DEPARTMENT OF
OBSTETRICS/GYNECOLOGY

Annual
RESIDENT RESEARCH DAY

Visiting Professor:
Randall Kuhlmann, M.D., Ph.D.
Professor,
Chief of Maternal-Fetal Medicine,
Medical College of Wisconsin

Wednesday, May 29, 2013
8:00am – 12:00pm

Women & Children’s Hospital
Alford Auditorium
219 Bryant Street, 1st Floor
Buffalo, New York
## Resident Research Day Schedule

### Wednesday, May 29, 2013

**Moderator:** Glenna Bett, Ph.D.

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00am</td>
<td>Breakfast in the Alford Auditorium</td>
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<tr>
<td>8:10am</td>
<td>Opening Comments</td>
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<td><strong>Taechin Yu, M.D.</strong></td>
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<td>Residency Program Director</td>
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<td>8:15 – 8:25 a.m.</td>
<td>“Expression and serum immunoreactivity identify cancer/testis genes</td>
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<td>55 and 57 as immunotherapy targets in ovarian cancer”</td>
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<td><strong>Cici Liu, M.D.</strong></td>
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<td>Mentor: Kunle Odunsi, M.D., Ph.D.</td>
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<td>8:30 – 8:40 a.m.</td>
<td>“Influences of Breastfeeding in an Inner City Hospital (WCHOB)”</td>
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<td><strong>Bimbola Abodunrin, M.D.</strong></td>
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<td>Mentor: Faye Justicia-Linde, M.D.</td>
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<td>8:45 – 8:55 a.m.</td>
<td>“Teen Pregnancy: How can we decrease rates in our communities?”</td>
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<td><strong>Ryan Arnold, M.D.</strong></td>
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<td>Mentor: Shailini Singh, M.D.</td>
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<td>9:00 – 9:10 a.m.</td>
<td>“A Ten Year Retrospective Review of Emergent Cervical Cerclages”</td>
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<td><strong>Angelle A. D. Brebnor, M.D.</strong></td>
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<td>Mentors: Amol Lele, M.D. &amp; Faye Justicia-Linde, M.D.</td>
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<td>9:15 – 9:25 a.m.</td>
<td>“Increasing Medical Student Satisfaction through Resident-Student</td>
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<td>Guided Interaction”</td>
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<td><strong>Jordann Loehr, M.D., M.P.H.</strong></td>
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<td>9:30 – 9:45 a.m.</td>
<td>BREAK</td>
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<td>“Retrospective Antenatal Corticosteroid Time Study of WCHOB”</td>
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<td><strong>Anthony Muney, M.D.</strong></td>
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<td>Mentor: Beman Khulpateea, M.D.</td>
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<td>Training”</td>
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<td><strong>Rayme L. Shore, M.D.</strong></td>
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<td>Mentor: Kenneth Kahn, M.D.</td>
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<td>“IUD Discontinuation at Women and Children’s Hospital of Buffalo”</td>
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<td><strong>Jamie Szczepanski, M.D.</strong></td>
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<td>Mentor: Kenneth Kahn, M.D.</td>
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<td>10:45 – 11:00 a.m.</td>
<td>BREAK</td>
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<td>11:00 – 12:00 p.m.</td>
<td>“Thrombophilies and pregnancy. Are they important?”</td>
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<td><strong>Randall Kuhlmann, M.D., Ph.D.</strong></td>
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<tr>
<td>12:00 p.m.</td>
<td>Luncheon in the Ob/Gyn Classroom</td>
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ABSTRACTS

“Expression and serum immunoreactivity identify cancer/testis genes 55 and 57 as immunotherapy targets in ovarian cancer”

Cici Liu, M.D.
Mentor: Kunle Odunsi, M.D., Ph.D.

Background: Cancer/testis (CT) antigens are ideal cancer immunotherapy targets because they are expressed in cancer but not normal tissues except for adult male germ cells. In a phase II trial, vaccination with the CT antigen NY-ESO-1 improved survival in patients with epithelial ovarian cancer (EOC). The goal of this study is to test whether CT57 (ACTL8) and CT55 (CXorf48) are potential targets for immunotherapy. ACTL8 is similar in structure to actin and interacts with molecular chaperones and transcription regulators. CXorf48 has two RNA variants and may interact with the BRCA-2 gene in DNA repair and cell cycle regulation.

Methods: One-step reverse transcriptase PCR was performed with RNA from a panel of 14 normal and 91 EOC tissues obtained between 1994 and 2007. Specific primers were used to amplify a 260 bp product for ACTL8, a 432 bp product for CXorf48 variant 1 (V1) and a 337 bp product for CXorf48 variant 2 (V2). ELISA was performed on sera derived from an expanded panel of 241 EOC patients treated within the same period. Immunohistochemistry using a commercial rabbit polyclonal IgG antibody to ACTL8 was performed on 12 normal and 10 EOC tissues. Associations between antigen expression and covariates were assessed using the Wilcoxon Rank Sum and Pearson Chi-square tests. Kaplan-Meier analysis was used to model overall and progression-free survival (OS and PFS). Analysis was not performed for ACTL8 given the 97% expression frequency.

Results: ACTL8 mRNA was expressed in 96.7% of EOC patients while CXorf48 mRNA was expressed in 67% (V1 in 56% and V2 in 46.2%). The majority of patients had advanced stage disease, serous histology, and were optimally debulked. Both genes demonstrated restricted expression in normal tissues. Spontaneous antibody responses to ACTL8 and CXorf48 were detected in 6% and 10% of EOC patients, respectively. ACTL8 protein was detected in 100% of EOC and 25% of normal tissue, and was located predominantly in the cytoplasm. Expression of CXorf48 V1 did not alter survival outcomes. However, patients who expressed CXorf48 V2 had a significantly improved OS compared to those who did not (median survival 93 vs. 40 months, p= 0.0069).

Conclusions: Our results indicate that ACTL8 and CXorf48 have attributes of cancer/testis genes with restricted expression in normal tissues and a high frequency of expression in ovarian cancer at both the RNA and protein levels. Patients with CXorf48 V2 expressing tumors may also have improved overall survival. The high frequency of expression and evidence of spontaneous immunity to both antigens indicate that they are potential targets for ovarian cancer immunotherapy.
Objective: To evaluate the rates of breastfeeding in an inner city community and also evaluate the factors that influence the decision for breastfeeding vs bottle feeding for mothers.

Methods: Study was performed on women at a community hospital, Women and Children’s Hospital of Buffalo. Postpartum patients were given a survey to fill out during a visit to the hospital’s Women’s Clinic. Any patient who recently delivered a baby in the last 6 months was considered eligible for the study. All survey results were then compiled with the responses evaluated.

Results: According to the CDC Breastfeeding Report Card of 2012, the national rate of exclusive breastfeeding is about 36% at 3 months postpartum and the rate drops to about 16.3% at 6 months postpartum. In the state of New York, this rate is about 33% at 3 months and 15.3% at 6 months. Based on this information, we expect to see a similar trend in the patients studied in this research project. The remainder of the data for the results will be discussed during the presentation.

Conclusions: We expect to find a drop in the rate of breastfeeding from the time of hospital discharge till the time of postpartum follow-up. We plan to find out the major factors seen to influence the decision of breastfeeding vs bottle feeding based on patient survey responses.
Teen Pregnancy: How can we decrease rates in our communities?

Ryan Arnold, M.D.
Mentor: Shailini Singh, M.D.

Teen pregnancy has decreased in the last 20 years, but continues to be a problem in high risk populations and low socioeconomic groups. This study attempts to elucidate the sexual habits of a high risk population, providing real information to local healthcare providers as to when the best time for intervention may be.

Methods: This study was conducted using a short voluntary anonymous survey. The survey was conducted in the Women’s Health Center at the Women and Children’s Hospital in Buffalo, New York and in the Perinatal Center of Western New York. The survey was completely voluntary and included no identifying characteristics of the volunteers. The inclusion criteria for this study were any pregnant teenager between the ages of 13 and 19.

Results: A total of 30 surveys were completed. Three of the surveys were excluded due to age >20 years, leaving an n=27. The average age of the participants was 17.33 (SD = 1.39, range 15-19). The race of participants was 63% African American, 14.8% Caucasian, 18.5% Hispanic, and 3.7% selected Other.

Average age of menarche was 11.89 (SD = 1.89, range 9-15). Coitarche occurred at age 14.78 (SD = 1.15, range 13-17). Number of sexual partners varied greatly with an average of 4.30 (SD = 4.95, range 0-25). Of the 27 subjects only 3 (11.1%) reported purposeful attempts to conceive, all of whom were in the multipara group. The remaining 24 (88.9%) did not plan the pregnancy. Twenty three of the subjects were not using birth control at the time of conception, and only 4 subjects conceived while using contraception. Eighteen subjects had used birth control at some point in their life, while the remaining 9 subjects had never used any form of birth control.

Finally 44.4% (n=12) subjects reported they would have liked to have prevented the current pregnancy, while 55.6% (n=15) stated they would not.

Discussion: According to the American College of Obstetricians and Gynecologists (ACOG), teen pregnancy rates have fallen 38% during 1990-2007, yet internationally the U.S. continues to have one of the highest rates of teen pregnancy in the industrialized world. This study confirms that coitarche begins at roughly 14.78 years old. Using the average age of menarche found (11.89) in this study, the average amount of time that elapses between these two events is 2.89 years. This signifies a critical time for intervention.


“A Ten Year Retrospective Review of Emergent Cervical Cerclages”

Angelle Brebnor, M.D.
Mentors: Amol Lele, M.D. & Faye Justicia-Linde, M.D.

Objective: To evaluate the efficacy of emergent cervical cerclage placement for women who presented with unexpected dilated cervical os, shortened cervical length, funneling or bulging membranes that required an emergent cervical cerclage placement within 24 hours. The primary objective was to examine the length of time from cerclage placement to delivery of fetus. The secondary objective was to examine and elucidate the factors that affect maternal morbidity as well as neonatal morbidity and mortality thus evaluating the factors that determine a successful emergent cervical cerclage placement.

Methods: A single-center retrospective chart review from January 1, 2003 to December 31, 2012 for all pregnant women ages 18-55 who had emergent cervical cerclages placed at Women and Children’s Hospital of Buffalo was performed. Once CYIRB approval was granted, a request for charts was performed using CPT 59320 (vaginal cerclage placement) and CPT 59871 (vaginal cerclage removal). ICD-9 codes included: 761.0 (incompetent cervix), V23.4 (prior preterm delivery), 649.7 (cervical shortening), 67.0 (dilation of cervix), 67.59 (vaginal cerclage) and 67.51 (abdominal cerclage). Cerclages performed beyond 24 hours from time of discovery of aforementioned obstetrical problem and cerclages performed prophylactically were excluded. Data collection included: maternal age, gravidity & parity, ethnicity, maternal weight/BMI, clinical presentation (presence of cervical dilation, funneling, bulging membranes, uterine contractions, shortened cervical length), prior preterm birth, prior cervical surgery such as loop electrosurgical excision procedure (LEEP) or cone biopsy, prior induced or spontaneous first and second-trimester abortions, uterine anomalies, results of amniocentesis if performed, gestational age at time of cerclage placement, gestational age at time of delivery, reason for delivery, Single vs. multiple gestation, cervical dilation, length of cervix, type of cerclage placed, maternal morbidity, use of prophylactic antibiotics, length of maternal hospital stay, neonatal birth weight, length neonatal ICU hospital stay, neonatal morbidity, one-minute Apgar score, five-minute Apgar score, neonatal mortality.

Results: The primary objective was to determine the length of time from placement of cervical cerclage to delivery of the fetus. The secondary outcome was to examine and elucidate the factors that affect maternal morbidity as well as neonatal morbidity and mortality. Noncontinuous data will be analyzed using the chi square test and Fisher’s exact test; continuous data will be compared with either Student’s t test or Mann-Whitney U test.

Conclusion: The judicious selection of candidates for an emergent cervical cerclage can extend the length of time of the fetus in utero without incurring significant maternal and neonatal morbidity and mortality.
Increasing Medical Student Satisfaction through Resident-Student Guided Interaction

Jordann Loehr, M.D., M.P.H.
Mentor: Faye Justicia-Linde, M.D.

Objective: The third year medical students (MS3) at the University of Buffalo have historically expressed dissatisfaction with their OB/GYN clerkship experience. Using management and education data and theories we hypothesized that medical student satisfaction can be increased by increasing the resident guided educational and informal interactions.

Methods: An intervention tool was developed to increase resident-student interaction. This tool is similar to the “sign-off” sheet that the students have been required to carry to ensure their participation in surgeries and clinic activities, thus allowing it to be easily assimilated. The intervention tool is signed by residents after informally discussing one of the listed 31 core OB/GYN topics listed.

The medical student satisfaction surveys that have been completed at the end of each clerkship period prior and post intervention will be compared. Our primary outcome is an increase in medical student satisfaction scores – measured both quantitatively as well as qualitatively. Secondary outcomes include an increase in medical student shelf exam scores and ultimately an increase in the University of Buffalo medical students entering OB/GYN.

Results: Data is to be compared both quantitatively and qualitatively, using standard statistical and social science methodologies. At this point, mid-study, we anticipate minimal statistical difference in the quantitative analysis due to low numbers. Anticipate qualitative analysis revealing improved satisfaction with the rotation.

Conclusions: Increasing resident-student interaction is a major culture change that can yield increased satisfaction of the third year medical students in OB/GYN. We are making progress towards that behavior change, but a good deal of work remains to be done.
Objective: The administration of antenatal corticosteroids (betamethasone) to pregnant women at risk of preterm delivery is arguably the most significant intervention in the field of obstetrics to date. Multiple studies have shown that a course of betamethasone significantly reduces the risk of RDS, IVH, NEC, and neonatal mortality. It is well established in the literature that the maximal benefit of betamethasone occurs after 48 hours of the first dose.

In addition, we know that drug concentrations in cord blood are approximately 20 percent of maternal levels one hour following injection. This further suggests that expeditious delivery of betamethasone is crucial. Currently at WCHOB, betamethasone is stored in the pharmacy department and not on L&D where it is readily accessible to the patients that need it. L&D nurses and physicians have noticed significant time delay from when the order is written, to when it is administered. A simple solution to this problem is to store betamethasone on L&D. I hope that this study is able to quantify the average time delay to support the obvious solution.

Methods: The medical records and electronic medical records at WCHOB was queried for patients who received betamethasone on labor and delivery in the past 6 months from October 2012 to March 2013. The average time that elapsed when betamethasone was ordered to when it was administered was calculated. A one sample t-test was performed comparing time ordered and time administered to a 20 minute cutoff.

Results: I anticipate my results to reflect the average time for betamethasone administration to be between 45 minute to 1.5 hours compared to the 20 minute cutoff.

Conclusion: If my results reflect that average time than my hypothesis will proven to be true which states that there is a significant time delay from time ordered to time administered of betamethasone on L&D at WCHOB. Hopefully these results will lead to changes on L&D to have betamethasone available on the floor which in turn will lead to better patient care.
“Physician Opinions Regarding TOLAC/VBAC”

Jessica Shields, D.O.
Mentor: Kenneth Kahn, M.D.

**Background:** The rate of cesarean sections has steadily increased for many years, from 5% in 1970 to greater than 32% in 2009; in Wester New York (WNY) the rate is 35%; while a concurrent decline in vaginal birth after cesarean (VBAC) has been observed. A significant portion of this increase in C-Sections is due to a higher rate of primary cesarean sections for nonrecurring indications, such as nonreassuring fetal heart rates and breech position. The opportunity for VBAC has increased, but is not reflected in delivery outcomes. C-Sections are a major surgery and therefore carry all the associated risks of abdominal surgery. A patient is more likely to suffer a complication from repeated C-Sections than from a VBAC. The aim of this study was to determine the opinion of physicians in WNY regarding VBAC and to hopefully identify modifiable factors that have contributed to the decline.

**Methods:** ObGyn physicians in WNY were recruited via postal mail. Physicians were identified through participation in the WNY ObGyn Society and through Blue Cross Blue Shields of WNY. They were asked to complete a 2 page questionnaire. The questionnaire included demographic information, opinion statements, and questions regarding their personal obstetrical practice.

**Results/Conclusions:** Preliminary review of the data revealed that physicians differ the most in their opinions regarding VBAC with less variations in their clinical practices. Final data analysis is currently under progress, but questions that will be answered include and are not limited to: do physicians feel patient preference is a driving force in VBAC decline; do physicians that believe physicians have a cavalier attitude towards C-Section also think that the majority of patients that attempt TOLAC will fail; do physicians that believe that patients do not understand the risks associated with VBAC understand the risks themselves.
**Resident Perceptions of Robotic Surgery During OB/Gyn Residency Training**

**Rayme Shore, M.D.**  
Mentor: Kenneth Kahn, M.D.

**Objective:** To assess OB/Gyn resident physicians’ opinions about robotic surgery, its impact on residency training, and whether they plan to utilize this modality in their own practice.

**Methods:** A 23 question online survey was emailed to 233 program contacts to be distributed to their OB/Gyn residents. Contacts were publicly available and obtained through the American Medical Association FREIDA website. There were a total of 202 responses to the survey.

**Results:** Robotic surgery was widely available to these residents, with only 3% of respondents reporting no robotic experience at all. Respondents felt laparoscopic, open, and vaginal case numbers and training experience are being affected by robotic surgery. 15.3% were enrolled in a formal robotic surgery training program and 45% were enrolled in an internal training program with 31.2% believing training goals were met. 22.2% reported no training is available to them. Few residents, 22.8%, feel experienced in advanced robotic surgery tasks such as tissue dissection involving cautery. A majority, 74.1%, experience boredom or loss of concentration during robotic procedures. Still, 64.3% of survey respondents plan on utilizing robotic assisted surgery in their practice after graduating.

**Conclusion:** Robotic assisted surgery is perceived by OB/Gyn resident physicians to affect residency training and case numbers. Though this relatively new technology is widely available, consistent and effective resident training is not. A standardized curriculum may prove beneficial to ensure that residents receive appropriate instruction with safeguards in place to allow for adequate training in all surgical modalities.
Objective: Intrauterine devices (IUDs) are the most common method of contraception used worldwide, and their use in the United States has increased in recent years. IUDs offer effective and convenient contraception with few contraindications to use and a quick return to fertility after removal. Despite these benefits, patients may choose to have their IUD removed. The purpose of this study is to determine the common reasons for IUD discontinuation in our clinic population. If complaints relate to known side effects of the devices, improved pre-insertion counseling may allow patients to make a more informed decision regarding contraception.

Methods: A retrospective chart review was conducted, in which ICD-9 and CPT codes for IUD removal were used to identify patients who had their IUD removed during the time period from January 2010 until December 2012. Electronic medical records, clinic notes, and operative reports were used to determine the reason for IUD removal.

Results: A total of 93 patients met inclusion criteria, and were categorized based on reasons for removal. Categories included pain, bleeding, pain and bleeding, desired fertility, undesired future fertility, pregnancy, infection, expiration of device, misplaced device, miscellaneous, and unidentified reasons. Most common reasons for discontinuation of IUDs were pain, expiration of device, and unacceptable vaginal bleeding. Eight out of thirteen patients with an expired IUD elected to have another device placed at the time of removal.

Conclusions: Many patients in our clinic population kept their IUD for the full duration of its use. The most prevalent complaints leading to IUD removal were related to bleeding or pain, which are known side effects of the devices. Counseling patients more thoroughly on the nature and expected duration of side effects may allow them to select a method of contraception that is more acceptable to them, or may offer reassurance when they experience such side effects.
Residency Program

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Breakfast and Lunch provided by
The University at Buffalo, Dept. Ob/Gyn