in leading several NIAID and CDC-funded vaccination studies.

Kevin Weinfurt, PhD, Professor and Vice Chair for Research, Population Health Sciences. Expert in design and analysis of self-reported measures of health, using both qualitative and quantitative methods to develop instruments for patient-reported outcomes (PROs); led development of measures for male and female sexual function and satisfaction and lower urinary tract dysfunction. Has long-standing collaborations with Dr. Amundsen.