Cleveland Clinic

Obstetrics & Gynecology Institute

10TH ANNUAL

Research Day

May 14, 2025

Bunts Auditorium
or via Webex

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Obstetrics & Gynecology Institute

RESEARCH DAY

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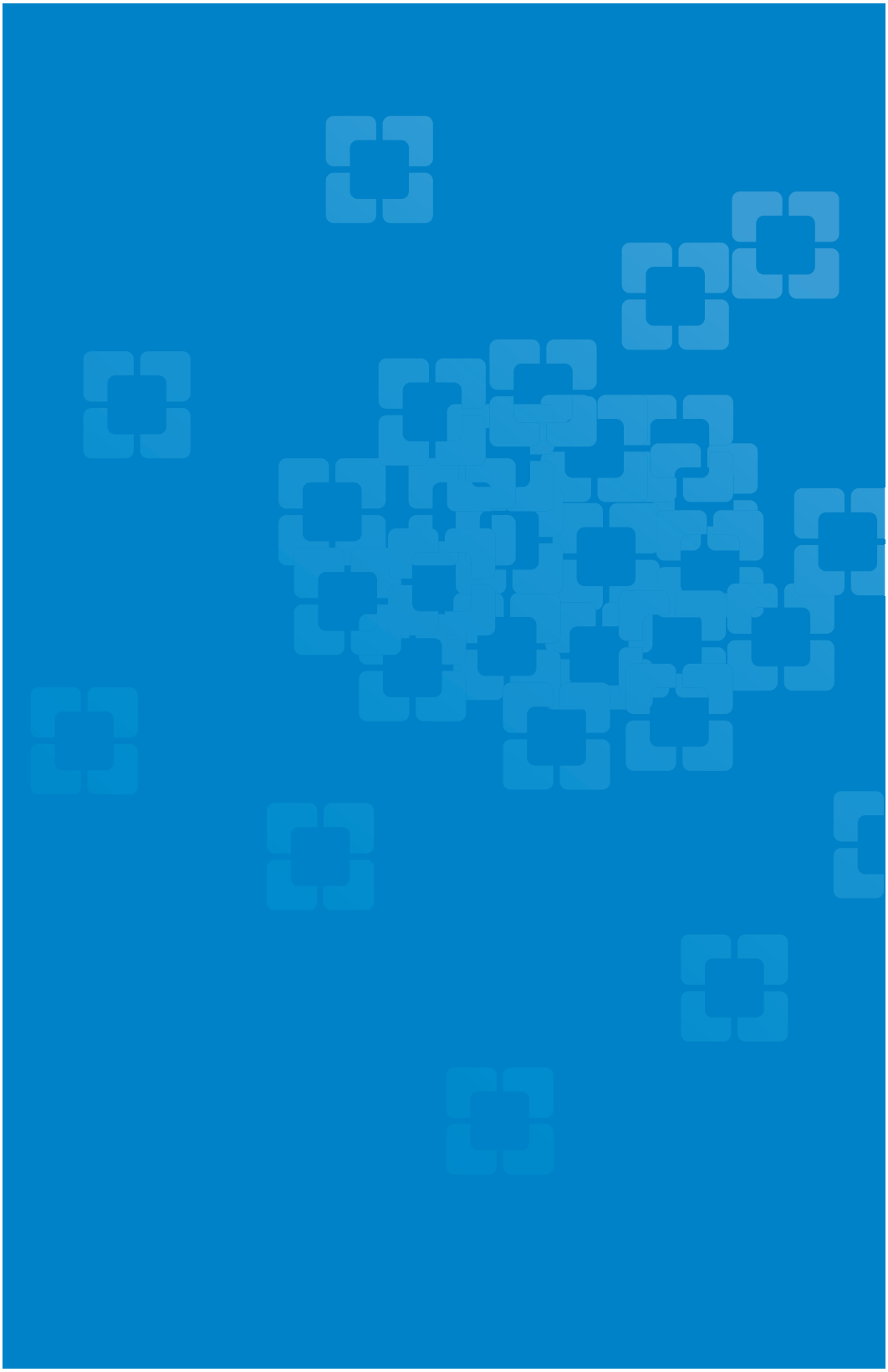
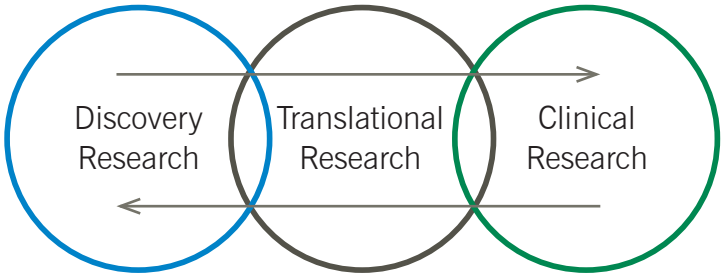
Cleveland Clinic





Key Note Address & Lecture

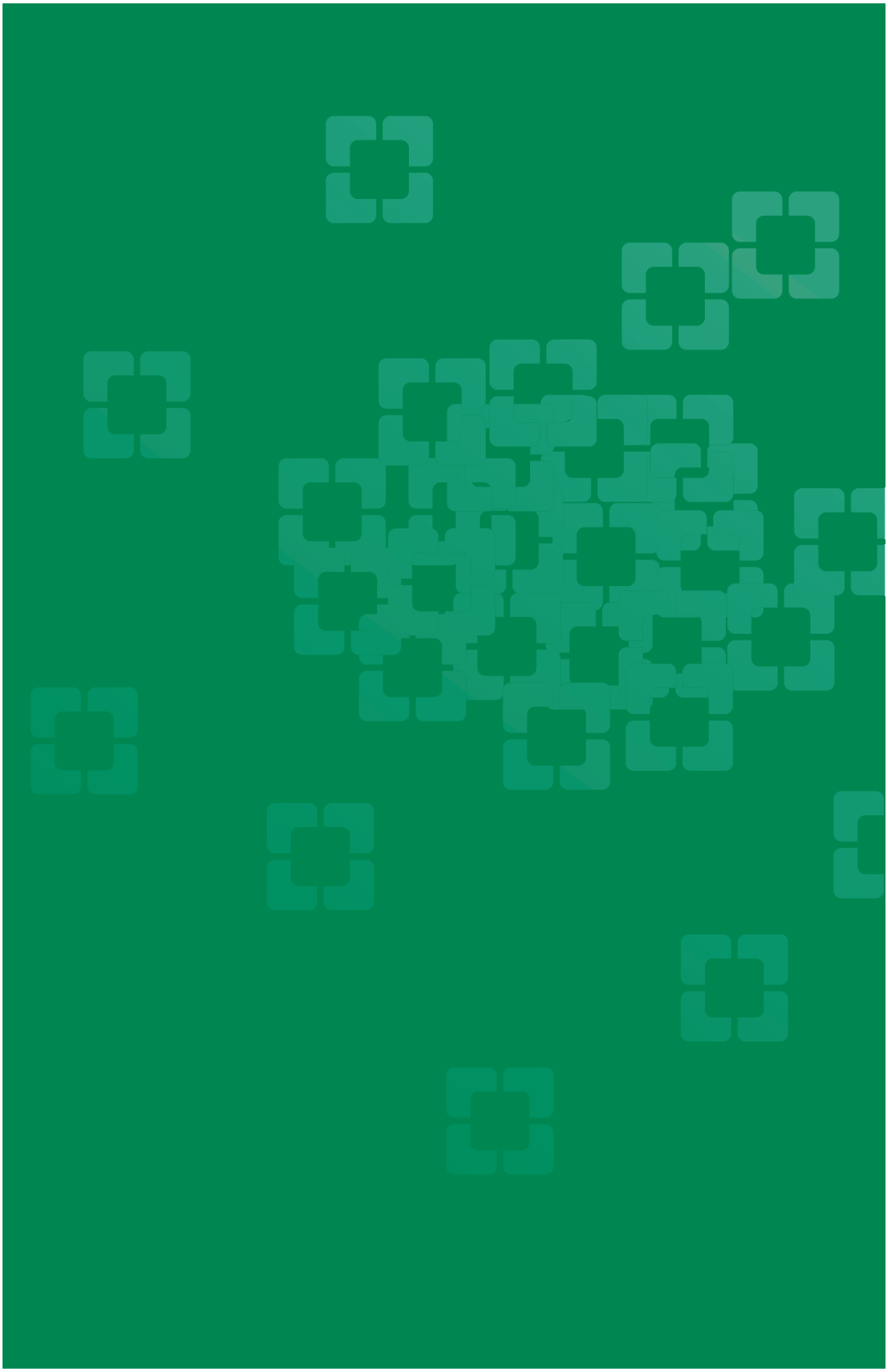
Carolyn M. Mazure, PhD
Norma Weinberg Spungen and Joan Lebson Bildner Professor
in Women's Health Research
Professor of Psychiatry and Psychology
Director, Women's Health Research at Yale
Yale School of Medicine

Judges (Oral Presentations)

Mariam AlHilli, MD, MS
Jennifer Bailit MD, MPH
Mindy Christianson, MD, MBA
Nina Desai, PhD, HCLD
Kevin Elias, MD
Jonathan D. Emery, MD
Emily Freeman DO, MA, MS
Monique Yoder Katsuki, MD, MPH
Adina R. Kern-Goldberger, MD, MPH, MSCE
Carolyn Mazure, PhD
Marie Fidela Paraiso, MD
Steven Waggoner, MD

Judges (Poster Presentations)

Cara D Dolin, MD, MPH
Ashley Gubbels, MD FACOG
Erin Higgins, MD, FACOG
Swapna Kollikonda, MD
Roberto Vargas, MD



Agenda

6:45–7:00 am	**Participants, Presenter & Judges Registration – Continental Breakfast**
7:00–7:05 am	**Introduction & Welcome** Rita Pappas, MD, FAAP, FHM Interim Chief, Obstetrics and Gynecology Institute Interim Chief, Children's Institute
7:05–7:10 am	Ruth Farrell, MD, MA Vice Chair of Research, Obstetrics and Gynecology Institute Professor of OB/GYN and Reproductive Biology, CCLCM of CWRU
7:10–8:00 am	**Keynote Address** ***The Importance of Studying Women's Health*** Carolyn M. Mazure, PhD Norma Weinberg Spungen and Joan Lebson Bildner Professor in Women's Health Research Professor of Psychiatry and Psychology Director, Women's Health Research at Yale Yale School of Medicine
8:00–8:05 am	**Q&A**
8:05–8:15 am	**Break**
8:15–9:35 am	**PGY3 Resident Oral Presentations**
8:15 am	***Analyzing the Fates of Fetal Growth Restriction (FGR): A Retrospective Analysis of Maternal Factors and Neonatal Outcomes at Time of Delivery*** Megan Ansbro, MD, PhD
8:23 am	Q&A
8:25 am	***Rates of Aneuploidy Amongst Patients with Recurrent Pregnancy Loss (RPL) vs Patients Without RPL Undergoing In-Vitro Fertilization (IVF)*** Dana Baraki, MD
8:33 am	Q&A

8:35 am	***Evaluation of In Utero Oxytocin Exposures on Autism-Like Behavior and Oxytocin Signaling in a Genetically Predisposed Mouse Model*** Parker Bussies, MD
8:43 am	Q&A
8:45 am	***The Effect of Maintenance Bevacizumab Cycle Length on Patient Outcomes and Healthcare Cost*** Andreea Dinicu, MD
8:53 am	Q&A
8:55 am	***Carbon Footprint in Gynecologic Surgery: Survey Study of Surgeon Experiences with and Perspectives on Environmental Waste in the Operating Room*** Emma Gargus, MD, PhD
9:03 am	Q&A
9:05 am	***Implementation of a Standardized Protocol for Intrapartum Diabetes Management*** Marissa Hand, MD
9:13 am	Q&A
9:15 am	***The Utility of Frailty Assessment Using the 5-Factor Modified Frailty Index to Predict Postoperative and Treatment Outcomes in Patients with Epithelial Ovarian Cancer Undergoing Neoadjuvant Chemotherapy Followed by Interval Cytoreductive Surgery*** Jennifer Hansen, MD, MHS
9:23 am	Q&A
9:25 am	***Examining Demographic and Social Risk Factors for Obstetric Anal Sphincter Injury in a Single Integrated Health System*** Sunny Lee, DO
9:33 am	Q&A
9:35 am	**Poster Presentations and Break**

10:15 am– 11:45 am	Graduating Fellows Oral Presentation
10:15 am	***Antibiotics in Epithelial Ovarian Cancer: Differential Effects Based on Treatment Timing in Murine Models of Ovarian Cancer*** Daniel Margul, MD, PhD Fellow, Gynecologic Oncology
10:23	Q&A
10:25 am	***NSC59984 is a Radiosensitizer and Cytotoxic Agent in In Vitro and In Vivo Models of TP53mut Endometrial Cancer*** Camilla Yu, MD Fellow, Gynecologic Oncology
10:33 am	Q&A
10:35 am	***Artificial Intelligence and Machine Learning-Based Predictive Model for Endometriosis Surgery Outcomes*** Liron Bar-El, MD Clinical Fellow, Minimally Invasive Gynecologic Surgery
10:43 am	Q&A
10:45 am	***Microbial Metabolites and Outcomes of Pregnancy Study (MMOPs)*** Sarah Graves, MD Maternal Fetal Medicine
10:53 am	Q&A
10:55 am	***Examining the Role of Dietary Modifications on Ovarian Longevity in a Murine Model*** Hanna Kim, MD Fellow, Reproductive Endocrinology & Infertility
11:03 pm	Q&A
11:05 pm	***Body Mass Index (BMI) and Long-Term Surgical Outcomes in Native Tissue Prolapse Repair*** Meghan Hagedorn, DO Fellow, Female Pelvic Medicine and Reconstructive Surgery
11:13 am	Q&A

11:15 am	***A Novel Engineered Sling Treats Stress Incontinence Without Adhesion Formation in a Rat Model*** Marisa Vega, MD Fellow, Female Pelvic Medicine and Reconstructive Surgery
11:23 am	Q&A
11:25 pm	***Evaluating Neighborhood Socioeconomic Disadvantage in Patients with Abnormal Pap Smears*** Madeline Cohn, DO Fellow, Specialized Women's Health
11:33 am	Q&A
11:35 am	***Characteristics Associated with Variation in Diagnosis Comparing Dual Energy X-Ray Absorptiometry and Trabecular Bone Scoring in Women in a Specialty Women's Health Tertiary Care Center*** Rachel Novik, DO Fellow, Specialized Women's Health
11:43 am	Q&A
11:45 am	**Final Comments** **Group picture of all presenters, speakers & Institute Leadership**
12:00 pm	**Lunch**

Past Research Day Award Winners

Resident Poster Presentation – 1st Place

2024	Andreea Dinicu, MD
2023	Emily Frisch, MD
2022	Erika Lampert, MD
2021	Rachel Shin, MD, MPH
2020	Carrie Bennett, MD
2019	Jessica Son, MD
2018	Sarah Hershman, MD
2017	Caitlin Carr, MD
2016	Laura Moulton, DO, MS

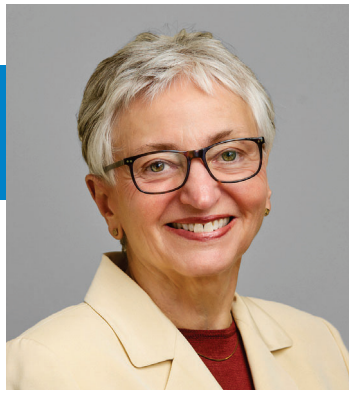
Resident Oral Presentation – 1st Place

2024	Riva Desai, MD
2023	Erika Lampert, MD
2022	Rachel Shin, MD, MPH
2021	Jonathan Hunt, MD, MBA
2020	Anna Chichura, MD
	Alyssa Herrmann, MD
2019	Emily Holthaus, MD
2018	Caitlin Carr, MD
	Julian Gingold, MD, PhD
2017	Laura Moulton, DO, MS
2016	Jamie Stanhiser, MD
2016	Lisa Caronia Hickman, MD

Fellow Oral Presentation – 1st Place

2024	Lannah Lua-Mailland, MD
2023	Danielle Chau, MD
2022	Michelle Kuznicki, MD, MA
2021	Laura Chambers, DO, MS
2020	Katie Crean-Tate, MD
2019	Elizabeth Conner, MD
2018	Tonya Nikki Thomas, MD
2017	Kathryn Maurer, MD
2016	Linnea Goodman, MD

Keynote Address & Lecture



Carolyn M. Mazure, PhD

Associate Professor in Obstetrics & Gynecology
Norma Weinberg Spungen and Joan Lebson Bildner Professor in Women's Health Research
Professor of Psychiatry and Psychology
Director, Women's Health Research at Yale
Yale School of Medicine

Dr. Carolyn M. Mazure is the Norma Weinberg Spungen and Joan Lebson Bildner Professor in Women's Health Research, and Professor of Psychiatry and Psychology at the Yale School of Medicine.

Dr. Mazure directs Women's Health Research at Yale – the university's interdisciplinary research center on the health of women, which she created in 1998. The center studies a wide breadth of topics from cardiovascular disease to cancers and continues to grow in its scientific productivity. Since its inception, the center has been recognized as a national model for launching research, translating findings, and sharing health information with the public and policymakers. The center also provides mentored training in interdisciplinary team science and has been committed to advancing the careers of junior faculty and students.

Her internationally recognized research contributions have focused on depression, one of the greatest causes of disability for women in the U.S. and globally, and the sex-specific relationship of stress to depression as well as co-occurring addictive behaviors (such as smoking, and opioid use and misuse). Current research targets strategies for promoting resilience, and health policies that serve to advance economic stability for women.

Dr. Mazure has served on the Advisory Committee for the NIH Office for Research on Women's Health, provided testimony to the U.S. Congress (House and Senate) on the health of women, served on the planning committee for the First White House Conference on Mental Health, and was a fellow for the U.S. Congress' Committee on Oversight and Government Reform.

She has been an invited speaker at diverse venues, such as NASA, the Smithsonian Institution, the National Academy of Medicine, and the Sorbonne, and has been a featured expert on ABC's "Prime Time Live" and in the BBC documentary "The Science of Stress." She has published extensively in the empirical literature, provided viewpoints for high-impact journals, and her edited books include "Does Stress Cause Psychiatric Illness?" and "Understanding Depression in Women: Applying Empirical Research to Practice and Policy."

Her national honors include the Marion Spencer Fay Award from the Institute for Women's Health and Leadership, the American Psychological Association Distinguished Leadership Award from the Committee on Women in Psychology, the Elizabeth Blackwell Award from the National Organization for Women, and a U.S. Public Health Fellowship.

Most recently, Dr. Mazure was invited to serve as the Chair of the first-ever White House Initiative on Women's Health Research. The initiative was launched in November 2023 through a Presidential Memorandum for the purpose of changing how women's health research is approached and funded. This effort resulted in program and policy changes that advance research opportunities and accelerate implementation of discoveries to improve women's health.

Honors from Yale include the Stephen Fleck Clinician and Teacher Award, the Sidney J. Blatt Award for Excellence in Clinical Care, Teaching, and Research, and the Elga R. Wasserman Courage, Clarity, and Leadership Award.

Judges (Oral Presentations)

Mariam Alhilli, MD
Associate Professor
Cleveland Clinic
Obstetrics & Gynecology Institute
Subspecialty Care for Women's Health
Faculty, Gynecologic Oncology

Nina Desai, PhD, HCLD
Director IVF/Andrology Laboratory
Cleveland Clinic

Jennifer Bailit, MD, MPH
Professor, Department of Reproductive Biology
Learner College of Medicine
Case Western Reserve University
Professor, Department of Population and Quantitative Health Sciences
Case Western Reserve University

Kevin Elias, MD
Lilli and Seth Harris Endowed Chair for Ovarian Cancer
Cleveland Clinic
Obstetrics & Gynecology Institute
Subspecialty Care for Women's Health
Faculty, Gynecologic Oncology

Mindy S. Christianson, MD, MBA
Section Chief, Reproductive Endocrinology & Infertility
REI Fellowship Program Director
Practice Director, Cleveland Clinic Fertility Center
Clinical Professor of Obstetrics, Gynecology and Reproductive Biology
Cleveland Clinic Lerner College of Medicine

Jonathan D. Emery, MD
Associate Professor, Obstetrics, Gynecology and Women's Health
Cleveland Clinic Lerner College of Medicine at Case Western Reserve University
Vice Chair, Department of Obstetrics and Gynecology, East Region
Department of Obstetrics & Gynecology
Obstetrics & Gynecology Institute
Cleveland Clinic

Judges (Oral Presentations)

Emily Freeman, DO, MA, MS
Assistant Professor
Cleveland Clinic
Obstetrics & Gynecology Institute
Obstetrics and Gynecology
Faculty, Complex Family Planning

Carolyn Mazure, PhD
Norma Weinberg Spungen and Joan Lebson Bildner Professor in Women's Health Research
Professor of Psychiatry and Psychology
Director, Women's Health Research at Yale
Yale School of Medicine

Monique Katsuki, MD, MPH
OB/Gyn Hospitalist, Obstetrics & Gynecology Institute
Assistant Department Chair, OB/Gyn Hillcrest Hospital
Assistant Professor of Obstetrics, Gynecology & Reproductive Biology
Cleveland Clinic Lerner College of Medicine of Case Western Reserve University

Marie Fidela Paraiso, MD
Vice Chair, Obstetrics and Gynecology Institute
Professor of OBGYN and Reproductive Health Sciences, CCLCM of CWRU School of Medicine
Section of Urogynecology and Reconstructive Pelvic Surgery
Cleveland Clinic Board of Governors Professional Advancement Council

Adina Kern-Goldberger, MD, MPH, MSCE
Assistant Professor of Obstetrics, Gynecology, & Reproductive Biology
Maternal Fetal Medicine
Obstetrics & Gynecology Institute
Department of Quantitative Health Sciences
Lerner Research Institute

Steven Waggoner, MD
Staff
Cleveland Clinic
Obstetrics & Gynecology Institute
Subspecialty Care for Women's Health
Faculty, Gynecologic Oncology

Judges (Poster Presentation)

Cara D. Dolin MD, MPH
Assistant Professor of Obstetrics & Gynecology
and Reproductive Biology
Division of Maternal-Fetal Medicine
Obstetrics and Gynecology Institute
Cleveland Clinic Lerner College of Medicine
Case Western Reserve University School
of Medicine

Swapna Kollikonda, MD
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Faculty, Obstetrics and Gynecology

Ashley Gubbels, MD FACOG
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Subspecialty Care for Women's Health
Faculty, Minimally Invasive Gynecologic Surgery

Roberto Vargas, MD
Staff, Division of Gynecologic Oncology
Program Director, Gynecologic Oncology Fellowship
Cleveland Clinic
Obstetrics and Gynecology Institute

Erin Higgins, MD, FACOG
Clinical Assistant Professor of Ob/Gyn and Reproductive
Biology,
Cleveland Clinic Lerner College of Medicine
Director of Simulation,
Obstetrics & Gynecology Institute
Associate Medical Director,
Simulation and Advanced Skills Center

Obstetrics & Gynecology Institute

PGY3 Resident Oral Presentations

Analyzing the Fates of Fetal Growth Restriction (FGR): A Retrospective Analysis of Maternal Factors and Neonatal Outcomes at Time of Delivery

IRB 21-1064

Megan Ansbro, MD, PhD

Objective: To compare outcomes for pregnancies complicated by FGR with neonatal outcomes at time of delivery and to evaluate maternal factors (chronic hypertension (HTN), gestational diabetes, body mass index (BMI), maternal gravidity) in FGR diagnoses and outcomes.

Methods: This was a multicenter, retrospective cohort of women and infants delivered at Cleveland Clinic Obstetric units in Ohio between 1/1/2010 and 07/31/22 with an ICD-10 diagnosis code of fetal growth restriction (FGR) during pregnancy (IRB# 21-1064). Data was obtained via EPIC query/REDCap. FGR was defined by ultrasound estimated fetal weight (EFW) or abdominal circumference (AC) <10th percentile and small for gestational age (SGA) was defined as neonatal weight <10th percentile at birth and compared with average for gestational age (AGA) and large for gestational age (LGA) neonates. Exclusion criteria included multiple gestations, fetal and genetic anomalies. Delta correlation heatmaps were used to determine associations between variables.

Results: A total of 763 pregnancies diagnosed with FGR were analyzed. Of these pregnancies, 48.8% of infants were SGA at time of delivery, 51% were AGA, and 0.2% (one infant) LGA. Early FGR (< 32 weeks gestation at the time of FGR diagnosis) compared to late (>32 weeks gestation) FGR infants were more likely to be AGA. Pregnancies complicated by persistent FGR were more likely to be delivered by Cesarean section for non-reassuring fetal testing than resolved FGR. Maternal BMI (higher BMI) at delivery and maternal gravidity (increasing parity) were positively correlated with resolution of FGR.

Conclusions: Fetal growth restriction complicates approximately 10% of pregnancies and can contribute to significant perinatal morbidity and mortality. As there are no cures for FGR, surveillance (via ultrasound and fetal testing) guides further management and interventions, if indicated. This retrospective analysis demonstrated that in a cohort of infants delivered at CCF hospitals in Ohio, more than half of infants diagnosed with FGR were AGA at time of birth. This result is likely multifactorial and restricted by the ability to fully account for confounding variables such as parental characteristics (maternal and paternal) as well as maternal co-mor-

bidities. Our retrospective cohort provides insight that maternal BMI (higher BMI at time of delivery) and gravidity are positively correlated with resolution of FGR, which has the potential to shape future surveillance and targeted interventions for pregnancies complicated by FGR. Further studies are needed to compare FGR and maternal comorbidities (maternal HTN, obesity, diabetes, neonatal factors, as well as maternal/paternal genetics) to further predict FGR diagnoses and outcomes.

Funding Source: None

Faculty Mentors: Amol Malshe, MD; Ahmed Ahmed, MD

Rates of Aneuploidy Amongst Patients with Recurrent Pregnancy Loss (RPL) vs Patients without RPL Undergoing *In-Vitro* Fertilization (IVF)

IRB 24-272

Dana Baraki, MD

Objective: Determine if couples diagnosed with recurrent pregnancy loss of unknown etiology undergoing IVF with PGT-A have increased percentage of aneuploid embryos compared to patients undergoing IVF with PGT-A for other indications.

Methods: This is a retrospective chart review of all patients between the ages of 25-35 who underwent IVF and completed PGT-A testing on blastocyst staged embryos at a single academic center between January 1, 2018 and December 31, 2023. Patients were excluded if they were <25 or >35 years of age, did not undergo PGT-A, or had a known cause of RPL (antiphospholipid syndrome, balanced translocation, etc.). Data was compared using two-sample t-tests. Continuous measures that showed departure from normality and ordinal measures were summarized using medians and quartiles and compared using Wilcoxon rank sum tests. Categorical factors were summarized using frequencies and percentages and compared using Fisher's Exact tests. The primary outcome was percentage of aneuploid embryos. The secondary outcome was blastulation rate.

Results: During the study period, 46 patients with recurrent pregnancy loss and 204 patients without RPL were identified that met inclusion criteria. No significant differences in terms of age, number of IVF cycles, or stimulation protocol were identified. The average number of oocytes retrieved, fertilization rate, and blastulation rate were not significantly different between RPL and non-RPL patients. The blastulation rate was 0.62 (0.50, 0.73) for non-RPL patients and 0.63 (0.40,

0.73) for RPL patients (p-value 0.39). Additionally, no significant difference was detected in the aneuploidy rate for non-RPL patients compared to RPL patients; 0.27 (0.13, 0.44) and 0.33 (0.13, 0.50) respectively (p-value 0.22).

Conclusions: In this cohort of women undergoing IVF between the ages of 25-35, there was no difference in rates of number of oocytes retrieved, fertilization rate, blastulation rate, or aneuploidy rate between patients with a diagnosis of recurrent pregnancy loss of unknown etiology and those who were undergoing IVF for other indications. This suggests that the cause of recurrent pregnancy loss in patients without a known reason is unlikely to be due to aneuploidy but rather, other factors.

Funding source: None

Faculty Mentor: Jenna Rehmer, MD

Evaluation of *In Utero* Oxytocin Exposures on Autism-Like Behavior and Oxytocin Signaling in a Genetically Predisposed Mouse Model

Parker Bussies, MD

Objective: To evaluate the impact of supraphysiologic maternal oxytocin levels on long-term social behavior and oxytocin signaling in offspring with genetic predisposition for autism-like behavior.

Methods: This Wild-type C57BL/6 females underwent timed breeding with Pten-mutant, oxytocin-reporting males. Micro-osmotic pumps secreting oxytocin versus PBS control were inserted subcutaneously into pregnant females at term (E18.5). Following 12 hours of exposure, pregnant females underwent cesarean section and pups were transferred to CD1 foster moms. In adulthood, offspring were subjected to behavioral testing to evaluate for autism-like behavior. Central oxytocin signaling was subsequently assessed at the levels of hypothalamic oxytocin production, peripheral oxytocin secretion, and distal oxytocin receptor methylation

Results: A total of 67 mice were evaluated, with similar ratios of sex (M 32, F 35), genotype (28 WT, 39 Pten-mutant), and exposure group (PBS 37, Oxt 30). Among wild-type offspring, *in utero* oxytocin exposure was not associated with differences in open field, marble burying, grooming, Y-maze, 3-chamber, or Morris water maze

performance (all P>0.05). Similarly, no differences in hypothalamic oxytocin expression, peripheral oxytocin secretion, or oxytocin receptor methylation in the prefrontal cortex or hippocampus were observed (all P>0.05). Among offspring harboring germline Pten mutation, *in utero* oxytocin exposure was associated with improved time-to-goal ($p<0.05$) and increased spontaneous alteration counts ($P<0.001$) in the Moris water and Y maze, respectively. No differences in hypothalamic oxytocin expression, peripheral oxytocin secretion, or oxytocin receptor methylation in the prefrontal cortex or hippocampus were observed (all P>0.05).

Conclusions: Use of oxytocin for labor induction did not confer long-term risks for autism-like behavior or oxytocin signaling dysfunction. Among genetically predisposed offspring, oxytocin exposures even improved spatial learning, although this was not associated with changes in central oxytocin signaling. Overall, this study improves upon prior animal pregnancy models and provides reassurance for current Pitocin use practices, even in pregnant individuals with significant family history for autism spectrum disorder.

Funding source: Bernadine Healy Research Fellowship

Faculty Mentors: Charis Eng, MD, PhD; Tara DeSilva, PhD

The Effect of Maintenance Bevacizumab Cycle Length on Patient Outcomes and Healthcare Cost

IRB 24-162

Andreea Dinicu, MD

Objective: To assess differences in overall survival (OS), progression free survival (PFS), toxicity, and cost of 21-day vs 28-day cycles of bevacizumab among patients with recurrent ovarian cancer.

Methods: This retrospective chart review included patients ages 18 and older who were diagnosed with recurrent ovarian, primary peritoneal, or fallopian tube cancer and received maintenance treatment with bevacizumab at a large academic center from July 1 2018 to July 1 2023. Data regarding demographic and oncologic factors were extracted from the electronic medical record. Patients were categorized by cycle length. Normally distributed continuous variables were reported as mean and standard deviation. Other continuous and ordinal variables were reported using medians and interquartile range. Categorical factors were described as

frequencies and percentages. Cox proportional hazards regression right-censored univariate models were performed for PFS and OS, log-rank tests.

Results: Of the 54 patients included, 33 received 21-day cycles of bevacizumab and 21 received 28-day cycles. No differences in baseline characteristics were noted among the two groups. Median PFS was 19.7 months in the 21-day group and 29.9 in the 28-day group (p=0.065). Five-year OS was 19.2% vs 51.5% in the 21-day vs 28-day groups respectively (p=0.17). The average total time receiving bevacizumab in the 21-day group was 9 months vs 16 months in the 28-day group (p=0.028). There were no significant differences in side effect profiles, apart from non-central nervous system (CNS) bleeding; this occurred in 23.8% of the 28-day group compared to none in the 21-day group (p=0.006) and included minor grade 1 toxicities, primarily gum bleeding. The mean cost of bevacizumab per year was $145,540 in the 21-day group vs $136,177 in the 28-day group (p=0.52).

Conclusions: In this cohort, patients receiving bevacizumab on a 28-day cycle had a clinically meaningful improvement in their PFS and OS. The difference was not statistically significant likely due to small sample size. Notably, total time receiving bevacizumab was significantly higher in the 28-day group, exceeding the 21-day group by 7 months and possibly indicating increased survival or better tolerability. Both cost and toxicity profiles were overall similar in both groups. These findings warrant additional studies in larger populations.

Funding source: None

Faculty Mentor: Robert DeBernardo, MD

Carbon Footprint in Gynecologic Surgery: Survey Study of Surgeon Experiences with and Perspectives on Environmental Waste in the Operating Room

IRB 22-820

Emma Gargus, MD, PhD

Objective: To evaluate gynecologic surgeons' experiences and perceptions regarding environmental waste in the operating room (OR) and their willingness to change behavior to decrease waste.

Methods: This web-based survey of members of the Society of Gynecologic Sur-

geons evaluated attitudes and experience regarding intraoperative waste and strategies for sustainability. The survey was emailed to participants and managed in REDCap. The survey asked about participant demographics, experiences, and attitudes. The survey also included education about the carbon footprint of gynecologic OR practices and instruments. Participants were asked their preferences about surgical approaches and instruments both before and after the education intervention. GraphPad was used for data visualization and data analysis.

Results: Emails were sent to 442 members of SGS and opened by 308 of those members. 71 responded to the survey, for a response rate of 16.1%. Surgical specialties represented included female pelvic medicine and reconstructive surgery (74.6%), minimally invasive gynecologic surgery (21.1%) and general OB/GYN (4.2%). Over 50% of participants have practiced for ≥ 11 years, however participants' years in practice ranged from less than one to greater than 20 years. In a typical month, all or nearly all participants performed at least one hysterectomy (100%) and laparoscopy (92.9%), with fewer participants performing hysteroscopy (42.3%). 67.6% of participants reported performing robotic surgery. 74.6% of participants agreed or strongly agreed that they had contributed to OR waste. Most participants (90.1%) stated that it was important or very important to reduce greenhouse gas emissions in healthcare. Only 4.2% of participants thought they could not make an impact on OR waste. When presented information about the carbon footprint of different surgical approaches and instruments, more participants thought they could make a "major" (11.2% to 15.5%) or "significant" (23.9% to 26.8%) impact on the amount of OR waste.

Conclusions: This cohort of gynecologic surgeons has experienced OR waste. Most believe that decreasing greenhouse gas emissions in the OR is important and that they can impact OR waste. Future work will expand distribution of this survey to target additional gynecologic surgeons and explore surgeons' opinions about interventions to decrease waste in the OR.

Funding: None

Faculty Mentor: Elliott Richards, MD

Implementation of a Standardized Protocol for Intrapartum Diabetes Management

IRB 23-1159

Marissa Hand, MD

Objective: To determine if implementation of a standard protocol for intrapartum diabetes management is associated with improved maternal and neonatal outcomes.

Methods: This is a retrospective cohort study of people with diabetes in pregnancy who underwent a trial of labor at Fairview or Hillcrest Hospital between 1/1/24 and 3/31/25. In July 2024, a standardized intrapartum diabetes management protocol was implemented with structured recommendations for blood glucose monitoring and medical management in people with pregestational and gestational diabetes. Prior to this protocol, intrapartum management was individualized by the delivering clinician. Outcomes were compared from two time periods: before protocol implementation, 1/1/24 – 6/30/24, and after, 10/1/24 – 3/31/25, with three months excluded to allow for phasing in of the protocol. The primary outcome was neonatal hypoglycemia (blood glucose < 40 mg/dL) during the first 24 hours of life. Secondary neonatal outcomes included neonatal intensive care unit admission, treatment with intravenous dextrose, and hyperbilirubinemia. Maternal outcomes included intrapartum hyperglycemia and treatment with insulin. Demographic and clinical characteristics were examined with bivariable analysis. A negative binomial model was used to assess the primary outcome before and after the protocol implementation in an interrupted time series analysis.

Results: Currently undergoing data analysis, anticipated results available in April 2025. We hypothesize that standardization of intrapartum diabetes management will be associated with improved regulation of neonatal blood glucose levels.

Conclusions: Final conclusions pending results of data analysis. The data garnered from this study will help add to the body of information on intrapartum diabetes management and help guide other institutions on best practice guidelines for clinical management of pregestational and gestational diabetes on labor and delivery units.

Funding: None

Faculty Mentor: Cara Dolin, MD, MPH

The Utility of Frailty Assessment Using the 5-Factor Modified Frailty Index to Predict Postoperative and Treatment Outcomes in Patients with Epithelial Ovarian Cancer Undergoing Neoadjuvant Chemotherapy Followed by Interval Cytoreductive Surgery

IRB 20-273

Jennifer Hansen, MD, MHS

Objective: Our primary objective was to assess whether the five-factor modified frailty index (mFI) is associated with non-home discharge and postoperative complications in patients with epithelial ovarian cancer undergoing interval cytoreductive surgery (CRS) following neoadjuvant chemotherapy. Secondary objectives were to 1) Assess whether CT markers of body composition correlated with mFI and 2) Compare demographic, oncologic, intraoperative, postoperative factors, and survival based on mFI in patients undergoing interval CRS.

Methods: A single-institution, retrospective review of 179 patients undergoing interval cytoreductive surgery for epithelial ovarian cancer was performed. Variables collected included age at diagnosis, BMI, race, smoking status, ASA score, comorbidities, mFI-5, Baseline labs, pre-operative CT scan body composition analysis, pre-operative labs, BRCA germline status, surgery performed, surgical complexity, operative complications, grade of complications, length of stay, and discharge location. Comparisons were made using Wilcoxan Rank Sum test, Pearson's chi-square test, and Fischer's Exact test where appropriate.

Results: Factors significantly associated with non-home discharge were older age (71.5 vs. 64, $p=0.001$), higher ECOG performance status ($p=0.005$), and lower preoperative albumin (4.0 vs. 4.1, $p=0.029$). Frail patients had significantly higher rates of pulmonary disease, cardiovascular disease, diabetes, higher ASA score, and lower performance status ($p<0.001$). There was no difference in the rate of ascites between frail and non-frail patients. Patients with frailty demonstrated higher VAT and SAT area, and a higher VAT/ SAT ratio. No difference was observed in intraoperative variables operative complexity, postoperative outcomes, or non-home discharge based on frailty.

Conclusions: The rate of frailty in patients undergoing NACT was 18% similar to prior studies based on mFI. We highlight a potential link between frailty and metabolic dysfunction, represented by higher adiposity by CT-based body composition analysis. Our study confirms the importance of age, performance status and preoperative albumin, and comorbidities in predicting non-home discharge. Investi-

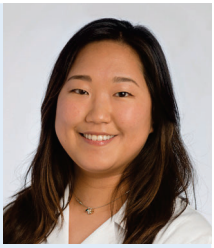
gation into direct comparisons of frailty between patients undergoing primary CRS and NACT warrants further investigation.

Funding: None

Faculty Mentor: Mariam AlHilli, MD

Examining Demographic and Social Risk Factors for Obstetric Anal Sphincter Injury in an Integrated Health System

IRB 24-977



Sunny Lee, DO

Objective: Asian race has been suggested to be risk factor for obstetric anal sphincter injury (OASI) in the US, and some studies have shown that rates of OASI are lower for Asian patients residing in Asia. It is possible that there are unique drivers of OASI risk for Asian patients living in the US which may include social determinants of health, particularly English fluency, as this can impact communication during labor. The purpose of this study is therefore to (1) assess independent risk of OASI among Asian patients after accounting for potentially relevant social determinants of health (SDoH), and (2) to evaluate risk of OASI among all non-English speaking patients.

Methods: This is a retrospective cohort study of patients who delivered from 1/1/2018-6/30/2024 in the Cleveland Clinic Health System. Patients who were at least 18 years old and delivered vaginally were included. Multiple gestations and deliveries less than 20 weeks were excluded. The primary outcome was OASI, defined as 3rd or 4th degree perineal laceration as documented in the delivery note. Secondary outcome was a composite of adverse perinatal events related to OASI, including infection, hematoma, revision, anal incontinence, rectovaginal fistula. Patient demographic and clinical characteristics, as well as obstetric outcomes, were compared in bivariate analyses. A multivariable logistic regression model was then developed to compare the odds of OASI by race and identify other significant, independent predictors. The second analysis grouped patients by English-speaking status, and followed the same methods outlined above to assess independent risk of non-English speaking for OASI.

Results: 55,645 patients were included. Compared to non-Asian patients, Asian patients were more likely to be older, nulliparous, have lower pre-gravid BMI and

height, be commercially insured, have a lower area deprivation index, be non-English speaking, and have either pre-gestational or gestational diabetes. They were also more likely to undergo episiotomy and operative vaginal delivery. After accounting for relevant potential confounders in multivariable analysis, Asian patients were significantly more likely to have OASI, with an adjusted odds ratio (aOR) of 2.68 (95% CI 2.15 – 3.33). Significant risk factors for OASI among Asian patients that remained in the model included parity, operative delivery, and birthweight. The only significant SDoH predictor was marital status. There were significant differences between English and non-English speaking patients in bivariable analysis. Accounting for these variables in the regression model, non-English speaking status was associated with increased odds of OASI, with aOR of 1.34 (95% CI 1.00 – 1.80).

Conclusions: In this patient population, Asian race remained an independent risk factor for OASI without any clear underlying SDoH drivers, though nulliparity and operative delivery were significant predictors. Clinicians should take this into account when counseling patients and providing informed consent for operative vaginal delivery. In addition, non-English speaking patients may be at an increased risk of OASI. This highlights a potential opportunity to improve patient care as suboptimal communication may precipitate this risk.

Funding: None

Faculty Mentor: Deepanjana Das, MD; Adina Kern-Goldberger, MD, MPH, MSCE

Obstetrics & Gynecology Institute

PGY2 Resident Poster Presentations

IRB 25-216
Unintended Pregnancy and Contraceptive Use in the Era of Semaglutide

Faculty Mentor: Meredith Dorr, MD

Rachel Cevigney, MD

IRB 23-405
Simulation-Based Training in OB/GYN

Faculty Mentor: Erin Higgins, MD, FACOG

Cameron M. Harris, MD

IRB Pending
Examining Various Methods of Progesterone Supplementation to Gender Affirming Hormone Therapy in Transgender Females

Faculty Mentor: Henry N.G., MD

Chloe Kaunitz, DO

IRB 25-197
Assessing Disparities in the Availability of Emergency Contraception in Retail Pharmacies in Northeast Ohio

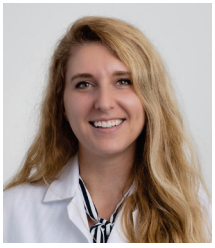
Faculty Mentor: Emily Freeman, DO, MA, MS

Alexandra McKinzie, MD

IRB N/A

The Association between Age and Postoperative Outcomes following Laparoscopic Hysterectomy for Uterine Fibroids

Faculty Mentor: Cara King, DO; Fellow Mentor: Liron Bar-El, MD

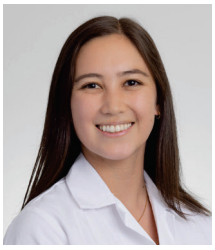


Gabrielle Mintz, MD

IRB 23-518

Exploring Risk Factors for Severe Maternal Morbidity in Low-Risk Patients

Faculty Mentor: Adina Kern-Goldberger, MD, MPH, MSCE

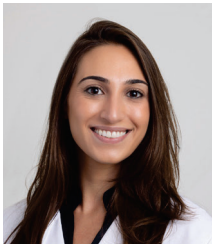


Rachel O'Brien, MD

IRB 24-681

Contemporary Risks of Oocyte Retrieval Cycles in the United States from 2016–2021

Faculty Mentor: Mindy Christianson, MD, MBA



Ariella Yazdani, MD

Obstetrics & Gynecology Institute

Graduating Fellow Oral Presentations

Antibiotics in Epithelial Ovarian Cancer: Differential Effects Based on Treatment Timing in Murine Models of Ovarian Cancer

Daniel Margul, MD, PhD

Background: Epithelial ovarian cancer is the second most common gynecologic cancer and the second most common cause of gynecologic cancer death. Though upfront surgery and platinum-based chemotherapy is highly effective, up to 80% of patients recur, eventually developing platinum resistance, wherein there are limited treatment options and poor outcomes. Retrospective clinical studies suggest that antibiotic use during chemotherapy is associated with poor overall survival and *in vivo* murine models indicated that alterations to the gut microbiome through antibiotic treatment promotes tumor growth and suppresses sensitivity to cisplatin. These findings also identified indole-3-propionic acid as a putative gut metabolite linking the gut microbiome to ovarian cancer.

Objective: Herein we sought to first evaluate platinum resistance with antibiotic treatments using KPCA and BPPNM cell lines, which more reliably recapitulate both the mutations and phenotypes of human epithelial ovarian cancer. Second, we sought to test whether repletion of Indole-3-propionic acid and/or reconstitution of the gut microbiome would reverse the platinum resistance that was induced by antibiotic treatment.

Results: We demonstrated that though both the KPCA and BPPNM cell lines were effective as syngeneic mouse models that represented many of the clinic features of human ovarian cancer, unlike other cell lines, they do not demonstrate platinum resistance in the setting of antibiotic use. In contrast, antibiotic pretreatment prior to IP injection with KPCA cells inhibits tumor growth and frequently results in cancer cure and mouse survival even without chemotherapy. When antibiotics are initiated after tumors were established, tumor growth was unaffected by antibiotics. *In vitro* studies did not identify an effect of antibiotics on KPCA cell survival at clinically meaningful doses. Neither repletion of Indole-3-propionic acid, nor reconstitution of the gut microbiome affected tumor cell survival in the setting of antibiotic pretreatment.

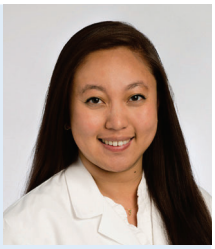
Conclusions: Alteration of the gut microbiome through antibiotic pretreatment inhibits tumor growth of KPCA and BPPNM ovarian cancer cell lines, suggestive of a potential role of the gut microbiome in tumor engraftment into peritoneal surfaces.

Funding: None

Faculty Mentor: Ofer Reizes, PhD

NSC59984 is a Radiosensitizer and cytotoxic Agent in *In Vitro* and *In Vivo* Models of TP53mut Endometrial Cancer

ICB-1927



Camilla Yu, MD

Objective: The majority of endometrial cancer (EC) mortalities are due to high-grade tumor histologies, many of which harbor *TP53* mutations. NSC59984 is a small-molecule drug hypothesized to restore p53 signaling in *TP53*-mutant cancers and has not been explored in EC. We aimed to test the cytotoxic and radio-sensitizing potential of NSC59984 in p53-aberrant EC and its mechanism of action.

Methods: Using parental EC cell lines with differing *TP53* statuses, we generated dose-response curves for NSC59984. To assess for mutation specific effect, we generated dose-response curves using CRISPR/Cas9-modified variants of JHUEM2 cells, harboring 5 common *TP53* mutations. Western blot analysis was performed to assess p53, p21, PUMA, GADD45, and NOXA signaling. To evaluate NSC59984 as a radio-sensitizer, we evaluated our JHUEM-2 *TP53* variants and Hec1B treated with NSC59984 and radiation. Isobolograms were generated to evaluate the interaction between NSC59984 and radiation. *In vivo* experiments were performed using HEC1B xenograft tumors generated in female NSG mice. 2 mice were included in each group: vehicle, RT alone, NSC59984 alone, and NSC59984 with radiation.

Results: NSC59984 demonstrated a negative, dose-dependent effect in all cell lines. IC50s were similar and ranged between 4.2-6.1μM. In Western blots, NSC59984 led to restoration of p53 downstream signaling via p21, PUMA, and NOXA. There also appeared to be decreased accumulation of mutant p53 across all *TP53*-variant cell lines. Radio-sensitization assays demonstrated synergistic effect of NSC59984 and radiation in all cell lines with maximum synergy at 5μM of NSC59984 and 2Gy.

In vivo experiments confirmed *in vitro* findings with NSC59984 and radiation significantly suppressing tumor growth compared to vehicle or single-agent treat-

ment. Tumor growth inhibition synergy analysis using Bliss modeling demonstrated synergistic effect of NSC59984 and radiation with a mean Bliss synergy score of 101.6.

Conclusions: The NSC59984 has both cytotoxic and radio-sensitizing effects in both *in vitro* and *in vivo* models of EC. These appear to be independent of *TP53* mutations suggesting it bypasses inactive p53 and drives p21, PUMA, and NOXA signaling. The synergistic effect in p53-aberrant cell lines is within biologically relevant doses and supports the need for further pre-clinical investigation for a disease with significant unmet need and poor outcomes.

Funding: AACR

Faculty Mentor: Roberto Vargas, MD

Artificial Intelligence and Machine Learning-Based Predictive Model for Endometriosis Surgery Outcomes

IRB 24-564

Liron Bar-El, MD

Objective: To develop and validate a machine learning-based individualized predictive model that estimates the risk of perioperative complications in endometriosis excision surgery, integrating patient-specific clinical, imaging, and demographic data to enhance surgical planning, risk stratification, and patient counseling.

Methods: We analyzed electronic health record data from patients who underwent endometriosis excision surgery at the Cleveland Clinic (Ohio and Florida) between 2017 and 2024. Predictors—including demographic factors, comorbidities, surgical history, imaging findings, and preoperative evaluations—were extracted using Structured Query Language (SQL) queries and natural language processing (NLP). The primary outcome was the rate of major perioperative complications; secondary outcomes included minor complications and colorectal and genitourinary-specific adverse events. Machine learning models were developed using the Machine Intelligence Learning Optimizer (MILO) platform, which generates prediction models using multiple algorithms including neural networks, logistic regression, Naïve Bayes, k-nearest neighbors, support vector machines, random forest, and gradient boosting. Model performance was validated by human chart review and assessed using c-statistics, sensitivity, specificity, and fairness metrics across demographic

subgroups to detect potential biases. Statistical power calculations estimated 80% power to detect a c-statistic of 0.7 for major complications.

Results: The developed machine learning algorithm is designed to accurately predict perioperative complications, including colorectal and genitourinary-specific adverse events, in endometriosis excision surgery. The model is trained and validated using retrospective data, incorporating demographic, clinical, imaging, and surgical variables to generate real-time, patient specific risk assessments. Continuous learning mechanisms will enable the model to refine its predictive accuracy through ongoing data integration from multiple centers, expanding its generalizability.

Conclusions: This study introduces a novel AI-based model hypothesized to predict perioperative risks in endometriosis surgery. If confirmed, the tool has the potential to improve preoperative planning, patient counseling, and shared decision-making. In addition to complications, the model demonstrates promise in forecasting other surgical metrics and patient outcomes, highlighting its broader clinical utility. Future efforts will focus on continuous performance monitoring, refinement, and integration into clinical workflows.

Funding: RPC grant 9476

Faculty Mentor: Cara King, DO

Microbial Metabolites and Outcomes of Pregnancy Study (MMOPS)

IRB 24-106

Sarah Graves, MD

Objective: This study aimed to evaluate the association between gut microbial metabolites associated with cardiometabolic disease, including trimethylamine N-oxide (TMAO), during pregnancy with the development of hypertensive disorders of pregnancy (HDP) and other pregnancy-specific cardiovascular risk factors.

Methods: We performed a prospective longitudinal cohort study of patients with singleton pregnancies aged 18-45 years. Exclusion criteria included genetic abnormalities, major congenital anomalies, or congenital infections. Maternal blood samples were collected at 10-14 weeks gestation, 24-28 weeks gestation, and at

time of delivery. Placenta was collected at delivery. Plasma blood samples were assayed for predetermined gut microbiota-derived metabolites using established isotope dilution LC-MS/MS methods. The placentas underwent full pathological evaluation by a trained perinatal pathologist. We plan to calculate the odds ratio (OR) and adjusted OR for HDP by TMAO concentration using multivariable logistic regression with adjustment for confounding variables.

Results: Currently, our analysis is in progress. We anticipate the completion of our analysis and review of our results prior to the time of this presentation.

Conclusions: Final conclusions will be presented following the completion of our data analysis.

Funding source: Cleveland Clinic Research Programs Committee and the Cleveland Clinic Obstetrics and Gynecology Institute (RPC #7688 to C. D.) the Ohio Section of the American College of Obstetrics and Gynecology (to S.G), and The Stanley Hazen Laboratory

Faculty Mentor: Cara Dolin, MD, MPH

Examining the Role of Dietary Modifications on Ovarian Longevity in a Murine Model

IACUC 00002258

Hanna Kim, MD

Objective: To examine the effect of a high fat diet during the adolescent period on the overall effect of H2S mediated maintenance of the ovarian primordial follicle pool.

Methods: We took 6-week-old C57/BL6 female mice (n=37) and separated them into 4 groups. 2 groups were given a 60% high fat diet for 6 weeks while the other 2 groups were continued on normal chow. During these 6 weeks, 1 of the groups receiving a high fat diet and 1 of the groups receiving normal diet were injected intraperitoneally with NaHS (direct H2S donor). The other 2 groups were injected with saline as control. Once the intervention was completed the mice were then returned to a normal diet. We collected blood and body composition date from baseline, at the end of 6 weeks, 6 weeks post-intervention, and at 1 year of age. Additionally, a cohort of mice from each group were euthanized and organs were

harvested at the end of intervention and at 1 year of age for the mice. We are assessing ovarian tissue and serum collected for a variety of markers through ELISA assays, immunohistochemical staining, and qPCR.

Results: Still completing data collection.

Conclusions: The hypothesis is that when compared to anti-aging diets, a pro-aging diet especially with exposure in the adolescent period will decrease ovarian longevity. However, the addition of a direct H2S donor will help to negate the effects of the high fat diet on ovarian aging. If our hypothesis hold, this could provide an idea into the mechanism by which the primordial follicle pool is maintained or depleted. Additionally, this could show the effects of adolescent diet on overall ovarian health.

Funding: NIH R01NS127374, NIH 5T32GM137868-02

Faculty Mentor: Christopher Hine, PhD

Body Mass Index (BMI) and Long-Term Surgical Outcomes in Native Tissue Prolapse Repair

IRB 23-018

Meghan Hagedorn, DO

Objective: To assess differences in surgical failure rates between sacrospinous ligament fixation (SSLF) and uterosacral ligament suspension (ULS) across Body Mass Index (BMI) subgroups and to identify risk factors associated with surgical failure.

Methods: This study is a secondary analysis of the Extended-OPTIMAL (E-OPTIMAL) trial, a five-year follow-up of the original OPTIMAL trial, in which participants were randomized to undergo either SSLF or ULS, with or without perioperative pelvic muscle training. The primary outcome of the OPTIMAL trial was composite surgical failure, defined as anatomical recurrence, symptom recurrence, or retreatment. In this secondary analysis, BMI subgroups were classified as normal (<25 kg/m^2), overweight (25–29.9 kg/m^2), obesity class 1 (30–34.9 kg/m^2), and obesity class 2 (≥ 35 kg/m^2). We conducted per protocol analysis and statistical comparisons were performed using chi-square tests, logistic regression, and Kaplan-Meier survival analysis. Statistical significance was defined as $p < 0.05$ and clinical significance was defined a priori as a 15% absolute difference in composite surgical failure between the two groups.

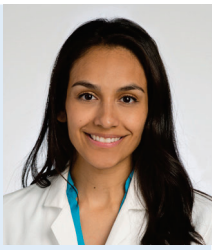
Results: A total of 368 participants were included: 185 underwent SSLF and 183 underwent ULS. No statistically significant differences in surgical failure rates were observed between SSLF and ULS within BMI subgroups. However, the absolute difference in surgical failure risk reached clinical significance in the overweight subgroup (15.2%) favoring ULS and approached clinical significance in the obesity class 2 subgroup (-13.6%) favoring SSLF. Multivariate regression identified prior cesarean delivery as the only independent risk factor for failure (OR 2.11, 95% CI 1.12-4.3, p = 0.019). Time-to-failure analysis did not reveal significant differences between procedures within BMI subgroups.

Conclusions: Surgical failure rates did not significantly differ between SSLF and ULS within BMI subgroups, although clinically meaningful trends were observed. More data are needed to determine whether patients with higher BMIs may benefit from SSLF. These findings highlight the need for further research to refine patient selection criteria and improve long-term native tissue prolapse repair outcomes.

Funding: None

Faculty Mentor: Shannon Wallace, MD

A Novel Engineered Sling Treats Stress Incontinence Without Adhesion Formation in a Rat Model



Marisa Vega, MD

Objective: Postoperative complications with polypropylene (PP) mesh requiring removal can be difficult due to substantial tissue infiltration into the large mesh pores. A newly engineered implant was developed using polytetrafluoroethylene (PTFE) with similar tensile strength and compliance as PP, but with a minimally microporous structure. A rat model was used to compare the PTFE implant to polypropylene (PP) in (1) the treatment of stress urinary incontinence (SUI) acutely and at 6 weeks after implantation and (2) the ease of implant extraction, adhesion formation, and induced histological changes at 1 and 6 weeks.

Methods: Acutely, we obtained cystometry with leak point pressure (LPP) on 12 female Sprague-Dawley rats first at baseline, then after bilateral pudendal nerve transection (PNT), and lastly after implantation of either the PTFE or PP implant. Next, 14 rats underwent PNT with subsequent placement of PTFE, PP, or a sham

implant. After 1 week, implant removal was timed, adhesions were scored on a 3-point grading scale (0=no adhesions, 1=thin adhesions, 2=focal dense adhesions, 3=dense widespread adhesions), and the urethra and anterior vagina were dissected for histological analysis. Lastly, 48 rats underwent PNT with implant placement (PTFE, PP, or sham), or sham PNT with a sham implant. After 6 weeks, we obtained cystometry with LPP, implant removal time, adhesions score, and tissue for histological analysis.

Results: PNT induced decreased LPP was restored after implantation of either PTFE or PP implants acutely ($p=0.03$, $p<0.01$) and at 6 weeks ($p<0.001$, $p<0.001$). There were no differences in LPP between implants both acutely and at 6 weeks. PTFE implants took significantly less time to remove compared to PP implants at 1 week (3 ± 1 vs 428 ± 134 sec; $p=0.002$) and 6 weeks (42 ± 23 vs 683 ± 133 sec; $p<0.0001$). PTFE implants created significantly less adhesions than PP implants at 1 week (0 ± 0 vs 2 ± 0; $p=0.001$) and 6 weeks (1 ± 0.75 vs 3 ± 0; $p<0.0001$). At 1 week, all groups had a comparable mild inflammatory response which resolved by 6 weeks. Both implant types induced increased collagen infiltration compared to sham groups at 1 and 6 weeks.

Conclusions: PTFE and PP implants comparably restored the PNT-induced SUI both acutely and after 6 weeks. PTFE implants created significantly less adhesions after 1 and 6 weeks, enabling faster removal. PP and PTFE induced similar histologic changes. This novel PTFE implant has the potential to improve SUI, while allowing easy extraction when necessary.

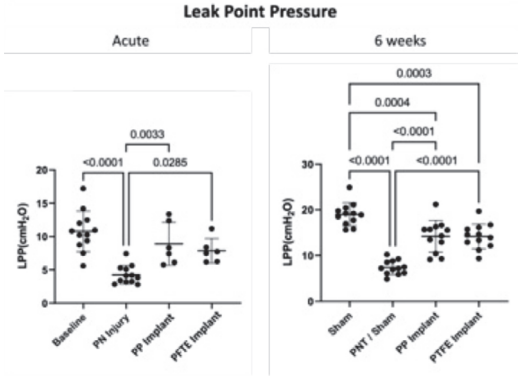


Fig. PTFE and PP implants comparably restored the PNT-induced SUI, measured by leak point pressure, in a rat model of stress urinary incontinence (SUI) both acutely and after 6 weeks.

Funding: None

Faculty Mentor: Shannon Wallace, MD

Evaluating Neighborhood Socioeconomic Disadvantage in Patients with Abnormal Pap Smears

IRB 24-772

Madeline Cohn, DO

Objective: To investigate the relationship between area deprivation index (ADI) and colposcopy completion in patients with abnormal pap smear. Additionally, evaluate the time from initial abnormal pap smear to colposcopy completion date in relationship to ADI, to determine the correlation between ADI and HPV vaccination status, and lastly, to report on the age, BMI, race and ethnicity in patients with abnormal pap smears in relation to ADI status

Methods: A This study utilized an active 12 month rolling Epic clinical database containing patients who have had an abnormal pap smear and/or HPV result in the previous 12 months. Data queried includes self-reported race, self-reported ethnicity, ADI score, HPV vaccination status, pap smear date, colposcopy date as well as if they were contacted by coordinator to assist with scheduling their colposcopy.

Results: The clinical database was downloaded in November 2024, at which point 14,469 patients were included in the Epic database. After removing those outside of Ohio as well as those without abnormal results, 9,337 patients remained. There was no difference amongst races and ethnicities in colposcopy completion. HPV vaccination (HR 1.20-1.39), being contacted by a coordinator (HR 1.12-1.43) and age (HR 1.002-1.007) were associated with increased rates of completion (all $p<0.001$). There was a significant difference in ADI among self-reported races and ethnicities ($p<0.001$). HPV vaccination was associated with higher ADI score (67.0 [44.0-83.0]) as compared to unvaccinated (65.0 [47.0-85.0]) however unclear clinical significance ($p = 0.001$). There was no difference in ADI in those that did or did not complete colposcopy at 30, 90, 180 and 270 days. Overall colposcopy completion rate was 38.2% at 270 days since pap smear with most patients completing by 90 or 180 days (32.9% and 37.7% respectively).

Conclusions: While there were significant differences in ADI among different races, ethnicities and vaccination status, clinical implications regarding colposcopy completion are unclear. HPV vaccination and increasing age are protective factors for colposcopy completion. Having a coordinator make contact can increase the rate as well, and perhaps timing this contact based on time at which more patients are lost to follow up can impact overall completion rate.

Funding: None

Faculty Mentor: Sharon Sutherland, MD

Characteristics Associated with Variation in Diagnosis Comparing Dual Energy X-Ray Absorptiometry and Trabecular Bone Scoring in Women in a Specialty Women's HealthTertiary Care Center

IRB 24-360

Rachel Novik, DO

Objective: To quantify the percentage of patients whose diagnosis is changed (improve, worsen, no change) when using trabecular bone score (TBS) in comparison to dual x-ray absorptiometry (DXA) when measuring bone mineral density. Then in those patients, to identify association between clinical characteristics of people with a change in diagnosis between DXA and TBS bone mineral density reports.

Methods: This was a retrospective study of women between 40 and 90 years of age, comparing the bone density of patients who have received both a DXA T-score and TBS T-score between January 2022 and December 2023. Patients were stratified according to change in diagnosis (no change, improve, or worsened) between DXA and TBS T-score. Demographic information, medical history, and specific medication history using the Hologic medical record and the Cleveland Clinic electronic medical record. Secondary causes of decreased bone mineral density such as specific chronic medical conditions, known bone affecting medications, and treatment for osteoporosis and osteopenia were queried to assess for potential association with diagnosis changes

Results: A total of 1262 patients were evaluated. The mean age was 59.8 years old. 264 patients (20.9%) had a change in diagnosis: 123 improved, 141 worsened. 998 (79.1%) did not have change in diagnosis from DXA to TBS T-score. Age, BMI, age of menopause, smoking status, Type 1 Diabetes, Type 2 Diabetes, menopause hormone therapy use, and bisphosphonate medication use were found to have a statistically significant impact on bone mineral density.

Conclusions: Decreased bone mineral density is associated with increased bone fragility and susceptibility to fracture and may be related to underlying disease processes in a patient. This study confirms certain significant secondary risk factors and medication treatments can significantly affect T-score when comparing

DXA to TBS. This change in diagnosis may affect a clinician's decision to pursue evaluation for secondary risk factors as well as initiate, change, or hold treatment.

Funding: None

Faculty Mentor: Holly L Thacker, MD

2024

Resident, Fellow and Faculty Publications

Obstetrics and Gynecology

1. Zhang P, Lappen JR, Attaway A, Erzurum S, Love TE, Zein J, Tsuang W. Asthma Exacerbation Risk in Pregnancy and Postpartum: Assessing the Impact of Gestational Diabetes Mellitus and Other Key Factors. *J Allergy Clin Immunol Pract.* 2024 Dec 19. pii: S2213-2198(24)01255-8. doi: 10.1016/j.jaip.2024.12.013. [Epub ahead of print] PubMed [citation] PMID: 39709050

2. Karmali R, Motairek I, Mazumder S, Berglund F, Braghieri L, Al-Dalakta A, Singh K, Weber B, Klein A. Noninvasive Multimodality Imaging and Special Treatment Considerations for Pericarditis in Pregnancy. *Am J Cardiol.* 2025 Mar 1;238:70-77. doi: 10.1016/j.amjcard.2024.12.007. Epub 2024 Dec 10. Review. PubMed [citation] PMID:39667515

3. Osmundson SS, Lappen JR. Antenatal Corticosteroid Administration for Patients at Risk for Late Preterm Delivery: Shared Decision-Making, Individualizing Risk, and Centering Patient Values. *Obstet Gynecol.* 2024 Dec 1;144(6):744-746. doi: 10.1097/AOG.0000000000005761. No abstract available. PubMed [citation] PMID: 39601701, PMCID: PMC11606526

4. Hopkins MA, Tabuchi M. The power of the rocking cradle: improving sleep function by gentle vibration. *Sleep*. 2024 Dec 11;47(12). pii: zsae245. doi: 10.1093/sleep/zsae245. No abstract available. PubMed [citation] PMID: 39441991

5. Kern-Goldberger AR, Hirshberg A, James A, Levine LD, Howell E, Harbuck E, Srinivas SK. Trends in severe maternal morbidity following an institutional team goal strategy for disparity reduction. *Am J Obstet Gynecol MFM.* 2024 Dec;6(12):101529. doi: 10.1016/j.ajogmf.2024.101529. Epub 2024 Oct 18. PubMed [citation] PMID: 39426622, PMCID: PMC11663122

6. Tewari S, Yao M, DeAngelo L, Rogness V, Buckley L, Kollikonda S, Goje O, Hopkins M. Postpartum Readmission after Unscheduled Cesarean Delivery in Patients with Class 3 Obesity. *Am J Perinatol.* 2024 Nov 26. doi: 10.1055/a-2445-3123. [Epub ahead of print] PubMed [citation] PMID: 39424362

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Fellow and Faculty Florida Publications 2024

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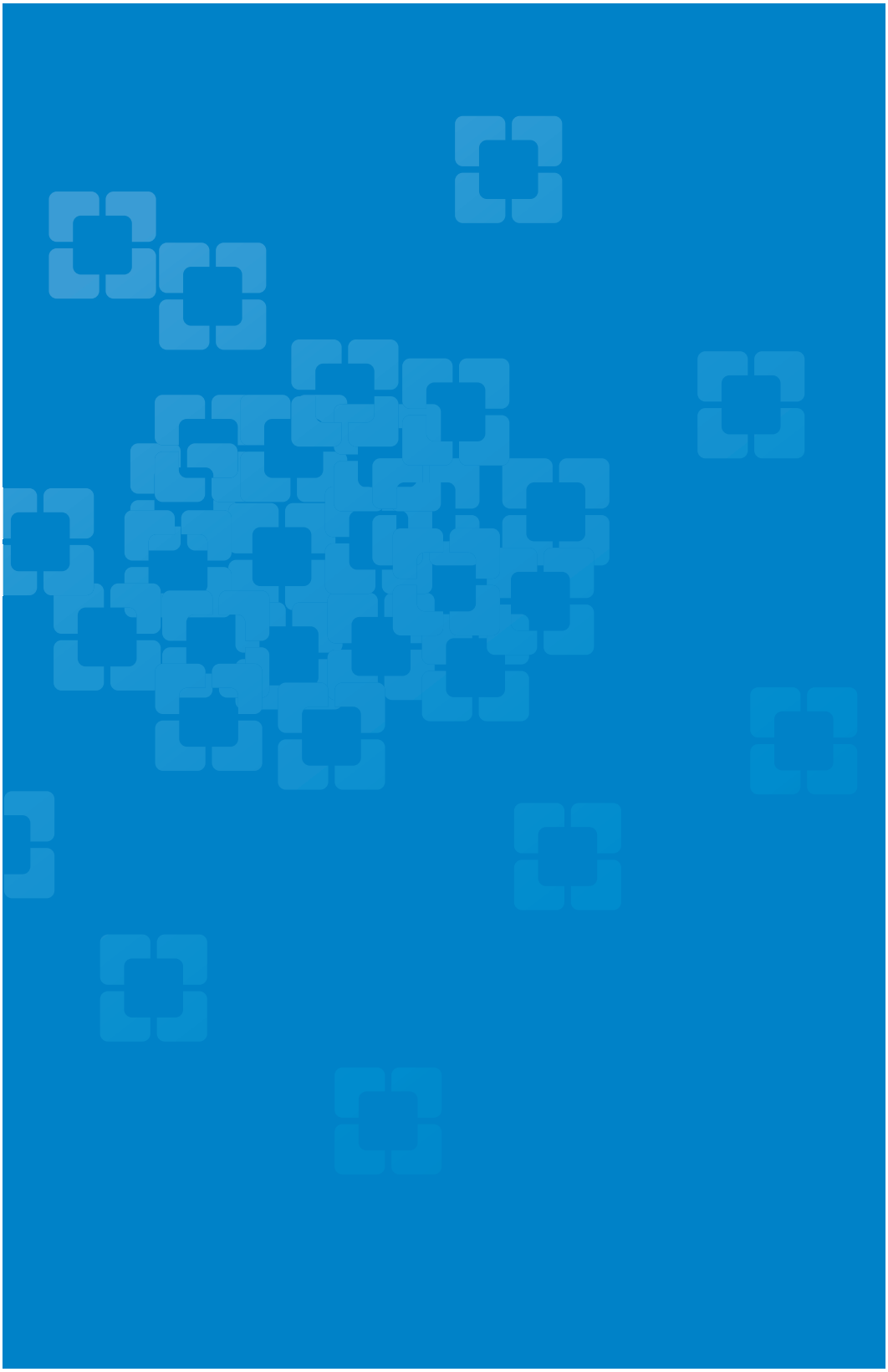


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