



The University of Hawai'i Department of Obstetrics,
Gynecology & Women's Health would like to extend deepest
thanks to all who made this 2019 Research Day possible.

Research Day Committee:

Karen Akiyama
Jennifer Elia, DrPH, MPH
Rachel Fujikawa
Mark Hiraoka, MD, MS
Darlene Hubbard
Ginny Kamikawa
Bliss Kaneshiro, MD, MPH
Krysten Kawamata
Lisa Kellett
Reni Soon, MD, MPH
Dena Towner, MD
Steven Ward, PhD

And all the mentors, assistants, and everyone else, who made
these projects possible

Special thanks to:
Thomas Kosasa, MD,
for sponsoring the event at the Wai'alae Country Club



May 23, 2019

Welina mai!

We welcome you to the 24th Annual Department of Obstetrics, Gynecology and Women's Health, John A. Burns School of Medicine, University of Hawai'i Research Day symposium. This event, created and organized through the combined efforts of our faculty, fellows and residents, strives to improve women's health and inspire discovery. We hope that through this forum in which our residents, fellows, and faculty present to you their current research, our community generates discussion around advancing women's health in Hawai'i and beyond.

This year we would like to dedicate our Department Research Day to a beloved faculty member who will be leaving our department and leaving Hawai'i – Dr. Tricia Wright. Dr. Wright is an Associate Professor in our department and Clinical Associate Professor of Psychiatry. Board certified in obstetrics-gynecology and in addiction medicine, Dr. Wright founded the PATH clinic, which is dedicated to providing perinatal and medical care to women with a history of substance use disorders. She has become a national expert in addiction medicine in pregnancy and was recently named a Distinguished Fellow of the American Society of Addiction Medicine. She has published multiple papers on pregnancy and addiction as well as the textbook *Opioid-Use Disorders in Pregnancy*. We extend our fondest mahalo to Dr. Wright for all she has done for our department and for the women of Hawai'i, and we wish her the best in her future endeavors.

A special thanks goes to the entire Research Day Symposium Planning Committee and to our distinguished visiting professor Matthew Barber, M.D. We hope that you will find this research symposium to be informative and inspiring. Please share your thoughts about our department's research day with us and any suggestions for next year's program.



	
Reni Soon, MD, MPH Associate Professor Director of Resident Research Department of Obstetrics, Gynecology & Women's Health, University of Hawai'i John A. Burns School of Medicine	Ivica Zalud, MD, PhD Professor and Chair Kosasa Endowed Chair Department of Obstetrics, Gynecology & Women's Health, University of Hawai'i John A. Burns School of Medicine

We dedicate this year's Departmental Research Day to Tricia Wright, MD in recognition of her contributions to research within our department:



Tricia Wright, MD

GUEST SPEAKER & JUDGE

May 23, 2019

Matthew D. Barber, MD, MHS

Chair, Department of Obstetrics and Gynecology
Duke University School of Medicine



Dr. Barber is a nationally recognized educator, researcher and surgeon specializing in urogynecology and pelvic reconstructive surgery. His current research focuses on the surgical treatment of gynecologic conditions, predominantly urinary incontinence and pelvic organ prolapse, and developing and accessing research outcomes in pelvic floor disorders. From 2006 to 2016, Dr. Barber served as the principal investigator for the Cleveland Clinic Clinical Site of the National Institute for Child Health and Human Development's Pelvic Floor Disorders Network. He has published over 190 peer-reviewed articles and 28 book chapters on gynecology and urogynecology topics.

Dr. Barber was president of the American Urogynecologic Society (AUGS) from 2011 to 2012 and served on the AUGS Board of Directors from 2008 to 2013. He is a member of the American Gynecologic and Obstetrical Society and the Society of Gynecologic Surgeons.

Dr. Barber earned his medical degree from Jefferson Medical College of Thomas Jefferson University and a master's degree in Health Science in Clinical Research from Duke University School of Medicine.

He completed residency training in Obstetrics and Gynecology and a fellowship in Urogynecology and Pelvic Reconstructive Surgery at Duke University. Dr. Barber joined the Cleveland Clinic in 2001 and has held numerous leadership positions during his tenure there.

Research

Clinical trials of gynecologic disease, particularly surgical trials of treatments for pelvic floor disorders. Patient-reported outcome measures. Clinical Prediction Models.

▣ Nager, CW, Grimes, CL, Nolen, TL, Wai, CY, Brubaker, L, Jeppson, PC, Wilson, TS, Visco, AG, Barber, MD, Sutkin, G, Norton, P, Rardin, CR, Arya, L, Wallace, D, Meikle, SF, and Pelvic Floor Disorders Network, "Concomitant Anterior Repair, Preoperative Prolapse Severity, and Anatomic Prolapse Outcomes After Vaginal Apical Procedures." *Female Pelvic Medicine & Reconstructive Surgery* 25, no. 1 (January 2019): 22-28.

▣ Maher, CF, Baessler, KK, Barber, MD, Cheong, C, Consten, ECJ, Cooper, KG, Deffieux, X, Dietz, V, Gutman, RE, van Iersel, JJ, Nager, CW, Sung, VW, and de Tayrac, R. "Surgical management of pelvic organ prolapse." *Climacteric : the Journal of the International Menopause Society* (December 21, 2018): 1-7.

▣ Harvie, HS, Honeycutt, AA, Neuwahl, SJ, Barber, MD, Richter, HE, Visco, AG, Sung, VW, Shepherd, JP, Rogers, RG, Jakus-Waldman, S, Mazloomdoost, D, and NICHD Pelvic Floor Disorders Network, "Responsiveness and Minimally Important Difference of SF-6D and EQ-5D Utility Scores for the Treatment of Pelvic Organ Prolapse." *American Journal of Obstetrics and Gynecology* (November 21, 2018).

▣ Jelovsek, JE, Barber, MD, Brubaker, L, Norton, P, Gantz, M, Richter, HE, Weidner, A, Menefee, S, Schaffer, J, Pugh, N, Meikle, S, and NICHD Pelvic Floor Disorders Network, "Effect of Uterosacral Ligament Suspension vs Sacrospinous Ligament Fixation With or Without Perioperative Behavioral Therapy for Pelvic Organ Vaginal Prolapse on Surgical Outcomes and Prolapse Symptoms at 5 Years in the OPTIMAL Randomized Clinical Trial." *Jama* 319, no. 15 (April 2018): 1554-1565.

2019 Judging Panel:



Matthew D. Barber, MD, MHS
Chair, Department of Obstetrics
& Gynecology
Duke University



Kapuaola Gellert, PhD, MPH
Epidemiologist
Adjunct Professor
University of North Carolina

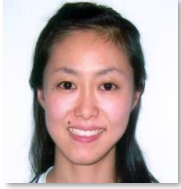


Jane Chung-Do, DrPH
Associate Professor, Specialization Head:
Social & Behavioral Health Sciences
Office of Public Health Studies,
University of Hawai'i

Thursday, May 23, 2019

Wai'alaie Country Club

- 8:00am **Steven Ward, PhD**, Professor and Chief, Research Division
Lakshmi Devi and Devraj Sharma Endowed Chair – Greetings
- 8:10 am **Reni Soon, MD** – Resident Research Director - Welcome
- 8:20 am Maternal-Fetal Medicine Fellow Abstract Presentation:
Megumi Akiyama, MD
“Circumvallate Placenta and Its Association to Intrauterine Growth Restriction”
- 8:50 am Third Year Res Presentations - Five 10-min talks, 5-min Q/A to follow
[Introduced by research mentors noted below]
- 8:50 am **Jennifer Chin, MD [Reni Soon, MD]:**
“Buffered Lidocaine for Paracervical Blocks in First Trimester
Outpatient Surgical Abortions”
- 9:10 am **Caroline Lau, MD [Holly Olson, MD]:**
“Duration of Foley Balloon Induction in Nulliparous Women with
Unfavorable Cervix— Is There an Association with Time to Delivery?”
- 9:30 am **Nikki Kumura, MD [Jennifer Elia, DrPH]:**
“Pharmacy Access to Ulipristal Acetate in Small Cities Throughout the
United States”
- 9:50 am **Jennifer Wong, MD [Michael Carney, MD]:**
“An Investigation on the Completeness of Salpingectomy Intended
for Ovarian Cancer Risk Reduction”
- 10:10 am **Danielle Ogez, MD [Lisa Bartholomew, MD]:**
“Outcomes for Pregnant Women in Hawai'i Admitted to a Tertiary
Care Hospital in Threatened Preterm Labor”
- 10:30 am **Vincent La, MD [Shandhini Raidoo, MD]:**
“Knowledge and Provision of Transgender Healthcare among
Obstetricians/Gynecologists in Hawai'i”
- 11:00 am Selected Abstract:
Corrie Miller, DO
“Characterizing Congenital Heart Anomalies in Pregnancies with Single Umbilical
Artery”
- 11:25 am Selected Abstract:
Men-Jean Lee, MD
“Longitudinal Study of Loss of Imprinting in First Trimester CVS Samples
Compared to Term”
- 11:40 am Lunch
- 12:15 pm Awards
- 12:30 pm Closing



Megumi Akiyama, MD

Fellow, Maternal-Fetal Medicine, Department of Obstetrics and Gynecology, John A. Burns School of Medicine (JABSOM), University of Hawai'i, Honolulu, HI

Ob-Gyn Residency: University of Nevada, Reno, NV

Medical School: University at Buffalo State University of New York School of Medicine, Buffalo, NY

MEd: State University of New York, Buffalo, NY

B.A. in French and French Literature/Sociolinguistics: State University of New York at Buffalo, Buffalo, NY

Honors/Awards:

- 2015: Annual Resident Research Day, First Place, “*Landmarks in Fetal biometry: CSP vs 3-line view*”
- 2015: University of Nevada, Highest Scorer Award in CREOG Examination, first place
- 2014: University of Nevada, Highest Scorer for the CREOG Examination, first place
- 2013: Phillip H. Goodman Resident Competition in Critical Appraisal, first place, University of Nevada

Research/Publications:

Dandolu V, **Akiyama M**, Allenback G, Pathak P. (2017). Mesh complications and failure rates after transvaginal mesh repair compared with abdominal or laparoscopic sacrocolpopexy and to native tissue repair in treating apical prolapse. *Int Urogynecol J*, 28(2): 215-222. PMID: 27562466

Presentations:

Akiyama M, Jackson D, Lua L. (2018). Landmarks in Fetal Biometry: Is Visualization of the Cavum Septi Pellucidi (CSP) Essential for Accurate Measurement of the Biparietal Diameter (BPD) and Head Circumference (HC)? Poster presentation at the American Institute of Ultrasound in Medicine, New York, NY.

Towner D, **Akiyama M**, Chern I, Broady A. (2018). Circumvallate Placenta and the Association with Fetal Growth Restriction. Oral presentation at the American Institute of Ultrasound in Medicine, New York, NY.

Grant:

Lee MJ, Yamasato K, **Akiyama M**, Chern I, “Creating a perivable medical order for life-sustaining treatment (MOLST) forms and counseling toolkit”, Co-Investigator, \$17,000. Grant, Hawai'i Community Foundation.

Circumvallate Placenta and Its Association to Intrauterine Growth Restriction

Megumi Akiyama, M.D.; Dena Towner, M.D.

Objective: Circumvallate placenta is associated with multiple perinatal complications such as small for gestational age (SGA), premature rupture of membrane (PPROM), placental abruption, preterm delivery, and oligohydramnios. On prenatal ultrasound, an uplifted edge of the placenta and membranes has been proposed to be a marker for a circumvallate placenta. The sensitivity and specificity of ultrasound screening for this pathology based on the visualization of uplifting of the placental edge have not been validated. The goal of this study is to evaluate if incidental finding of uplifted edge of placenta at the time of anatomy ultrasound is associated with SGA and other aforementioned adverse perinatal outcomes.

Design: Retrospective cohort study

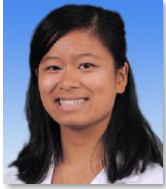
Method: A retrospective chart review was performed on all patients who were diagnosed with circumvallate placenta at the Fetal Diagnostic Center at Kapiolani Medical Center for Women and Children between May 2009 and May 2015. Ultrasound images were taken by RDMS certified ultrasonographers and interpreted by maternal fetal medicine specialists. A random cohort of fetuses with normal placentas and matched gestational age and biparietal diameter was chosen as a control in a 1:1 ratio. BPD was used in control selection to minimize the effect of genetically-determined growth potential variation. Growth percentile was determined based on the US birth weight nomogram. Data was analyzed by Chi-square, Fisher's exact, and logistic regression. 164 patients in each arm would provide this study with a 95% power ($\alpha=0.05$) to detect a 2.5-fold increase in SGA with circumvallate placenta.

Results: 166 patients met the inclusion criteria. The presence of circumvallate placenta had no statistically significant effect on the rate of SGA, PPRM, cesarean delivery, placental abruption, NICU admission, preterm delivery, or overall growth percentile. Circumvallate placenta is associated with decreased chance of developing GDM ($p=0.054$, $CI=0.18-1.01$). Multiparity is associated with circumvallate placenta ($p=0.029$).

Conclusions: The presence of uplifted placental edge suggestive of circumvallate placenta identified on second trimester ultrasound is not associated with fetal growth abnormality and does not warrant serial growth ultrasound.

Financial Support: None

Acknowledgements: Autumn Broady, M.D. and Ingrid Chern, M.D.



Jennifer Chin, MD

Medical School: Tulane University School of Medicine, New Orleans, LA

Honors/Awards:

- Gold Humanism Honor Society Award
- Best Volunteer Award for the New Orleans Abortion Fund

B.A. in Public Health: University of California, Berkeley, Berkeley, CA

Honors/Awards:

- Global Poverty and Practice Minor
- Language Fluency (other than English): Limited Chinese

Hobbies: Baking, surfing, swimming, skate-skiing, cycling, running, hiking, traveling

Place of Birth: Seattle, WA

Research Experience:

- Resident researcher, University of Hawai'i, Department of Obstetrics and Gynecology, Drs. Shandhini Raidoo and Jennifer Salcedo, January 2018-present
 - Assess accessibility of levonorgestrel emergency contraception in pharmacies on Oahu
- Resident researcher, University of Hawai'i, Department of Obstetrics and Gynecology, Dr. Reni Soon, May 2017-January 2019
 - Compare injection pain for paracervical blocks during first trimester surgical terminations using plain lidocaine versus buffered lidocaine in a double-blinded, randomized controlled trial
- Resident researcher, University of Hawai'i, Department of Obstetrics and Gynecology, Dr. Tricia Wright, October 2018-present
 - Investigate the demographics of women who receive a urine drug screen on labor and delivery, determine the number of screens that return positive on confirmatory testing, correlate positive maternal tests with positive neonatal tests
- Student researcher, Tulane University, Division of Obstetrics and Gynecology, Dr. Cecilia Gambala, January 2015-May 2016
 - Compare early and interval placement of long acting reversible contraceptive devices post-partum
 - Assess patient satisfaction and compliance via follow up surveys
- Lead student researcher, Tulane University, Division of Obstetrics and Gynecology, Dr. Chi Dola, January 2015-May 2016
 - Determine optimal timing of repeat cesarean section delivery for women with previous cesarean sections by collecting data on neonatal and maternal outcomes
 - Manage other students involved in project

Publications:

Chin J, Kaneshiro B. Hormonal Contraception. *Oxford Textbook of Endocrinology and Diabetes*. (Accepted May 2018)

Chin J, Sunkara Deere L, Coontz K, Fotino A. (2018). Nonconvulsive Status Epilepticus with Non-Traditional Risk Factors: A Case Report. *J La State Med Soc*, 170(6): 185-187.

Wong JW, **Chin JM**, Schlueter RJ. (2018). Shingles in Pregnancy: An Elusive Case of Left Upper Quadrant Abdominal Pain. *Hawaii J Med Public Health*, 77(8): 179-182. PMID: 30083429

Chu HY, **Chin J**, Pollard J, Zerr DM, Englund JA. (2016). Clinical Outcomes in Outpatient Respiratory Syncytial Virus Infection in Immunocompromised Children. *Influenza and Other Respiratory Viruses*, 10(3): 205-210. PMID: 26859306

Chin J, Yeung M. (2015). Abortion Bill A Veiled Attack on Women. [Editorial] *The Advocate*.

Presentations:

Chin J, Zhen S, Bartholomew ML. (2018). Stump the Professor. Oral presentation at the University of Hawaii Department of Obstetrics and Gynecology and Ian Donald Inter-University School of Medical Ultrasound Hawaii Branch Conference, Honolulu, HI.

(2015). Case Report of Nonconvulsive Status Epilepticus. Oral presentation at the Society of General Internal Medicine's Southern Regional Conference, New Orleans, LA.

(2014). Respiratory Syncytial Virus in Immunocompromised Pediatric Patients. Poster presentation at the Pediatric Academic Society's Annual Conference, Vancouver B.C., Canada.

Buffered Lidocaine for Paracervical Blocks in First Trimester Outpatient Surgical Abortions

Jennifer Chin, MD; Bliss Kaneshiro, MD, MPH; Jennifer Elia, DrPH; Shandhini Raidoo, MD, MPH; Michael Savala, MD; Reni Soon, MD, MPH

Objective: To determine if buffered lidocaine decreases injection pain as compared to plain lidocaine for paracervical blocks during first trimester outpatient surgical abortions

Design: A double-blind randomized controlled trial

Methods: In this double-blind, randomized controlled trial, patients who desired surgical termination of a first trimester pregnancy or management of an early pregnancy failure were randomized to receive a paracervical block with either 20 ml of 1% lidocaine or 18 ml 1% lidocaine plus 2 ml of 8.4% sodium bicarbonate. The primary outcome was pain from injection of the paracervical block measured on a 100-mm visual analog scale. Secondary outcomes included pain at cervical dilation, uterine aspiration, and overall satisfaction with pain control. Pain and satisfaction scores were compared using the Mann-Whitney U test. To detect a 15-mm difference in pain from injection of the paracervical block, at an α of 0.05 and 80% power with an estimated 10% dropout rate, we aimed to enroll 49 patients in each arm.

Results: From May 2017 to October 2018, 48 women received plain lidocaine for their paracervical block and 50 women received buffered lidocaine. Groups were similar in demographics. The median pain score after paracervical block injection for the control group was 44.50 [interquartile range (IQR) 18.25-65.00] as compared to 30.00 [IQR 15.25-64.50] in the intervention group ($U=1123.0$; $p=0.323$). The median pain score after cervical dilation for the control group was 62.50 [IQR 41.25-78.75] as compared to 55.0 [IQR 28.00-81.00] in the intervention group ($U=1079.5$; $p=0.392$). The median pain score after suction curettage for the control group was 67.50 [IQR 49.00-88.00] as compared to 69.00 [IQR 37.00-87.00] in the intervention group ($U=1191.5$; $p=0.952$). In the control group, the median satisfaction with pain control was 77.00 [IQR 45.75-96.75] as compared to 70.0 [IQR 41.75-93.25] in the intervention group ($U=1071.0$; $p=0.358$).

Conclusions: Using buffered lidocaine for paracervical blocks in first trimester outpatient surgical abortions does not decrease injection pain as compared to plain lidocaine. Additionally, it does not improve satisfaction with overall pain control during the procedure.

Support: University of Hawai'i, Department of Obstetrics, Gynecology, and Women's Health

Acknowledgements: Tiana Fontanilla, Jasmine Tyson, Janela Agonoy, Obstetrics and Gynecology residents and family planning fellows who helped with recruitment, staff at Queen's POB 3 office, study participants



Caroline Lau, MD

Medical School: University of Hawai'i, John A. Burns School of Medicine, Honolulu, HI

B.S. in Biological Sciences with Honors: University of Hawai'i at Manoa, Honolulu, HI

Honors/Awards:

- 2012: Graduated Summa Cum Laude
- 2012: John A. Burns School of Medicine Biomedical Sciences Symposium Deans Award for Best Undergraduate Poster
- 2008-2012: University of Hawai'i at Manoa Deans List, University of Hawai'i at Manoa Centennial Scholar

Language Fluency (other than English): Chinese

Place of Birth: Honolulu, HI

Medical Interests: General Ob/Gyn

Future Plans upon Graduation: General Ob/Gyn

Research Experience:

- Principal Investigator with Mark Hiraoka, MD. University of Hawai'i John A. Burns School of Medicine, Department of Obstetrics, Gynecology and Women's Health, "An effective, low-cost suture training kit for medical students." 2015-2018.

Publications:

Warkus ELL, Yuen AYQ, **Lau CGY**, Marikawa Y. (2016). Use of *in vitro* morphogenesis of mouse embryoid bodies to assess developmental toxicity of therapeutic drugs contraindicated in pregnancy. *Toxicol Sci*, 149(1): 15-30. PMID: 26385866

Lau CGY, Marikawa Y. (2014). Morphology-based mammalian stem cell tests reveal potential developmental toxicity of donepezil. *Mol Reprod Dev*, 81(11): 994-1008. PMID: 25269881

Presentations:

Lau CGY, Marikawa Y. (2015). Morphology-based mammalian stem cell tests reveal potential developmental toxicity of donepezil. Poster presentation at the American Medical Association 13th Annual Research Symposium, Atlanta, GA.

Yuen A, **Lau CGY**, Marikawa Y. (2014). Antidepressant mianserin alters morphology and gene expression patterns in mouse stem cell embryoid bodies. John A. Burns School of Medicine Biomedical Sciences Symposium, Honolulu, HI.

Fong KSK, Kida L, **Lau CGY**, Yang S, Cooper TB, Drumhiller WC, Lozanoff S. (2013) Midline craniofacial malformations with an anterior cephalocele result from insufficient closure of the neural tube in the *tuft* mouse. International Conference on Neural Tube Defects, Austin, TX.

Lau CGY, Yang S, Cooper TB, Drumhiller WC, Lozanoff S, Fong KSK. (2012). Craniofacial defects resembling frontonasal dysplasia in the *tuft* mouse embryo. John A. Burns School of Medicine Biomedical Sciences Symposium, Honolulu, HI.

Lau CGY, Ni'o K. (2011). A best practices database consisting of Native Hawaiian scholarly publications for the purpose of conducting community-based participatory research. Oral presentation at Office of Hawaiian Affairs, Honolulu, HI.

Duration of Foley Balloon Induction in Nulliparous Women with Unfavorable Cervix— Is There an Association with Time to Delivery?

Caroline Lau, MD; Jennifer Elia, DrPH; Holly Olson, MD

Objective: To evaluate for associations between Foley Balloon (FB) induction duration and time to delivery.

Design: A retrospective cohort study.

Methods: We conducted a chart review of all singleton, term, nulliparous women with an unfavorable cervix (defined as modified Bishop Score ≤ 6) who were undergoing induction of labor with FB and vaginal misoprostol from January 2016 to January 2018 at Kapiolani Medical Center for Women and Children. Our primary exposure of interest was the duration (in hours) of FB induction. Our primary outcome was time to delivery following FB expulsion (in hours). Duration of FB induction was categorized into two groups: Group 1 (G1): 0-4 hours and Group 2 (G2) >4 hours. Descriptive statistics were used to analyze data. Continuous outcomes were compared using the two-sided Student t test or Mann-Whitney U test when not normally distributed. Categorical data was compared using the Chi-squared test. Statistical significance was determined at $P < 0.05$. To find a clinically significant difference of 4.8 hours between groups at $\alpha = 0.05$ and power of 80%, we aimed to review 116 charts.

Results: A total of 175 patients met inclusion criteria (91 patients in G1 and 84 patients in G2.) Baseline characteristics were similar between groups. The mean time to delivery after FB removal was not significantly different between groups (22.84 vs 23.39 hours; $P = .77$). Among the 68 patients in G1 and the 55 patients in G2 who achieved vaginal delivery, the mean time to delivery was also not significantly different (20.45 vs 21.37 hours; $P = 0.68$). The rate of maternal infection was significantly higher in G1 compared to G2 (35/91 [38.5%] vs 19/84 [22.6%]; $P = 0.02$). There were no significant differences in the rate of cesarean delivery, use of analgesia during FB induction, labor augmentation, estimated blood loss, postpartum hemorrhage, use of uterotonics, length of hospital stay, neonatal birthweight, and Apgar scores.

Conclusions: Among nulliparous women with singleton gestations and unfavorable cervix, there is no difference in time to delivery following Foley balloon expulsion.

Support: University of Hawaii Department of Obstetrics, Gynecology, & Women's Health

Acknowledgements: Reni Soon, MD

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Nikki Kumura, MD

Ob-Gyn Residency Honors/Awards:

- 2018: North American Society for Pediatric and Adolescent Gynecology Award, Gold Humanism Honor Society-Resident Member
- 2017: Outstanding Resident for Excellence in Medical Student Teaching Award

Medical School: University of Hawai'i John A. Burns School of Medicine, Honolulu, HI

B.S. in Physiological Science, Public Health: University of California, Los Angeles, Los Angeles, CA

Honors/Awards:

- 2012: Graduated Magna Cum Laude at UCLA
- 2009-2012: Dean's Honor List

Hobbies & Interests: Running, gymnastics, traveling, discovering new cuisines, hiking, spending quality time with friends and family

Place of Birth: Honolulu, HI

Medical Interests: Pediatric adolescent gynecology, family planning, General Ob/Gyn

Future Plans Upon Graduation: Pediatric Adolescent Gynecology Fellowship

Research Experience:

- Research Scholar with Sheree Kuo, MD at Hawai'i Pacific Health, Honolulu, HI
 - Selected to become one of twelve undergraduate research scholars. Collected data from the EMR and analyzed findings on history, treatments, and outcomes in very low birth weight infants. Demonstrated the association between early noninvasive positive pressure support with a significant decrease in the incidence of bronchopulmonary dysplasia. July 2011-August 2011.
- Research Committee Member with Hsin-Chieh Chang, PhD, Asian Pacific Health Corps at UCLA, Los Angeles, CA
 - Collected survey data from health fairs targeting underrepresented Asian Pacific Islander communities in Los Angeles. Linked socioeconomic status and language barriers with high disease morbidity. Presented findings to student organization volunteers. September 2010-June 2012.
- Research Associate with Yihe Daida, PhD, Kaiser Permanente Center for Health Research Honolulu, HI
 - Organized databases and paperwork for research coordinators. Explained protocols and recruited 100 participants for the "Na Mikimiki Project", an intervention study to increase physical activity in new mothers. July 2009-August 2009.

Presentations:

Kumura N, Tschann M, Elia J. (2019). Pharmacy Access to Ulipristal Acetate in Small Cities throughout the United States. Oral presentation at the North American Society for Pediatric and Adolescent Gynecology Annual Meeting, New Orleans, LA.

Hirai CM, **Kumura N**, Salcedo J, Hiraoka M. (2016). Perceptions Regarding Pediatric and Adolescent Gynecology Training in Obstetrics and Gynecology Residency Programs. Poster presentation at the CREOG & APGO Meeting, New Orleans, LA.

Kumura N, Kira ME, Kuo S. (2012). Noninvasive Positive Pressure Support to Decrease BPD in VLBW Infants. Poster presentation at the Pediatric Academic Societies Annual Meeting, Boston, MA.

Kumura N, Kira ME, Kuo S, Iwamoto LM. (2011). Noninvasive Positive Pressure Support to Decrease BPD in VLBW Infants. Oral presentation at the Hawaii Pacific Health Scientific Presentation, Honolulu, HI.

Kumura N, Kira ME, Kuo S, Iwamoto LM. (2011). Noninvasive Positive Pressure Support to Decrease BPD in VLBW Infants. Oral presentation at the Hawaii Pacific Health Scientific Presentation, Honolulu, HI.

Pharmacy Access to Ulipristal Acetate in Small Cities Throughout the United States

Nikki Kumura, MD, Jennifer Elia, DrPH, Mary Tschann, PhD, MPH

Objective: When used as an emergency contraceptive pill (ECP), ulipristal acetate (UPA) is more effective than levonorgestrel (LNG) ECP, particularly in women weighing >176 lbs. Recent studies have found that less than 3% of pharmacies in Hawai'i and 10% of pharmacies in large cities throughout the United States (US) stocked UPA. We wanted to examine UPA availability in small cities (population 25,000-50,000) in the US, where timely access to emergency contraception would be particularly beneficial, given the limited family planning services and prenatal care in these areas. The primary outcome was to assess the availability of UPA in a sample of small cities in the US. Secondary outcomes included the ability to order UPA, time to availability, availability of other ECP options, accuracy of instructions provided on ECP, and differences between regions.

Study Design: A cross-sectional survey

Methods: We conducted a telephone-based secret shopper study of retail pharmacies in randomly selected small cities in the US from the US Census Bureau. Using a semi-structured questionnaire, callers represented themselves as uninsured 18-year-old women attempting to fill a prescription for UPA between November 2017 and April 2018. Our study was powered to estimate the percentage of pharmacies with UPA immediately available within +/-2% of the true prevalence with 95% confidence. We estimated a baseline prevalence of immediate availability of 5% and an exclusion rate of 30%. Based on these estimates, we planned to sample 657 pharmacies for adequate power. We estimated 8 pharmacies/city and therefore randomly selected 83 small cities; we then identified all pharmacies in each city through an online phone book, for an actual total of 916 pharmacies.

Results: Of the 916 pharmacies called, 20% (183) were excluded and we analyzed 733 pharmacies. Overall, 8.5% of pharmacies could immediately fill UPA. Of those who were not able to immediately fill a UPA prescription, 84.4% had the ability to order UPA. Mean time to pick up was 35.9 hours. Median cost was \$49.99. Most pharmacies (81.9%) had other ECP options available. About one-third (29.3%) reported no difference or were unsure about a difference between UPA and LNG. There were some pharmacies who provided incorrect information about the difference between UPA and LNG. More than half (58.5%) provided the correct answer regarding the time frame required to take UPA of 120 hours. When comparing regions, 18% of pharmacies in the West had immediate availability of UPA, while 5.9% of pharmacies in the Midwest and the South had immediate availability. Times to availability were similar amongst regions. Availability of LNG ECPs was 75.9% in the South, compared to 84-88% in other regions.

Conclusion: Despite evidence for increased efficacy of UPA over LNG ECPs, the availability of UPA in a sample of US small cities is extremely limited. Given that ECPs should be taken as soon as possible after unprotected sex, long wait times present an access barrier.

Support: University of Hawai'i Department of Obstetrics, Gynecology, & Women's Health

Acknowledgements: Milly Chang, Ingrid Chern, MD, Sandra Cordero, Lauren Ing, Kelli Kaneta, Lea Lacar, Jovonne Lee, Daniella Orias, Teresa Porter, Andrew Pham, Nolwenn Pham, Lyka Raza, Leeyannah Santos, Amity Tran



Jennifer Wong, MD

Ob-Gyn Residency Honors/Awards:

- 2018: Second Year Resident Excellence in Teaching Award

Medical School: University of Hawai'i, John A. Burns School of Medicine, Honolulu, HI

Honors/Awards:

- 2016: Philip I. McNamee, MD Endowed Award, Obstetrics & Gynecology, Lakshmi Devi and Devraj Sharma Endowed Chair in Obstetrics and Gynecology Award, Colin C. McCorriston MD Scholarship, Obstetrics & Gynecology, UH Dean's Travel Fund, Medical Student Research
- 2015: Clerkship Honors: Ob-Gyn and Psychiatry, Women in Medicine Leadership Scholarship, UC Davis School of Medicine Diversity Scholarship, Visiting Elective, American Congress of Obstetricians and Gynecologists Medical Student Travel Grant, Medical School Student Travel Grant Fund, Masami Oishi Memorial Scholarship, Hawai'i Veterans Memorial Fund Scholarship
- 2014-2015: Zimmerman Foundation Health Scholarship
- 2014: Gold Humanism Honor Society Essay Contest - 1st place
- 2013-2015: ISS Achievement/Asian Pacific Focus Scholarship
- 2013: Veterans Affairs Rural Health Training Initiative Grant, Hawai'i/Pacific Area Health Education Center Grant
- 2012-2016: Manoa Opportunity Grant
- 2012-2015: E.E. Black Memorial Scholarship

B.A. in Biology: Scripps College, Claremont, CA

Honors/Awards: Scripps College Cum Laude, Biology Honors

Place of Birth: Wahiawa, HI

Hobbies & Interests: Spending time hiking and at the beach with DJ (my 5 year old rescue dog), playing and coaching basketball, surfing and snowboarding, fun animal facts

Medical Interests: Bakri balloons, Kegel exercises, and clinical research

Future Plans Upon Graduation: Urogynecology Fellowship

Publications:

Wong J, Kaneshiro B, Oyama I. (2019). Primary Care Physician Perceptions of Female Pelvic Floor Disorders. *Hawaii J Med Public Health*, 78(4): 132-136. PMID 30972236

Wong J, Siarezi S. (2019). The Dangers of Hymenotomy for Imperforate Hymen: A Case of Pelvic Inflammatory Disease with Pyosalpinx. *J Pediatr Adolesc Gynecol*. PMID 30974214

Wong J, Oyama I. (2019). Complications associated with Oocyte Retrieval: An Unusual Case of Hematuria and Recurrent Urinary Retention. *J Gyn Reprod Med*, 3(2): 1-3.

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Wong J, Pachecho M, Kaneakua-Pia I, Chang A. (2018). Ethnic Variations in Trial of Labor after Cesarean in an Understudied Population. *J Gyn Reprod Med*, 2(2): 1-4.

Wong J, Lau C, Suetsugu T, Saito-Tom L. Implementation of a Hospital Protocol to Prevent Retained Vaginal Packing in Obstetrical Patients. (2018). *J Gyn Reprod Med*, 2(1): 1-4.

Wong J, Chin J, Schlueter R. (2018). Shingles in Pregnancy: An Elusive Case of Left Upper Quadrant Abdominal pain in Pregnancy. *Hawaii J Med Public Health*, 77(8): 179-182. PMID 30083429

Wong J, Wang C, Sultan A, Killeen J, Carney M. (2018). A Case of HPV 31- and 68-Associated Metastatic Squamous Cell Carcinoma of the Cervix in a Healthy 28-Year-Old Woman. *J Gynecol Surg*, 34(3): 159-163.

Viekoetter K, **Wong J, Ahn HJ, Shimizu D, Kagami L, Terada K.** (2018). Using Gene Expression in Patients with Endometrial Intraepithelial Neoplasia to Assess the Risk of Cancer. *Gynecol Oncol Rep*, 24: 24-26. PMID 29845103

Wong J, Fox K, Casamina C, Lai T, Killeen J, Carney M. (2018). A Case of High Grade Endometrial Stromal Sarcoma with Concurrent Pregnancy. *J Gynecol Surg*, 34(20): 15-18.

Wong J, Tucker J. (2018). Multiple Identities: A Literature Review on the Unique Experience and Challenges of LGBT Female Physicians of Color. *Fam Med Med Sci Res*, 7(1): 224-230.

Wong J, Lai T, Nagamine K, Killeen J, Carney M. (2017). Is Tuberculosis Still a Threat in the Developed World? Two Case of Tuberculosis Masquerading as Gynecologic Cancers. *J Gynecol Reprod Health*, 1(2): 1-4.

Wong J, Lai T, Carney M. (2017). Sampson's Artery Revisited. *J Reprod Med Gynecol Obstet*, 2(1): 1-2.

Wong J, Williams S. (2017). The Wandering Woman: A Case Study on Catatonos vs Factitious Disorder. *Hawaii J Med Public Health*, 76(3): 82-84. PMID 28352494

Lai T, **Wong J, Carney M.** (2016). Robotic Assisted Resection of a Non-Communicating Uterine Horn Ectopic Pregnancy. *J Gynecol Surg*, 32(4): 242-244.

Riangwivat T, Kohorn L, Chow DC, Souza S, Ndhlovu L, **Wong J, Gangcuango L, Shikuma C.** (2016). CD4/CD8 Ratio Predicts Peripheral Fat in HIV-Infected Population. *J Acquir Immune Defic Syndr*, 72(1): e17-19. PMID 26885805

Wong J, Omori J. (2016). Medical School Hotline: Cultural Competency in Serving the Homeless in Hawaii at the John A. Burns School of Medicine. *Hawaii J Med Public Health*, 75(1): 18-20. PMID 26870603

Wong J. (2014). Medical School Hotline: Looking Forward and Enriching John A. Burns School of Medicine's Curriculum: Lesbian, Gay, Bisexual, and Transgender Healthcare in Medical Education. *Hawaii J Med Public Health*, 73(10): 329-331. PMID 25337451

Gilman S, **Wong J, Chen S.** (2013). Oxygen Consumption in Relation to Body Size, Wave Exposure, and Cirral Beat Behavior in the Barnacle *Balanus Glandula*. *J Crustac Biol*, 33(3): 317-22.

An Investigation on the Completeness of Salpingectomy Intended for Ovarian Cancer Risk Reduction

Jennifer W.H. Wong, MD; Jeffrey L. Killeen, MD; Michael E. Carney, MD

Objective: Prophylactic salpingectomy has been heavily promoted based on the theory that serous tubal intraepithelial carcinoma is a precursor lesion for “serous ovarian carcinoma”. However, the validity of prophylactic salpingectomy has yet to be proven through adequate research. The purpose of this study is to evaluate the completeness of salpingectomy intended for ovarian cancer risk reduction.

Design: Descriptive study

Methods: Women without a history of ovarian cancer who were undergoing salpingoophorectomy were enrolled in this study. Salpingectomy was performed prior to oophorectomy. A blinded pathologist then examined the ovaries for the presence of residual salpingeal tissue. Data collected included type of surgery (minimally invasive or laparotomy) and level of surgeon (attending or resident). Data were analyzed using Fisher’s exact test.

Results: A total of 107 ovaries were examined. Following salpingectomy, 5.6% (n=6/107) of ovaries had residual salpingeal tissue present and 94.4% (n=101/107) of ovaries were absent of salpingeal tissue. Of the ovaries with residual salpingeal tissue, there was no difference in level of surgeon (attending n=3/107, resident n=3/107, p=1.0) or type of surgery (minimally invasive n=5/107, laparotomy n=1/107, p=0.42).

Conclusions: This blinded study is the largest study ever conducted to examine ovaries for residual salpingeal tissue after salpingectomy. In addition, this is the only study to compare learner versus attending outcomes in this setting. This study found that over 94% of salpingectomies resulted in complete removal of salpingeal tissue. Of the ovaries with residual salpingeal tissue, there wasn’t a difference among surgeon level and surgery type, but the study was not powered to detect this. This study supports the continued clinical practice of prophylactic salpingectomy for ovarian cancer risk reduction.

Support: None

Acknowledgements: None



Danielle Ogez, MD, MPP

Ob-Gyn Residency Honors/Awards:

- 2018: Second Year Resident Excellence in Teaching Award

Medical School: University of California, Los Angeles David Geffen School of Medicine, Los Angeles, CA

Honors/Awards:

- 2014: Letter of Distinction, Family Medicine Clerkship, Letter of Distinction, Systems Based Healthcare
- 2013: Ruth White PED Scholarship Recipient

M.P.P. in Public Policy: UCLA Luskin School of Public Policy, Los Angeles, CA

B.A. in International Development Studies: University of California Los Angeles, Los Angeles, CA

Honors/Awards:

- 2008: Scholar Activist Award, UCLA International Institute

Hobbies & Interests: gardening, hiking, traveling, social justice, the ocean, and Beyoncé

Place of Birth: San Mateo, CA

Medical Interests: obstetric critical care, health disparities

Future Plans Upon Graduation: OBGYN hospitalist

Research Experience:

- California Policy Options 2017. Chapter 7: The Affordable Care Act 2.0: Reimagining Health Care Reform in California. UCLA Luskin School of Public Affairs

Presentations:

Ogez D. (2012). The prevalence and management of diarrheal diseases in children under age five in a rural village of Ghana. Poster presentation at Western Student Medical Research Forum, Carmel, CA.

Outcomes for Pregnant Women in Hawai'i Admitted to a Tertiary Care Hospital in Threatened Preterm Labor

Danielle Ogez, MD, MPP; Marguerite Lisa Bartholomew, MD

Objective: The primary objective was to compare the rate of preterm birth (PTB) during initial hospital admission for threatened preterm labor (TPTL) between pregnant women who are Oahu residents (OR) and pregnant women who are transferred from the neighboring Hawaiian Island hospitals (NI) to a tertiary care hospital. Secondary objectives were to identify characteristics within each group that potentially contribute to the preterm birth rate and to characterize the current evaluation and diagnostic preterm labor practices at a tertiary care hospital in Hawai'i.

Design: A retrospective cohort study

Methods: A chart review was performed on all TPTL admissions at Kapi'olani Medical Center for Women and Children (KMCWC) in Honolulu, HI from January 1, 2016 to December 31, 2018. Preterm birth was defined as birth prior to 36 weeks gestational age (GA). Specific ICD10 codes (O60.00 - O60.23X9) were used to identify the charts. Exclusion criteria included preterm pre-labor rupture of membranes (PPROM), multi-fetal gestations, and medically-indicated preterm deliveries. Statistical analysis was performed using chi-squared and t-tests.

Results: A total of 970 charts were reviewed, with 414 admissions for TPTL meeting inclusion and exclusion criteria (OR n = 352; NI n = 62). The percentage of women that delivered during initial TPTL admission was 44% for OR and 23% for NI (p = 0.002), with odds ratio 2.7 (95% CI 1.4, 5.1). After adjusting for women admitted with cervical dilation greater than 6 cm (NI women with advanced cervical dilation greater than 6 cm would not be transferred) the PTB rate among the OR group was more similar to the NI group (35% vs. 23%, p=0.056). The percentage of women who ultimately delivered before 36 weeks was 87% for OR and 92% for NI (p = 0.27). Age, BMI, days between admission and delivery, rate of cervical length measurement prior to admission, cervical effacement on admission, and prior history of preterm birth did not differ between NI and OR women. Variables that were statistically significantly different between the two groups were gestational age at admission (OR=32.19 vs NI=29.38 wks; p< 0.0001); gestational age at delivery (OR=33.3 vs NI=31.3 wks; P=0.0001); measurement of cervical length after admission (OR=8% vs NI=32%; P < 0.0001); cervical dilation on admission (OR=3.77 vs NI=2.52cm; p<0.0001); cervical station on admission (OR=-1.98 vs NI=-2.23; P 0.005); and minutes between contractions (OR=3.81 vs NI=5.66; p=0.002). For the overall group, the impact of using a standardized Preterm Labor Assessment Algorithm (PLAA) on the mean latency period (MLP), defined as the number of days between initial admission for TPTL and delivery, was examined. The MLP was for those admitted with and without usage of this algorithm was 14.2 days and 26 days, respectively, a difference of 11.5 days (p = 0.008; 95% CI 3.063- 19.9584).

Conclusions: The overall rate of preterm birth during initial admission for TPTL was significantly higher for OR than NI. After exclusion of women with cervical dilation greater than 6 cm, there was no difference. Regardless of island of origin, approximately 90% of all women delivered before 36 weeks. For admissions managed with a standardized preterm labor assessment algorithm, the MLP was reduced. This suggests that use of a standardized preterm labor assessment algorithm improves detection of women who will deliver sooner.

Support: University of Hawai'i Department of Obstetrics, Gynecology, & Women's Health

Acknowledgements: Dr. Hyeong Ahn



Vincent La, MD

Medical School: University of California, Los Angeles David Geffen School of Medicine, Los Angeles, CA

B.S. in Biochemistry, Medical Science Emphasis: University of California, Riverside, Riverside, CA

Language Fluency: American Sign Language, Chinese, Spanish, Vietnamese

Hobbies & Interests: Music; Being self-taught piano at the age of 8 and a capella in college. Running, eating new and diverse foods, hiking to waterfalls, and learning new languages.

Place of Birth: Fountain Valley, CA

Future Plans Upon Graduation: Generalist

Research Experience:

- Primary Researcher, with Sanaz Memarzadeh, MD, PhD. University of California, Los Angeles, Dept. of Ob/Gyn, Los Angeles, CA
 - Investigated whether immunofluorescence can be utilized for tumor samples in predicting treatment response. Analyzed data and accurately reflected statistics in writing manuscript on cancer research. Incorporated individual projects into collaborative manuscript describing overall survival and screening tools. Efficiently processed multiple slides within limited amount of time to yield accurate results. April -September 2015.
- Laboratory Assistant, with Martin Turcotte, PhD University of California, Riverside, Dept. of Biology, Riverside, CA
 - Ignited productivity and accuracy of PCR samples and DNA extractions in the lab. Investigated the effects of micro-evolution and how it contributes to competition within a species. Researched the applicability of research to the field of pesticides and future agricultural uses. Independently mass-produced various lab solutions by recipe. micro-biomes. and feeding cultures. February 2008-January 2011.

Knowledge and Provision of Transgender Healthcare among Obstetricians/ Gynecologists in Hawai'i

Vincent La, MD; Shandhini Raidoo, MD; Ghazaleh Moayedi, DO

Objective: To describe the knowledge and clinical practice of obstetricians/gynecologists (OBGYNs) in Hawai'i regarding transgender healthcare.

Design: Cross-sectional survey

Methods: We developed a survey to evaluate the practice patterns, comfortability, and knowledge base for transgender healthcare. This anonymous survey was distributed to American College of OBGYNs (ACOG) fellows and junior fellows in Hawai'i. Survey data was collected from March 2018 to August 2018. Descriptive statistical analysis was performed with Pearson's chi-squared test.

Results: The online survey was distributed to 211 practicing OBGYNs in the ACOG Hawai'i section. We received 58 responses (response rate = 27.5%). The majority of participants practiced on Oahu (91.4%), were 10-30 years out from residency (58.6%), and either in academic (50%) or private practice (34.5%). There were trends toward respondents 5 to 30 years out from residency and exposure to transgender healthcare education during residency ($p=0.61$). Additionally, this experience stratification also had faculty that cared for transgender patients during their residency, ($p<0.005$). Respondents were more comfortable caring for female-to-male (FTM) patients compared to male-to-female (MTF) patients regardless of time since residency training or practice type. All participants reported that transgender patients made up <5% of their patient population. The majority of office practices of participants (79%) have unisex bathrooms, but most participants (63.8%) did not have or did not know if gender is included on their office intake forms.

The majority of respondents correctly believed that guidelines for transgender healthcare maintenance are based on extrapolation from cisgender population (53.4%); only 8.6% thought there were evidence-based guidelines for transgender people. Participants believed estrogens prescribed to MTF patients increased the risk of breast cancer (43.9%), myocardial infarction (29.8%), and liver dysfunction (26.3%). Regarding prostatic cancer screening for MTF patients, 46.6% of participants believed annual Prostate specific antigen and digital rectal exams (DRE) were indicated, although only annual DRE is indicated. Most of those surveyed (72.4%) correctly reported that after bilateral mastectomy FTM patients were still at risk for breast cancer. Fifty-five percent of participants knew that MTF patients on hormone therapy should have the same breast cancer screening as ciswomen, while 39.7% did not know about recommendations for breast cancer screening in MTF patients. Many were unfamiliar with hormonal regimens commonly used by transgender patients (67%) and requirements for transgender surgery (51.1%). The majority of participants had not performed hysterectomy/Bilateral salpingectomy-oopherectomy (BSO) (74.1%) for FTM patients, while 22.4% performed fewer than ten. However, respondents were generally comfortable providing cervical and breast cancer screening for transgender patients (>80%) and comfortable performing gender confirming surgery (>70%) (e.g., hysterectomy and BSO). Among respondents, 46% of OBGYNs believed there was a practice bulletin issued by ACOG, 22.4% did not think there was a practice bulletin, and 31% did not believe one existed.

Conclusions: Although this anonymous survey illustrates the trend for willingness of OBGYNs to take care of transgender patients with cancer screening and gender confirming surgery, there is a deficit regarding the appropriate screening for transgender patients on hormonal therapy. There is still a great need regarding caring for this ostracized and underserved population.

Support: None

Acknowledgements: Jason Delos Reyes from REDCap administration, Jay Gomes from ACOG for her time and patience, Dr. Jennifer Elia and Dr. Reni Soon for their guidance in framing the study.



Corrie Miller, DO

Fellow, Maternal-Fetal Medicine, Department of Obstetrics and Gynecology, John A. Burns School of Medicine (JABSOM), University of Hawai'i, Honolulu, HI

Ob-Gyn Residency: Danbury Hospital, Danbury, CT

Medical School: Arizona College of Osteopathic Medicine, Glendale, AZ

B.A. in International Studies: University of Arizona, Tucson, AZ

Honors/Awards:

- 2015: Patrice Gillotti Case Review Award for Displaying Excellence in the 6 Core ACGME Competencies of Resident Education
- 2014-2015: Teacher and Student Advocate Award, University of Vermont School of Medicine

Hobbies & Interests: Hiking, Climbing and boating

Medical Interests:

- Diminishing Diversion and Increasing Appropriate Disposal of Opioid Pain Killers after Cesarean Delivery
- Effects of Asian and Pacific Islander Diet Quality on Microbiota and Pregnancy Outcomes
- Placental invasion in IUGR after gene modulation of MTOR in the murine placenta

Publications:

Miller CB, Wright T. (2018). Investigating Mechanisms of Stillbirth in the Setting of Prenatal Substance Use. *Academic Forensic Pathology*, 8(4): 865–873. 2.

Miller C, Hoan K, Minig L, Chuang L, Shahabi S. (2017). A Review of Minimally Invasive Gynecologic Surgery in Developing Nations. *Journal of Gynecology and Women's Health*, 4(4): 555-643. 3.

Tanamai V, Seagle B, Yeh J, Brady B, **Miller C**, Luo G. (2016). Urine Protein/Creatinine Ratios During Labor: A prospective observational study. *Plos One*, 11(8): e0160453. PMID: 27479123

Lazarou G, **Miller C**, Gupta, N, Shah I, Vetere P. (2013). Intraoperative Crede's Maneuver for Tape Adjustment During Trans-Obturator Sling Placement – Does it Improve Continence? *Female Pelvic Med Reconstr Surg*, 19(6): 369-73. PMID: 24165452

Characterizing Congenital Heart Anomalies in Pregnancies with Single Umbilical Artery

Corrie Miller, DO; Dena Towner, MD

Objective: Single umbilical artery (SUA) is associated with fetal growth restriction as well as genetic and structural anomalies. Fetal echocardiogram has become a standard of care when a SUA is identified due to this association with congenital heart defects (CHD). This study aimed to characterize the type of CHD associated with SUA, the utility of ECHO after a negative targeted anatomy ultrasound and identify if a CHD was more common if there were non-cardiac anomalies also detected.

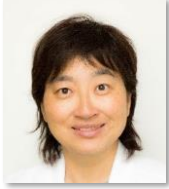
Study Design: Retrospective chart review of all patients with ultrasonographic findings of SUA and pathologic confirmation postnatally between 2010 and 2018 our Fetal Diagnostic Center. The rates and types of CHD in patients with isolated SUA and non-isolated SUA (additional anomalies detected on anatomical survey) were compared. The types of CHD were classified as major (structural) defects or minor (septal defects, anomalous vasculature, malrotation).

Results: 300 patients with pathologically confirmed SUA were identified between July 2010 and July 2018. 43% had a fetal echo. 6.6% of cases (n = 20) with genetic causes detected antenatally or postnatally were excluded: Trisomy 18 (8); Trisomy 13 (4); 45XO (2); Trisomy 21 (1); 47XXY (1) Microdeletions (2), Unbalanced translocation (1), EBP gene mutation (1). 246 (83%) fetuses had isolated SUA, and 34 (17%), had another concurrent fetal anomaly. Of patients with euploid fetuses, 6.5% of cases with isolated SUA had a congenital heart defect, while 1.1% of fetuses with another anomaly were found to have CHD. Most heart defects with non-isolated SUA were associated with aneuploidy. All major heart defects except for 1 were identified at the time targeted anatomy sonogram. After targeted anatomy US, Fetal Echo primarily only identified additional minor variant defects (Mesocardia or Left Superior Vena Cava) but no additional structural heart anomalies.

Conclusions: In non-isolated SUA, CHD is highly associated with aneuploidy. Targeted anatomy ultrasound detects the majority of structural anomalies, even in pregnancies with multiple anomalies. Fetal echocardiogram may only add additional diagnosis of minor heart anomalies. This should be taken into account in an era of healthcare cost containment.

Support: N/A

Acknowledgements: None



Men-Jean Lee, MD

Professor, Department of Obstetrics and Gynecology, John A. Burns School of Medicine (JABSOM), University of Hawai'i, Honolulu, HI

Post-doctoral Research Fellowship: Reproductive Scientist Development Program Research Scholar (Phase 2), Department of Obstetrics and Gynecology, Yale School of Medicine, New Haven, CT

Post-doctoral Research Fellowship: Reproductive Scientist Development Program Research Scholar (Phase 1), Department of Microbiology, New York University School of Medicine, New York, NY

Maternal-Fetal Medicine Fellowship: Strong Memorial Hospital, University of Rochester School of Medicine, Rochester, NY

Ob-Gyn Residency: McGaw Medical Center, Northwestern University Medical School, Chicago, IL

Medical School and B.S.: Honors Program in Medical Education (6-year combined BS/MD program), Northwestern Univ School of Medicine, Chicago, IL

Honors/Awards:

- 2018: Mentor for Society for Reproductive Investigation President's Award for Best Research Abstract to Jonathan Riel, PhD, John A. Burns School of Medicine, University of Hawai'i, Department of OB/GYN
- 2017: The CREOG National Faculty Teaching Award, John A. Burns School of Medicine, University of Hawai'i, Department of OB/GYN

Hobbies & Interests: Teaching arts and crafts to 8-12 year olds at the Mandarin Academy in Chinatown on weekends; pottery, acrylic painting, art therapy.

Medical Interests: Diabetes, fetal growth restriction, reproductive microbiome, stress in pregnancy, cultural competency, immigrant healthcare

Publications:

Crowther CA, Middleton PF, Voysey M...**Lee MJ** et al. for the PRECISE Group. (2019). Effects of repeat prenatal corticosteroids given to women at risk of preterm birth: an individual participant data meta-analysis. *PLOS Medicine*, in press.

Jones R, Peña J, Mystal E, Marsit C, **Lee MJ**, Stone J, Lambertini L. (2018). Mitochondrial and glycolysis-regulatory gene expression profiles are associated with intrauterine growth restriction. *J Matern Fetal Neonatal Med*, 25:1-10. PMID: 30251570

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Nomura Y, Lambertini L, Rialdi A, **Lee MJ**, Mystal EY, Grabie M, Manaster I, Huynh N, Finik J, Davey M, Davey K, Ly J, Stone J, Loudon H, Eglinton G, Hurd Y, Newcorn JH, Chen J. (2014). Global methylation in the placenta and umbilical cord blood from pregnancies with maternal gestational diabetes, preeclampsia, and obesity. *Reprod Sci*, 21(1):131-7. PMID: 23765376

Longitudinal Study of Loss of Imprinting in First Trimester CVS Samples Compared to Term

Jonathan Riel, PhD; Jia Chen, ScD; Luca Lambertini, PhD; Qian Li, PhD; Yula Ma, MD; Maya Kappil, PhD; Men-Jean Lee, MD

Objective: The majority of human genes are bi-allelically expressed from both maternal and paternal alleles with the exception of a few genes that are mono-allelically expressed, and known as imprinted genes. These genes obtain their epigenetic marks during early embryonic development and were believed to retain mono-allelic expression patterns throughout development. In the event of loss of imprinting (LOI) or bi-allelic expression of these genes, expression levels are dysregulated and may lead to adverse pregnancy outcomes. In contrast to the prevailing theory, we have evidence to suggest that epigenetic marks in the placenta are modifiable. Therefore, we hypothesize that patterns of LOI are not fixed in the human placenta and are subject to developmental and environmental influences over the course of pregnancy that predispose to adverse pregnancy outcome.

Design: We performed a longitudinal cohort sub-study of pregnant women enrolled in the NICHD Nulliparous Pregnancy Outcomes Study Monitoring Mothers-to-Be (NuMOM2B) that were undergoing chorionic villus sampling (CVS) for prenatal diagnosis with continuing pregnancies.

Methods: Placental villi from the CVS specimens and villi from subsequent whole placenta were collected at delivery. In a total of 158 subjects who underwent CVS, 152 samples were collected during the first trimester and 123 collected at term. Using quantitative allele-specific RT-PCR (qASPCR) we quantified LOI and determined how it evolves over the course of pregnancy. There were 84 pairs of CVS and post-delivery placental samples. By analyzing the LOI measurements in the prospectively collected CVS samples with the knowledge of delivery outcomes, we were able to use CVS to monitor LOI patterns in first trimester placentas to determine if they are predictive of pregnancy outcomes.

Results: Cluster analysis and principal component analysis of overall gene expression patterns showed that CVS and term samples cluster separately. However, over 95 genes in CVS tissues and 94 genes in term placental tissues were expressed stably, of which 90 were shared in common. 9 genes that were highly expressed in both tissues and H19 was identified as a good candidate gene for further study. Of the 84 pairs of CVS and term samples, 44 pairs included H19 heterozygotes. We observed a significant increase in H19 LOI ($p < 0.001$) in term samples compared to CVS samples. Additionally, Δ H19 LOI patterns positively correlated with birth weight.

Conclusions: The results from this study demonstrate that epigenetic marks in the placenta are not fixed, and LOI of H19 may serve as a biomarker for determining fetal growth. LOI of H19 may be developed as a bioassay to monitor placental development and diagnose at-risk fetuses.

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Resident & Fellow Research Day 2019
Research Productivity of UH OB/GYN
Faculty, Fellows, Former Fellows, Residents, and Medical Students

Publications May 2018 – May 2019

1. Alvarado, F. L., Calabuig-Navarro, V., Haghiac, M., Puchowicz, M., Tsai, P. S., & O'Tierney-Ginn, P. (2018). Maternal obesity is not associated with placental lipid accumulation in women with high omega-3 fatty acid levels. *Placenta*, 69, 96-101. doi:10.1016/j.placenta.2018.07.016
2. Bailey, M. H., Tokheim, C., Porta-Pardo, E., Sengupta, S., Bertrand, D., Weerasinghe, A., Colaprico, A., Wendl, M.C., Kim, J., Reardon, B., Kwok-Shing Ng, P., Jeong, K.J., Cao, S., Wang, Z., Gao, J., Gao, Q., Wang, F., Liu, E.M., Mularoni, L., Rubio-Perez, C., Nagarajan, N., Cortes-Ciriano, I., Zhou, D.C., Liang, W.W., Hess, J.M., Yellapantula, V.D., Tamborero, D., Gonzalez-Perez, A., Suphavitai, C., Ko, J.Y., Khurana, E., Park, P.J., Van Allen, E.M., Liang, H., M.C. Working Group, Cancer Genome Atlas Research Network (Carney, M.E.), Lawrence, M.S., Godzik, A., Lopez-Bigas, N., Stuart, J., Wheeler, D., Getz, G., Chen, K., Lazar, A.J., Mills, G.B., Karchin, R., & Ding, L. (2018). Comprehensive Characterization of Cancer Driver Genes and Mutations. *Cell*, 174(4), 1034-1035. doi:10.1016/j.cell.2018.07.034
3. Chern, I., Antalan, C., Aeby, T., & Hiraoka, M. (2018). The Effect of a Targeted Educational Activity on Obstetrics and Gynecology Resident In-Training Examination Scores. *Hawaii J Med Public Health*, 77(7), 161-165.
4. Ecker, J., Abuhamad, A., Hill, W., Bailit, J., Bateman, B. T., Berghella, V., Blake-Lamb, T., Guille, C., Landau, R., Minkoff, H., Prabhu, M., Rosenthal, E., Terplan, M., Wright, T.E., & Yonkers, K. A. (2019). Substance Use Disorders in Pregnancy: Clinical, Ethical, and Research Imperatives of the Opioid Epidemic: A report of a joint workshop of the Society for Maternal-Fetal Medicine, American College of Obstetricians and Gynecologists, and American Society of Addiction Medicine. *Am J Obstet Gynecol*. doi:10.1016/j.ajog.2019.03.022
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Department of Ob-Gyn Abstract Presentations
Faculty, Fellows, Former Fellows, Residents, Former Residents, and Medical Students
May 2018-May 2019

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1. Fetal Cytokine Levels in Obese and Non-Obese Pregnancies

Akiyama M., Benny P., Riel J., Schlueter R., Garmire L., Townner D., Bernstein H., Lee M.J.



OBJECTIVE: Maternal obesity is at epidemic proportions and is known to influence the future health of the offspring. Our study aims to evaluate the cord blood cytokine profiles from newborns of obese and normal weight mothers to elucidate the trans-generational impact of maternal obesity as a potential mediator of health.

STUDY DESIGN: We performed a case-control study comparing cord blood cytokines from 33 obese (BMI>30.0) with 45 normal weight (BMI 18.0-25.0) women with uncomplicated pregnancies who were having scheduled Cesarean deliveries at ≥ 37 weeks' gestation. Cytokine and chemokine profiles were measured using EMD Millipore Luminex xMAP multiplex assays (14-plex). Data acquisition and analysis were performed using a Luminex 200 instrument and xPONENT 3.1 data analysis software. Analyses were performed using the Wilcoxon rank sum test with Bonferroni correction. Student's t-test was performed to identify significant cytokines.

RESULTS: When stratified by parity, the cord blood from obese nulliparous pregnant women contained several cytokines that were significantly reduced including IFN γ , IL-10, IL-12(p40), IL-12(p70), IL-4, TNF α , MCP-1, VEGF and IFN α 2. However, cord blood from multiparous women did not show any major cytokine differences between obese and normal weight women except for IL-4 which was significantly increased in the cord blood of obese, multiparous women. Furthermore, stratification of the cytokine profiles by parity identified a reduction in cytokine levels as parity increased in normal weight women, but an increase in cytokine levels in obese women with increasing parity.

CONCLUSIONS: Maternal obesity has significant impact on newborns' cytokine levels in cord blood plasma. Further systematic investigation into newborn cytokine and chemokine pathway abnormalities is warranted.

Poster presentation at the 2019 Society for Reproductive Investigation (SRI) Annual Meeting, Paris, France, March 12-16, 2019.

2. A Comparison of Blastocyst Formation between Japanese and White Voluntary Egg Donors

Chen H., Wu E., Besic N., Ahn H.J., Fujimoto V.Y., Kosasa T., Huang T., Kessel B.



OBJECTIVE: Some studies indicate lower autologous IVF success rates in Asian vs White women. If this is true, the underlying etiology is not clear. We chose to compare rates of blastocyst formation between Japanese and White young, healthy voluntary egg donors to seek explanations for lower IVF success rates in Asian women.

DESIGN: Japanese and White voluntary egg donors underwent gonadotropin stimulation followed by egg retrieval. The rates of high quality blastocysts were compared between the groups.

MATERIALS AND METHODS: Japanese and White voluntary egg donors underwent gonadotropin stimulation based on age and basal antral follicle count. Gonadotropin releasing hormone antagonist was initiated with a lead follicle of 15 mm. Final oocyte maturation was with HCG or GnRH agonist based on peak estradiol level. Oocyte retrieval occurred 36 hours later and mature oocytes were fertilized by intracytoplasmic sperm injection. The mature fertilized oocytes were graded on Days 5 and 6. Blastocyst grading was determined using a scoring system, where high quality blastocysts are expanded blastocysts at grade 4+, plus inner cell mass and trophectoderm grade A or B.

RESULTS: The mean age of Japanese egg donors (n=101) was 26.0, and the mean age of the White egg donors (n=53) was 24.5 (p=0.0002). The groups were similar with regard to gravida, parity, prior miscarriage or abortion. BMI was not significantly different between groups. Estradiol on day of trigger was higher in Japanese donors (p=0.0127). The primary endpoint of number of high quality blastocysts per cycle (Japanese 7.3 versus White 8.6; p=0.0930) was not statistically different. Similarly, the number of high quality blastocysts per mature oocyte and per fertilized oocyte were not statistically different between Japanese and White donors. Multivariate analysis correcting for donor age, gonadotropin dose, estradiol,

and number of embryos transferred, showed similar results. Clinical pregnancy rates of recipients were also not statistically different between Japanese and White recipients.

CONCLUSION: Formation of high quality blastocysts occurs at the same rate in Japanese vs White voluntary egg donors. This suggests that the lower autologous IVF success rates in Japanese women is not related to oocyte, fertilization or embryo development.

Poster presentation at the 2018 American Society of Reproductive Medicine (ASRM) Scientific Congress & Expo, Denver, CO, October 6-10, 2018.

3. **Mife by Mail: Findings from a Telemedicine Abortion Service in the United States**

Chong E., Raymond E., [Kaneshiro B.](#), Baldwin M., Coplon L., Bednarek P., Priegue E., Winikoff B.

BACKGROUND: In the United States, many women struggle to obtain an abortion due to ever-increasing barriers to access. The TelAbortion Project provides medical abortion directly to women in their homes using telemedicine and mail, enabling them to receive services without going to a clinic. We will report on interim findings from the first two years of the project.

METHODS: TelAbortion is available in Hawaii, New York, Maine, Oregon, and Washington. Interested women contact implementing sites and interact with clinicians by videoconference. After obtaining screening tests at radiology and lab facilities close to them, eligible women are mailed packages containing mifepristone and misoprostol. Women take the medications at home, obtain follow-up tests and have another consultation with the clinician.

RESULTS: Through June 2018, 200 women had received medication through the project. Of the 70% who were followed to completion, 5% had a surgical completion. The vast majority of packages were sent within two weeks after the initial study contact, and all women reported taking the mifepristone at gestational ages of 72 days LMP or less. No related serious adverse events were reported. All women reported being very satisfied or satisfied, and the most commonly reported best features of the service were the convenience and privacy.

CONCLUSIONS: Direct-to-patient telemedicine abortion is feasible and can potentially increase access to abortion care in a safe and acceptable manner. Although telemedicine bans and other restrictions are on the rise, TelAbortion could plausibly be legally implemented in about half of the 50 states, where about 56% of the female reproductive-age population reside.

Oral presentation at the 2018 International Federation of Professional Abortion and Contraception Associates (FIAPAC) Conference, Nantes, France, September 14-15, 2018.

4. **Examining the Complexity of Researching Racial/Ethnic Disparities in Hawai'i - a "Minority Majority" State**

Delafield R., [Chang A.](#), Sentell T., [Elia J.](#), Pirkle C.M.

BACKGROUND: Since its establishment as part of the United States (U.S), Hawai'i has been a "minority majority" state. This setting provides a unique context in which to examine health disparities by race/ethnicity. For many health indicators in Hawai'i, some non-White racial/ethnic groups whose data are rarely disaggregated in national reports have better health outcomes compared to Whites. Here, we describe the complexity of researching racial/ethnic disparities in the diverse state of Hawai'i.



METHODS: Case study of a research project that retrospectively investigated factors contributing to racial/ethnic disparities in cesarean delivery. Methods for the investigation required determining which racial/ethnic groups to include and their definitions. These considerations are critical in a state where 23.7% of the population identifies as more than one race and where Whites share "dominant" positions based on social and economic influence with other groups.

RESULTS: A comparison of birth certificate to hospital records revealed that 15% of hospital records listed race as unknown/blank and over 40% of our population of interest had their race misclassified. Birth certificate data indicated 38% of patients self-identified as more than one race. Considering how and who defines racial/ethnic groups and conducting context specific power/privilege analyses may improve strategies aimed at addressing racial/ethnic health inequities.

CONCLUSION: This work provides insights for examining racial/ethnic health disparities within communities that are increasingly mixed or where racialized power dynamics are shifting. Expanding our discussions about race is vital as demographic shifts in the U.S. result in greater diversity and where racism continues to impact health.

Poster presentation at the 2018 American Public Health Association (APHA) Annual Meeting, San Diego, CA, November 2-6, 2018.

5. Recent Prior Cesarean Delivery Increases Risk of Failed Medication Abortion

Diedrich J., [Ghatnekar R.](#), Russo J.



OBJECTIVES: To investigate whether there is an association between prior cesarean delivery and failure of medication abortion in a large clinic affiliate.

METHODS: Data were abstracted from 10,281 consecutive charts of patients who underwent a medication abortion between 2016-2017 at 9 affiliate clinics. All women received the new FDA-approved evidence-based regimen at 70 days of gestation or less. The primary outcome of failure medication abortion was defined as an ongoing pregnancy and secondary outcome included incomplete abortion. Multivariable analysis was used to assess any relationship between history of cesarean, recent cesarean, failed medication abortion, and incomplete abortion.

RESULTS: Data were available for 7845 women who presented for follow-up (76.3%). Failure, defined as an ongoing pregnancy, occurred in 0.88% of patients (n=69). Incomplete abortions occurred in 3.99% of patients (n=313). The failed abortion rate was 0.8% for women without cesarean and 1.52% for women with a prior cesarean (P=0.032). Incomplete abortion rate was 3.7% for women without cesarean and 6.1% for women with history of cesarean (P=0.001). Women who underwent cesarean delivery within 1 year of medication abortion attempt had a hazard ratio of 5.36 (95% CI 1.58 – 18.2).

CONCLUSIONS: Prior cesarean delivery within 1 year of medication abortion is associated with an increased risk of failed medication abortion. History of cesarean delivery is associated with incomplete medication abortion.

Poster presentation at the 2018 North American Forum in Family Planning, New Orleans, LA, October 20-22, 2018.

6. Perspectives of Hawaii College Students About Sources of Sexual Health Information

[Fontanilla T.](#), [Tschann M.](#)



BACKGROUND: Sexual education (sex ed) provided in school is the primary source of sexual health information for many adolescents. However, students may seek information about these topics from other sources beyond formal instruction. We describe the perspectives of college students in Hawaii regarding (1) sexual health information resources and (2) willingness and ability to access reproductive health services.

METHODS: An anonymous online survey was sent via email to 610 students enrolled in undergraduate courses across five college campuses from February 2017 through December 2017. Participants could decline to answer any questions they did not feel comfortable responding to and were provided a small gift card for their time. The study was approved by the institutional review board as exempt from federal regulations pertaining to the protection of human research participants.

RESULTS: A total of 314 surveys were returned (51% response rate). The majority of respondents were female (N=231/313, 74%) and 17-23 years old (N=236/300, 79%). Respondents identified the internet and friends in both middle school (N=208/314, 66%; N=190/314, 61%) and high school (N=216/314, 69%; N=219/314, 70%) as being the top sources they would use if they had questions about pregnancy prevention, sex, or STI/STDs. Respondents cited the internet (N=232/314, 74%) or healthcare professionals (N=169/314, 54%) as their most commonly used source today. While most respondents have a healthcare provider (N=213/304, 68%) and are willing to use their insurance (N=281/304, 92.4%) to get birth control and/or STI/STD testing, only 54% (N=165/304) reported that they have coverage for these services.

CONCLUSIONS: Students sought information about sexual health from resources beyond sex ed. Peer- and web-based educational platforms should be leveraged for adolescent reproductive health education. College students report comfort with utilizing the healthcare system to address their reproductive health needs and cite healthcare professionals as a trusted source of information.

Poster presentation at the 2019 North American Society for Pediatric and Adolescent Gynecology (NASPAG) Annual Clinical and Research Meeting, New Orleans, LA, April 11-13, 2019.

7. “Morphogenetic Mapping:” A New Concept for Non-invasive Assessment of Ploidy Based Upon Blastocyst Expansion Kinetics Seen in Euploid and Aneuploid Embryos

Huang T.T.F., Walker B., Arnett C., Huang C.



OBJECTIVE: To describe a new concept of “Morphogenetic Mapping” of blastocysts based on a standard assay of blastocyst expansion in PGD-A cases. Such maps may help to objectively select embryos most likely to be euploid without biopsy

DESIGN: A retrospective observational study of trophoctoderm biopsy cases from a single private IVF center.

MATERIALS AND METHODS: The study involved 43 sequential PGD-A cases from January 2017- January 2018 which evaluated a total of 209 blastocysts. The median ages of patients was ___(range). All fertilized eggs were cultured continuously in an Embryoscope after ICSI for up to 6 days. On Day 2 a derived Eeva Score was annotated as High, Medium, or Low using published P2 and P3 metrics. At the defined blastocyst formation time (tB), the cross sectional area of blastocyst expansion was subsequently annotated at 2 hour intervals using the Embryoscope software for a minimum of 10 hours before biopsy on D5 or D6. Biopsies were analyzed by Genesis Genetics without mosaic calls. The median number of blastocysts biopsied was 5/pt (range: 1-11). The overall ratio of euploid:aneuploid was 35% (74:135). A Morphogenetic Map was constructed as a scatterplot of embryos based on an embryo’s 1) degree of expansion at 10 hours and 2) blastocyst formation times (hrs from ICSI).

RESULTS: This “standard assay” was defined as the total area of the blastocyst (TE and cavity) over 10 hours of expansion from tB. The total population Map showed a differential distribution of Aneuploids and Euploids. In the map’s vertical plane, Euploids were enriched >2:1 in regions representing those embryos most expanded, while Aneuploids were enriched >3:1 in regions representing those least expanded. Map regions enriched in Euploids were also de-enriched in single chromosome trisomies, monosomies, and complex abnormalities involving 2 or more chromosomes. The class of duplications and deletions showed no clear de-enrichment within map regions. While there was no obvious correlation between Eeva score and ploidy overall, Euploids in the euploid-enriched region were mostly Eeva HIGH and MEDIUM. Eeva LOW scores characterized >50% of trisomies, further supporting the usefulness of this metric. Patient specific cohort maps showed the practical value of this approach in choosing embryos for transfer. The enrichment of Euploids among the highest ranks was greater in patients <35 yrs, suggesting that this non-invasive approach could be most efficacious in this group.

CONCLUSIONS: This study defines a new standard assay of blastocyst expansion to create Morphogenetic Maps useful for embryo selection. These maps can be used to rank embryos for transfer and may be of greatest value for single embryo transfer in patients <35 yrs without biopsy.

SUPPORT: This work was supported by the Division of Research of the Department of Obstetrics and Gynecology of the John A. Burns School of Medicine.

Poster presentation at the 2018 American Society of Reproductive Medicine (ASRM) Scientific Congress & Expo, Denver, CO, October 6-10, 2018.

8. Successful Adoption and Acceptance of a Full-time Laborist Model in a Community-based Hospital

Lee M.J., Berman M.R., Flores C., Baron E., Wang J., Matheson D., Lipshutz R., Stein J.L.

OBJECTIVE: Our goal is to demonstrate how a full-time laborist program was fully integrated and accepted into a busy urban hospital serving voluntary medical staff from the community while improving quality metrics including the reduction in Total Cesarean Sections (CS), Primary CS, and Nulligravida Term Singleton Vertex CS rates.

STUDY DESIGN: This was a retrospective study of CS rates from 2012-2015 at a single center following the institution of a comprehensive program to improve quality and safety. Key components of the program included: (1) Recruitment of a Medical Director and 4 full-time laborists with no private practices of their own who provided 24/7 oversight and supervision of all patients on the unit. (2) A web-based electronic scheduling program with decision support and hard stops was implemented for scheduled CS and labor inductions. (3) A collaboration was established between the laborists and the hospital's Maternal-Fetal Medicine (MFM) specialists to provide external cephalic version (ECV), second-opinion consultations for elective primary CS, and consultations for all patients admitted less than 36 weeks' EGA; and a midwifery practice to promote vaginal birth. (4) A full-time Patient Safety Nurse was recruited to assist the Medical Director to facilitate communication, team training, data collection and analysis, and best practices such as safety huddles for laborists and nurses. Data was extracted from an integrated electronic medical record for analysis.

RESULTS: An average of 3700 of births/year took place during this time period with community practitioners attending the majority of births. The total CS rate and the primary CS rates decreased while the Vaginal Birth After CS (VBAC) rate increased (Table 1, Figure 1). The elective (non-medically indicated) induction of labor prior to 39 weeks was reduced to 0%. The decline in the CS rate from 30% to 20% led to an overall reduction of ~400 Cesarean deliveries per year.

CONCLUSION: The full-time laborist program initially alarmed the community practitioners; however, hospital champions facilitated discussions between laborists, MFMs, community physicians, midwives, nurses, and patients about timing of scheduled births, management of high risk pregnancies, VBAC, and ECV. The culture shifted on the unit to promote patient safety, quality, and best practices while supporting professional satisfaction of the community practitioners in private practice, residency training, and the faculty practices.

Poster Presentation at the 2019 Society for Maternal-Fetal Medicine (SMFM) Annual Pregnancy Meeting, Las Vegas, NV, February 11-16, 2019.

9. Characterizing Congenital Heart Anomalies in Pregnancies with Single Umbilical Artery

Miller C., Towner D.

OBJECTIVE: Single umbilical artery (SUA) is associated with fetal growth restriction as well as genetic and structural anomalies. Fetal echocardiogram has become a standard of care when a SUA is identified due to this association with congenital heart defects (CHD). This study aimed to characterize the type of CHD associated with SUA, the utility of ECHO after a negative targeted anatomy ultrasound and identify if a CHD was more common if there were non- cardiac anomalies also detected.



STUDY DESIGN: Retrospective chart review of all patients with ultrasonographic findings of SUA and pathologic confirmation postnatally between 2010 and 2018 our Fetal Diagnostic Center. The rates and types of CHD in patients with isolated SUA and non-isolated SUA (additional anomalies detected on anatomical survey) were compared. The types of CHD were classified as major (structural) defects or minor (septal defects, anomalous vasculature, malrotation).

RESULTS: 299 patients with pathologically confirmed SUA were identified between July 2010 and July 2018. Fifteen (5%) of these were confirmed to have aneuploidy either antenatally or postnatally and were excluded from the analysis. 247 (82.6%) fetuses had isolated SUA, and 37 (12.3%), had another concurrent fetal anomaly. Of patients with isolated SUA, 4.5% had a congenital heart defect, while 16.2% of fetuses with another anomaly were found to have CHD. Isolated SUA did not confer less risk for major CHD vs. non-isolated SUA, ($X^2 = 1.41$, $p = 0.23$). Half of major anomalies were identified at the time of fetal echocardiogram and were not seen at the time of targeted anatomy sonogram.

CONCLUSION: Even with isolated SUA, the incidence of CHD is increased over the baseline risk of the general population and should warrant additional screening via fetal echocardiogram. Furthermore, the type of CHD can be severe and require referral to a tertiary care center.

Poster Presentation at the 2019 Society for Maternal-Fetal Medicine (SMFM) Annual Pregnancy Meeting, Las Vegas, NV, February 11-16, 2019.

10. Aneuploidy Screening Analytes and Adverse Outcomes in Twin Gestations

Ono A., Yamasato K.

OBJECTIVE: To evaluate the association between genetic screening serum analytes and adverse pregnancy outcomes in twin gestations



STUDY DESIGN: We performed a retrospective cohort study of twin gestations with available serum analytes who delivered at a tertiary care hospital from November 2009 to April 2017. Monoamniotic twins and antenatally confirmed fetal genetic anomalies and neural tube/abdominal wall defects were excluded. Data was collected by manual chart review by study investigators. Pregnancy associated plasma protein (PAPP-A), 1st and 2nd trimester human chorionic gonadotropin (hCG), alpha-fetoprotein (AFP), estriol, and inhibin multiple of the medians (MoMs) were collected, with abnormal levels defined as PAPP-A, 1st trimester hCG, and estriol <5%ile, and AFP, 2nd trimester hCG, and inhibin >95%ile for the cohort. Adverse outcomes were preterm delivery (PTD) < 37 and < 34 weeks gestation, small for gestational age (birthweight <10%ile), and pregnancy-associated hypertensive disease (preeclampsia, gestational hypertension, chronic hypertension with superimposed preeclampsia). Associations between abnormal analyte levels and outcomes, stratified by chorionicity, were calculated using chi-square or Fisher's exact test.

RESULTS: Of 1060 twins delivered during the study interval, 480 (45.3%) had available analytes and met inclusion criteria - 357 dichorionic/diamniotic (di/di) and 123 monochorionic/diamniotic (mono/di). Second trimester analytes were available for all while 249 (51.9%) and 167 (34.8%) women had PAPP-A and 1st trimester beta-hCG respectively. Among di/di twins, elevated AFP (>3.70 MoM) was associated with increased PTD < 34 weeks (44.4 vs 16.5%, P = 0.007) while elevated inhibin (>4.95 MoM) was associated with increased PTD < 37 weeks (94.1 vs 58.8%, P = 0.004). For mono/di twins, elevated inhibin (>6.34 MoM) was associated with an increased PTD < 34 weeks (66.7 vs 24.8%, P=0.04) and hypertensive disease (66.7 vs 21.4%, P=0.03). There were no associations between adverse outcomes and other analytes.

CONCLUSION: Elevated AFP and inhibin in twin pregnancies were associated with increased risks for PTD and pregnancy-associated hypertensive disease, though these associations differed by chorionicity. Such findings may contribute to the ability to identify twin pregnancies at increased risk for adverse outcomes.

Poster presentation at the 2019 Society for Maternal-Fetal Medicine (SMFM) Annual Pregnancy Meeting, Las Vegas, NV, February 11-16, 2019.

11. Racial/Ethnic Variations in Trial of Labor After Cesarean in an Understudied Population

Pacheco M., Kaneakua-Pia L., [Chang A.](#)



PURPOSE: Increasing the vaginal birth after cesarean (VBAC) rate for appropriate candidates would help to decrease the high cesarean delivery rate in the United States. This study aimed to examine racial/ethnic differences in trial of labor after cesarean (TOLAC) and VBAC rates in a largely Asian and Pacific Islander population.

METHODS: Retrospective chart review was performed on all women with a term, singleton, live, cephalic fetus and with a history of one and two prior cesarean deliveries who delivered at a single institution in Honolulu between 2010 and 2016. Multiple logistic regression was performed to examine the likelihood of a successful VBAC for the twelve detailed races/ethnicities examined.

RESULTS: 4,517 women met study criteria. Of the 37.8% that tried labor, 80.1% had a successful VBAC resulting in an overall 30.3% VBAC rate for the population studied. Native Hawaiians and other Pacific Islander (PI) groups (Marshallese, Micronesian, Other PI) (n=1,814) had the highest TOLAC rates (37.6-78.5%). Adjusted odds of successful VBAC was similar to Whites in all groups except for Marshallese and Micronesian women (aOR 4.24, 95% CI 2.02-8.90 and aOR, 3.51, 95% CI 1.83-6.76).

CONCLUSIONS: The high VBAC rate in the population studied was largely due to a high TOLAC rate. One's race/ethnicity should not deter a patient from attempting VBAC. Further research should be performed to see if these findings can be replicated.

Poster presentation at the 2018 American College of Obstetricians and Gynecologists (ACOG) Annual District VIII & IX Annual Meeting, Kapalua, HI, October 4-6, 2018.

12. Impact of Sociocultural Norms on Sexual Behavior and Contraceptive Practices among Adolescents and Young People

[Raidoo S.](#), [Tschann M.](#), [Elia J.](#), [Soon R.](#)



BACKGROUND: Adolescents and young people are surrounded by sociocultural norms about sex while also developing their own ideas and opinions. Families and friends also play a role in setting expectations about sex, birth control, and relationships. The objective of this study is to describe the sociocultural norms surrounding sexual behavior and contraceptive use for adolescents and young people and assess how they influence sexual behavior and contraceptive decisions.

METHODS: This is a sub-analysis of a qualitative study assessing influences on dual use practices among adolescents and young people. Semi-structured interviews were conducted with female contraceptive users aged 14-25 and men aged 14-30. Interviews were conducted until thematic saturation was reached. Interviews were analyzed through the process of content analysis and common themes and ideas were identified. This study was approved by the University of Hawaii Institutional Review Board (UH CHS 23198).

RESULTS: Interviews were conducted with 46 women and 13 men. The majority of participants reported that their families held cultural or religious views that young people should not be having sex or using birth control. Most participants reported that they did not talk to their parents about sex, although a small number did report having open conversations with their parents. While many did not agree with their families' ideas, they did note that their parents' expectations of avoiding pregnancy did influence their decision to use contraception. All participants reported sharing information about sex with their friends but noted that their friends' opinions did not influence their behavior. Participants noted that there was a societal stigma around young people having sex or carrying condoms, and suggested that improvements in sexual health education were important to destigmatize sex and condom use.

DISCUSSION: Many families do not want adolescents and young people to be having sex or using birth control, and families convey these expectations to young people. Adolescents and young people are aware of the ideas and expectations that their families and society have, but are confident in making their own decisions. It is necessary to address the stigma surrounding sex and birth control for young people in order for them to make safer and more informed decisions.

Poster presentation at the 2019 North American Society for Pediatric and Adolescent Gynecology (NASPAG) Annual Clinical and Research Meeting, New Orleans, LA, April 11-13, 2019.

13. Opioid Prescribing Trends in Postpartum Women: A Multicenter Study

Sanchez Traun K., Schauburger C., Ramirez L., Jones C.W., Lindberg A., **Molero Bravo R.**, **Wright T.**, Traun B.D., Peterson S.E., Rudolph V.

PURPOSE: The postpartum period can be a particularly vulnerable time for exposure to opioid medications and there are currently no consensus guidelines for physicians to follow regarding opioid prescribing during this period. The purpose of this study was to evaluate inter- and intra-hospital variability in opioid prescribing patterns in postpartum women and better understand the role of clinical variables in prescribing.

METHODS: Data was extracted from electronic medical records on 4248 patients who delivered at six hospitals across the United States from January to March 2016. The primary outcome of the study was postpartum opioid prescription at the time of hospital discharge.

RESULTS: The percentage of women prescribed postpartum opioids varied significantly by hospital, ranging from 27.6% to 70.9% ($p < 0.001$). Oxycodone-acetaminophen was the most commonly prescribed medication (50.3%) with each hospital having its preferred opioid type. Median number of tablets prescribed ranged from 20 to 40 ($p < 0.0001$). Primiparous women were more likely to receive opioids than multiparous women when broken down by a parity of 1, 2, 3, 4 and ≥ 5 (52.8%, 48.0%, 47.6%, 40.1%, 45.8%, respectively, $p = 0.0005$). Among women who had vaginal deliveries, opioid prescription rates were higher in women who experienced either a 2nd degree laceration (35.5%, $p = 0.0002$) or a 3rd/4th degree laceration (59.3%, $p < 0.001$).

CONCLUSIONS: Postpartum opioid prescription rates vary widely among hospitals, but providers within the same hospital tend to follow similar prescribing trends. The variation in prescribing found in our study illustrates the need for clear consensus guidelines for postpartum pain management.

Poster presentation at the 2019 American Association of Addiction Medicine (ASAM) Conference of Innovations in Addiction Medicine and Science, Orlando, FL, April 5, 2019.

14. Effects of Maternal Diabetes on Pregnancy Outcomes

Tsai P.J.S., Yamauchi Y., Riel J., Geralde-Machida K., Kim L., Ward M.

OBJECTIVE: Women with type 1 and 2 diabetes mellitus (DM) have increased risk of adverse perinatal outcomes, including carrying a fetus with congenital malformation, intrauterine fetal demise, intrauterine growth restriction, macrosomia, and postnatal metabolic disturbances. Early glycemic control in pregnancy is crucial for decreasing adverse outcomes. However, it is unclear whether preconception hyperglycemia also contributes to adverse perinatal outcomes in diabetes. We examined preconception versus intrauterine effects of hyperglycemia on perinatal outcomes using a mouse model of reciprocal embryo transfer, in which embryos produced with oocytes from diabetic (DMOD) or non-diabetic (COD) oocyte donors are transferred to diabetic (DMS) or non-diabetic (CS) surrogate mothers.



STUDY DESIGN: Diabetes was induced by intraperitoneal injection of streptozotocin 200mg/kg into 5 weeks old CD-1 mice. Upon reaching sexual maturity diabetic and control females were used as oocyte donors for in vitro fertilization (IVF) and as surrogate mothers for embryo transfer. Caesarian section was performed at term. One-way ANOVA was used to compare embryo ability to develop (implantation, fetal and abortion rates), fetal and placental weights, and incidence of congenital anomalies.

RESULTS: The diabetic and non-diabetic surrogate mothers had similar ability to carry pregnancy, evidenced as rate of live fetuses (% , DMOD-DMS: 49 ± 7 ; COD-DMS: 51 ± 9 ; DMOD-CS: 66 ± 6 ; COD-CS: 60 ± 8 ; $P=0.43$). Implantation and abortion rates also did not differ among the four groups ($P=0.81$ and $P=0.14$). Fetal weights were significantly decreased in offspring from diabetic surrogate mothers, (g, DMOD-DMS: 0.9 ± 0.03 ; COD-DMS: 0.77 ± 0.04 ; DMOD- CS: 1.37 ± 0.02 ; COD-CS: 1.35 ± 0.02 ; $P=0.0012$) while placental weights were similar ($P=0.43$). Fetuses with major congenital anomalies (anencephaly, myelomeningocele, abdominal wall defect) were observed only with diabetic surrogate mothers (% , DMOD-DMS: 15 ± 6 ; COD-DMS: 35 ± 15 ; $P=0.003$).

CONCLUSION: Diabetic status does not interfere with ability to carry pregnancy. However, adverse perinatal outcomes result when pregnancy is carried by diabetic surrogate mothers regardless whether oocytes are from diabetic or non-diabetic donor. This suggests that pregnancy environment is causative of adverse perinatal outcomes associated with diabetes, which underlines the importance of glycemic control in pregnancy.

Poster presentation at the 2019 Society for Maternal-Fetal Medicine (SMFM) Annual Pregnancy Meeting, Las Vegas, NV, February 11-16, 2019.

15. The Effect of Prophylactic Oxytocin on Bleeding Outcomes in Women Undergoing Dilatation and Evacuation: A Randomized, Double-Blind, Placebo-Controlled Trial

Whitehouse K., Tschann M., Soon R., Davis J., Micks E., Salcedo J., Savala M., Kaneshiro B.

OBJECTIVE: To determine whether prophylactic use of intravenous oxytocin decreases the frequency of interventions used to control excess blood loss during dilatation and evacuation (D&E).

METHODS: In this randomized, double-blind, multi-site trial, women undergoing D&E at 18 to 24 weeks of gestation received 30 units of oxytocin in 500 mL of intravenous fluid (IVF) or 500 mL of IVF alone initiated upon speculum placement. The primary outcome was the frequency of interventions to control excess bleeding. Secondary outcomes included measured blood loss, complications, procedure duration, postoperative pain and patient satisfaction.

RESULTS: We randomized 160 women to receive prophylactic oxytocin (n=82) or placebo (n=78). Demographic characteristics were similar between groups. The frequency of interventions for bleeding was 7.3% in the oxytocin group vs. 16.7% in the placebo group ($p=0.2$). Interventions primarily included uterine massage and uterotonic administration. Median measured intraoperative blood loss was significantly lower in the oxytocin group at 127.4 mL (range 28.0-629.6) vs. 246.2 mL (range 47.6-1657.3), $p<0.001$. Frequency of hemorrhage (≥ 500 mL) was also significantly lower in the oxytocin group (3.7% vs. 21.8%, $p=0.001$). Procedure duration was shorter in the oxytocin group at 11.9 +/- 5.2 minutes vs. 15.2 +/- 7.0 minutes, $p<0.001$. We found no significant differences in the frequency of complications, pain scores, or satisfaction scores between groups.

CONCLUSION: Prophylactic use of oxytocin during D&E at 18 to 24 weeks of gestation did not significantly affect the frequency of interventions to control bleeding, however oxytocin did appear to decrease blood loss and frequency of hemorrhage.

Oral presentation at the 2018 North American Forum in Family Planning, New Orleans, LA, October 20-22, 2018. *Selected as one of the top four oral abstract presentations to be presented in a special session.*

16. An Investigation on the Completeness of Salpingectomy Intended for Ovarian Cancer Risk Reduction

Wong J.W.H., Killeen J.L., Carney, M.E.

MEASURABLE LEARNING OBJECTIVE THE ABSTRACT: Review the theoretical benefits of prophylactic salpingectomy as a risk-reducing measure for ovarian cancer. How you will accomplish the above learning objective: By providing a review of the current literature and discussing the results of our study.



OBJECTIVES: To evaluate the completeness of salpingectomy intended for ovarian cancer risk reduction.

METHODS: Women without a history of ovarian cancer who were undergoing salpingoophorectomy were enrolled in this study. Salpingectomy was performed prior to oophorectomy. A blinded pathologist then examined the ovaries for the presence of residual salpingeal tissue. Data collected included type of surgery (minimally invasive or laparotomy) and level of surgeon (attending or resident). Data were analyzed using Pearson's Chi-Square test.

RESULTS: A total of 107 samples were examined among the 56 women enrolled. Only 6 ovaries (6%) had residual salpingeal tissue present after salpingectomy, which was statistically significant (p-value 4×10^{-20}). Of these 6 ovaries with residual salpingeal tissue, 3 ovaries (50%) were noted to be enlarged and inflamed, but there was no difference between level of surgeon (attending n=3/50 (6%), resident n=3/57 (5%), p-value 1.0) or type of surgery (minimally invasive n=5/49 (10%), laparotomy n=1/6 (10%), p-value 0.10).

CONCLUSIONS: Prophylactic salpingectomy has been heavily promoted based on the theory that serous tubal intraepithelial carcinoma is a precursor lesion for "serous ovarian carcinoma". However, the validity of prophylactic salpingectomy has yet to be proven through adequate research. This blinded study is the largest study ever conducted to examine ovaries for residual salpingeal tissue after salpingectomy. In addition, this is the only study to compare learner versus attending outcomes in this setting. This study supports the continued clinical practice of prophylactic salpingectomy for ovarian cancer risk reduction.

Poster presentation at 2019 Society of Gynecologic Oncology (SGO) Annual Meeting in Honolulu, HI, March 16-19, 2019.

17. Pregnant Women's Expectations of the Routine Obstetric Screening Ultrasound

Zhen S., Chern I., Elia J., Ahn H.J., Bartholomew M.L.

OBJECTIVES: To assess pregnant women's expectations and experiences during the routine obstetric screening ultrasound with respect to provision of keepsakes, sharing via social media, level of anxiety, and level of satisfaction.

METHODS: We recruited 210 women from Kapi'olani Medical Center for Women and Children in Honolulu, Hawaii. Adult women in their 2nd or 3rd trimester of pregnancy who were English-speaking, non-incarcerated, and scheduled for routine anatomy ultrasound were approached for inclusion. The women completed pre-ultrasound and post-ultrasound surveys querying demographic information and assessing the 4 areas noted in the primary objective. McNemar's Test was used to compare responses for 3 questions that were appropriate for pre and post comparisons.

RESULTS: Of the 210 total women, 14 were excluded. Reasons for exclusion included incomplete survey data (6), incorrect ultrasound type (5), age under 18 (2), and intrauterine fetal demise (1). The majority (63.5%) felt that checking baby's health was most important, followed by identifying baby's sex (32.0%), obtaining due date (4.1%), and getting keepsake photos (1.5%). Most women desired 3-D printed photos (52.8%), followed by 2-D photos (28.9%), computer disks (10.2%), and video recordings (7.1%). Approximately 24.4% shared information via social media during or immediately after the ultrasound. The majority of women (90.4%) wanted to know baby's sex before birth and 26.4% "absolutely" wanted to know baby's sex later at a gender reveal party or another gathering. Approximately 89.3% of women felt they understood the ultrasound pictures "absolutely" or "quite a lot". The general level of anxiety decreased significantly after the ultrasound ($p < 0.0001$). Overall, 84.8% of women were "absolutely satisfied" with the ultrasound experience.

CONCLUSIONS: There was a strong preference for 3-D photos, social media usage, and knowledge of the baby's health and sex during the routine obstetric ultrasound. Satisfaction with the experience was high and overall, anxiety decreased after the ultrasound.

Oral presentation at 2019 American Institute of Ultrasound in Medicine (AIUM) Convention in Orlando, Florida, April 7, 2019.

PAST RESEARCH DAY GUEST SPEAKERS

- 2018 **Dev Maulik, MD, PhD**, Senior Associate Dean of Women's Health, Professor & Chair, Department of Obstetrics and Gynecology, University of Kansas, Kansas City, Kansas, "*Fetal Growth Restriction: An Update.*"
- 2017 **Eve Espey, MD**, Professor and Chair, Department of Obstetrics and Gynecology, University of New Mexico, Albuquerque, New Mexico, "*Teen Pregnancy Options Counseling ... and Some Contraception Too!*"
- 2016 **Haywood L. Brown, MD, FACOG**, F. Bayward Charter Professor & Chair, Obstetrics and Gynecology Department/Division: Obstetrics/Gynecology/Maternal-Fetal Medicine, Duke University School of Medicine, Durham, North Carolina, "*The Obstetric Bundles.*"
- 2015 **Barbara S. Levy, MD**, Vice President for Health Policy, Advocacy Division at the American College of Obstetricians and Gynecologists (ACOG), Washington, DC, "*Vaginal Hysterectomy: Removing the Engine thru the Tailpipe.*"
- 2014 **Daniel M. Breitkopf, MD**, Associate Professor & Ob/Gyn Residency Program Director, Department of Obstetrics and Gynecology, Mayo Clinic, Rochester, Minnesota, "*Hysteroscopy and Abnormal Uterine Bleeding: What's New?*"
- 2013 **Aaron B. Caughey, MD, MPA, MPH, PhD**, Professor and Chair, Department of Obstetrics and Gynecology, Oregon Health & Science University, Portland, Oregon, "*The Cesarean Epidemic: Etiologies, Outcomes, & Potential Solutions.*"
- 2012 **Deborah A. Wing, MD**, Professor of Clinical Obstetrics and Gynecology, Director, Division of Maternal-Fetal Medicine and Director, Maternal-Fetal Medicine Fellowship, University of California, Irvine, "*Updates in Cervical Ripening and Labor Induction.*"
- 2011 **Andrew Berchuck, MD**, Director of Gynecologic Cancer Research, Professor of Gynecologic Oncology, Department of Obstetrics and Gynecology, and Co-Director, Duke Comprehensive Cancer Center Breast/Ovarian Cancer Program, Duke University Medical Center, Durham, North Carolina, "*Prospects for individualized Treatment and Prevention of Ovarian Cancer.*"
- 2010 **Leo R. Brancziao, MD, FACOG**, Vice Chair for Patient Safety & Quality and Associate Professor, Duke University Department of Obstetrics and Gynecology, Duke University Medical Center, Durham, North Carolina, Medical Director, Duke University Hospital Labor and Delivery, Durham, North Carolina, "*The Ideal Cesarean Section Rate.*"

PAST RESEARCH DAY AWARD RECIPIENTS

First Place Award

2018 **Meryl Ueno, MD**, *"Association between Second Trimester Maternal Serum Analytes and Gestational Diabetes"*

2017 **Charlie Wang, MD**, *"Utility of Routine Collection of Chlamydia and Gonorrhea in Antepartum Patients"*

Honorable Mention:

Nicole Kurata, MD, *"Prolonged Interpregnancy Interval: Essential Nullipara Again?"*

2016 **Sara C. Harris, MD**, *"Levonorgestrel Intrauterine Device Expulsion in Patients with Abnormal Uterine Bleeding"*

2015 **Melissa Kuwahara, MD**, *"Interpregnancy Interval and Subsequent Pregnancy Outcomes after Dilatation and Evaluation"*

2014 **Michelle Tsai, MD**, *"Oxidative Stress & Compensatory Anti-Inflammatory Mechanisms in the Placentas of Gravid Marijuana Smokers"*

Audience Choice Award

2018 **Meryl Ueno, MD**, *"Association between Second Trimester Maternal Serum Analytes and Gestational Diabetes"*

2017 **Charlie Wang, MD**, *"Utility of Routine Collection of Chlamydia and Gonorrhea in Antepartum Patients"*

2016 **Sara C. Harris, MD**, *"Levonorgestrel Intrauterine Device Expulsion in Patients with Abnormal Uterine Bleeding"*

P. Gordon McLemore, Jr, MD, *"Utilization of Abdominal Circumference (AC) Measurement in Fetal Biometry in the Late Second and Early Third Trimesters in the Prediction of Small for Gestational Age (SGA) Infants"*

2015 **Holly Bullock, MD**, *"Access to Ulipristal Acetate in Hawaii: Is a Prescription Enough?"*

2014 **Michelle Tsai, MD**, *"Oxidative Stress & Compensatory Anti-Inflammatory Mechanisms in the Placentas of Gravid Marijuana Smokers"*

2013 **Lynne Y. Saito-Tom, MD, MS**, *"Intrauterine Device Use in Overweight and Obese Women"*

Most Outstanding Award

2013 **Jaimie M. Johnson, MD**, *"Men's Attitudes, Beliefs & Roles in Pregnancy & Childbirth: An Ethnographic Study in Nepal"*

Scott A. Harvey, MD, MS, *"Choice of Effective Contraception Among Native Hawaiian Women"*



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