



OB-GYN Special Delivery

❖ News for Alumni and Friends

UF UNIVERSITY of FLORIDA

College of Medicine
Obstetrics and Gynecology

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Dr. Dikea Roussos-Ross Awarded CenteringPregnancy Grant

Dr. Dikea Roussos-Ross, Director of Women's Health at the Medical Plaza and Assistant Professor, was recently awarded a grant for \$25,000 to initiate a CenteringPregnancy (CP) program. There are currently no CP programs in our area, and, thus, we are the first to bring this concept to North Central Florida and to UF Health.

CenteringPregnancy (CP) is a multifaceted model of group care that integrates the three major components of care - health assessment, education, and support - into a unified program within a group setting. Eight to 12 women with similar gestation-

al ages meet in group sessions, with the purpose of learning care skills, participating in a facilitated discussion, and, in the process, developing a support network with group members. Each group meets for 10-12 sessions throughout pregnancy and early postpartum. The practitioner, within the group space, completes standard physical health assessments.

The CenteringPregnancy literature (centeringpregnancy.org) shows improved fetal outcomes, such as decreased preterm delivery for women in centering groups, as well as improved patient satisfaction and compliance with prenatal care, increased

breastfeeding rates, and improved knowledge and readiness for birth and parenting.

Dr. Roussos-Ross will be the Medical Director of the Centering Program. In addition to overseeing the CP Program at UF Health, she will participate in CP group sessions. The first CP training groups will be held February 20-21, 2015, and will include MDs, ARNPs, nurses, and clerical personnel.



Dikea (Kay) Roussos-Ross, M.D.

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**OB-GYN Alumni Society/
Graduation Weekend**
Gainesville, Florida
June 26-27 2015

SAVE THE DATES !



R. Stan Williams, M.D.

❖ Notes from the Chair

Our Department continues to thrive in all of its three core missions, education, research and clinical care. This newsletter focuses on some of the research that our faculty are performing, but by no means is this a complete list of current activities.

In the area of education, we recently completed our interviews for residency positions, and I must tell you this was the most highly qualified group of applicants that I have seen, from top to bottom. In the past, we have had highly qualified applicants for the top 20-25 positions, but this year almost the entire interview pool had outstanding academic records, Step 1 & 2 scores, honors such as AOA and research experience. We also continue to have twice the national average of UF students choosing to go into ObGyn, which I think is a reflection on the teaching they experience during their third year ObGyn clerkship.

Clinically, our Department has twice the case mix index (acuity) of any ObGyn department in the State of Florida, including Miami and Tampa. Providing care for these very ill Ob and Gyn patients is a challenge, but it provides an outstanding teaching environment for residents and students. We will be expanding the MFM Division faculty next year in

order to expand our services in surrounding communities and to provide more expertise for the care of these high acuity patients. Dr. Stone will be fully retiring this spring after working part time for the past couple of years. We will be hiring another generalist to help fill the coverage needs (we can't "replace" Dr. Stone!). We were again selected by US News and World Report as one of the Best ObGyn Departments nationally. A significant part of future rankings will depend on rankings of departments by members of Doximity.com, so be sure you are a member and remember each year to vote for our UF ObGyn Department.

This summer, we are going to have Resident Research Day on Friday June 19, 2015 and the following weekend have our ObGyn Alumni Society reception on Friday June 26, the Alumni CME meeting Saturday morning June 27, and the Resident and Fellow Graduation and Alumni Dinner Saturday evening. This year there will be no charge to attend the reception, the Alumni meeting or the dinner. We will be sending out registration information in the spring. Please RSVP which events you plan to attend. I am hoping for a large turnout this year. Plan to return and meet your old friends, make new friends and support the Department!

R. Stan Williams, M.D.

Harry Prystowsky Professor of Reproductive Medicine
Chair, Department of Obstetrics and Gynecology



❖ **New methods to answer old questions: Exploring the immunology of healthy and pre-eclamptic pregnancies**

Eclampsia was described by Hippocrates as early as 400BC and the premonitory syndrome of pre-eclampsia has been appreciated since the 1800s. However, despite tremendous advances in the understanding of the pathologic features and manifestations, this disease continues to affect 1 in 20 pregnancies, cause 1 in 5 pre-term births and lead to more than 10,000 infant deaths per year. It is also the cause of 10-15% of maternal mortality. Generations of providers have been perplexed by its chosen victims – what does a young woman in her first pregnancy have in common with an older woman with co-morbid conditions like hypertension? Yet these are two classic clinical scenarios for pre-eclampsia.

An equally perplexing question is: why does pregnancy ever proceed safely? Dr. Peter Medawar was rewarded the Nobel Prize in 1960 for his work on the topic of immunological tolerance. He identified pregnancy as a paradox – the mother's immune system should identify the conceptus as foreign and yet usually the mother's body accepts the pregnancy and carries it to term. This is a demonstration of one of the most important immune functions. The immune system not only has to recognize its own cells and tolerate them, but it must also determine which foreign cells are not dangerous and thus not waste resources or cause harm destroying them. This is a fascinating and rapidly evolving arena in science today, with aberrant responses to benign antigens encountered in the gut being implicated in a number of auto immune diseases as well as the increasing understanding of the symbiotic nature of much of our body's flora.

Thus, the mother's immune system must identify the conceptus as a foreign but non-dangerous entity in order to maintain a tolerant immune constitution compatible with healthy pregnancy. There has been a recent explosion of work in this area and peripheral and local immune changes have been described prior to as well as after disease manifestation that reflect a loss of conceptus tolerance and a transition to a state that has many similar characteristics to autoimmune disease and organ transplant rejection. These conditions also have diverse phenotypes, another characteristic of pre-eclampsia that has always perplexed the medical community. The development of tolerance is extremely multi-factorial, which explains what a nulliparous patient (with limited exposure to paternal antigens predisposing to decreased tolerance) and an older

patient with more-co-morbidities (overall less healthy immune system) do have in common. They are both predisposed to inadequate conceptus tolerance and, ultimately, pre-eclampsia, but the complex nature of immune tolerance can also explain why only some of these patients develop disease.

Third year Maternal Fetal Medicine fellow, Dr. Kathryn Davidson, within the autoimmunity lab of Dr. Todd Brusko has been exploring the immune constitution of healthy and pre-eclamptic pregnancies. Using decidual tissue harvested from delivered placentas, they have characterized CD226 and TIGIT, two T-cell lymphocyte receptor co-stimulatory markers that play a role in autoimmune diseases as well as response to tumors, and are exploring the ways their expression may differ between pre-eclamptic and healthy patients. They are also attempting to more broadly describe the immune environment with RNA expression analysis. Their data will hopefully further explain how this breakdown in immune tolerance leads to the broad phenotypic manifestations of pre-eclampsia and lead to viable prevention and treatment strategies. The use of antigen-specific regulatory T cells to treat and even prevent autoimmune diseases previously thought of as incurable is rapidly transitioning from science fiction to reality – perhaps pre-eclampsia is the next frontier.

Kathryn D. Davidson, M.D.
Fellow—PGY7
Maternal-Fetal Medicine

Hsu P, Nanan RK. Innate and adaptive immune interactions at the fetal-maternal interface in healthy human pregnancy and pre-eclampsia. *Front Immunol* 2014;5:125.

Jiang TT, Chaturvedi V, Ertelt JM, Kinder JM, Clark DR, Valent AM, et al. Regulatory T cells: new keys for further unlocking the enigma of fetal tolerance and pregnancy complications. *J Immunol* 2014 Jun;192(11):4949-56.

Miyara M, Ito Y, Sakaguchi S. TREG-cell therapies for autoimmune rheumatic diseases. *Nat Rev Rheumatol* 2014 Sep;10(9):543-51.

❖ **Resident News**

The department completed a very successful residency recruitment season in early January. The Electronic Residency Application Service (ERAS) opened on September 15, 2014, and by November 1st we received 388 applications for the four internship positions beginning in June 2015. Ultimately, we met 56 talented and enthusiastic candidates over the course of seven interview days. Our well-rounded interview team included: Drs. Stan Williams, John Davis, Shireen Madani, Erich Wyckoff, Kathryn Davidson, and resident member Kathryn Stinson.

The interview process starts with a dinner at one of the residents' homes, with residents and applicants meeting each other in an informal setting. On interview day, they have a general presentation about the Department from Mary Latham, Residency Coordinator, and individual interviews with each committee member.

This year we broadened the scope of departmental involvement in the recruiting process by encouraging available faculty members and fellows to join applicants and residents during lunch. Recruitment concludes with Match Day 2015, which will be Friday, March 20th. Watch our website for the announcement regarding our next class of residents!



❖ New Treatment Option for Women with Polycystic Ovarian Syndrome (PCOS) and Infertility

A fertility drug which has been used for more than four decades (Clomiphene Citrate) may soon be replaced with another drug (Letrozole), which was shown to be 30 percent more effective in helping women with PCOS become pregnant, according to a recent study published in the *New England Journal of Medicine* with strong University of Florida ties (Letrozole versus clomiphene for infertility in the polycystic ovary syndrome. *N Engl J Med.* 371(2):119-29, 2014). In this study, researchers at seven different academic centers recruited 750 couples to compare the long-used fertility drug clomiphene citrate, commonly called Clomid, to Letrozole, a drug initially developed to prevent recurrence of breast cancer in women. Of the 376 women who were given Clomid, 72 became pregnant and gave birth. Of the 374 women who took Letrozole, 103 gave birth. "Letrozole works better, has about the same cost, has fewer side effects and has a slightly lower twin rate than Clomid," according to Gregory M Christman, M.D., Director of the Division of Reproductive Endocrinology and Infertility at the University of Florida. "Clomid has been available for fertility treatment for more than 40 years, but with this new information, we may soon have to reconsider its role in the treatment of infertility due to anovulation in women with polycystic ovarian disorder."

Clomid is often prescribed to women with polycystic ovary syndrome as the very first step in their treatment — and this population of women accounts for about a third of women who seek fertility treatment. About 1 in 20 women of childbearing age have this disorder, according to the Office of Women's Health within the U.S. Department of Health and Human Services. Women with this condition typically have fewer periods — seven cycles per year or fewer — and therefore have fewer opportunities to become pregnant.

Dr. Christman oversaw one of the trial's seven sites as the principal investigator at the University of Michigan. There, he recruited 75 of the 750 couples for the study. Women in the study, were an average of 29 years old, and were randomly assigned to take either Clomid or Letrozole. Because the drugs were administered in the very same way — both were given for a five-day period at the beginning of a woman's cycle — the study was double-blinded. Neither the doctors nor the patients knew which drug they were receiving. Clomid works by traveling to the brain, where it partially blocks the estrogen receptor. This triggers the brain to send a signal to the ovaries to produce more estrogen, which causes ovulation. Letrozole is FDA approved to be prescribed to prevent the recurrence of breast cancer in women by shutting off an enzyme that converts circulating testosterone to estrogen. It works primarily in fat or adipose tissue throughout the body, causing estrogen levels in a woman's bloodstream to fall. The brain sees this drop in estrogen and tells the ovaries to make more estrogen, which triggers ovulation. The study also found that Letrozole results in fewer twins. Approximately 10 percent of women who are treated with Clomid give birth to twins. The rate dropped to between 3 to 4 percent in women who took Letrozole. "It always makes you smile when you hear someone is expecting twins, but because of the recognized increased risks of a multiple pregnancy it is always better and safer if people conceive one baby at a time," according to Dr. Christman.

David S. Guzik, M.D., Ph.D., UF Senior Vice President for Health Affairs and President of UF Health, helped oversee the study, which was conducted through the Reproductive Medicine Trial Network,

funded by the National Institute of Child Health and Human Development branch of the National Institutes of Health. The network is now in its fourth cycle, with each cycle consisting of five years. Guzik was involved in the network's first cycle as a principal investigator, and during this fourth cycle he chaired the advisory board that oversaw the conduct of new reproductive medicine clinical trials. "This study indicates that there is a safe and effective alternative medical treatment to help infertility patients with polycystic ovarian syndrome, which is one of the most common conditions causing infertility," Guzik said. Generic versions of both medications are now available, making treatment with either drug very affordable.

Gregory M. Christman, M.D.
Professor, Director of Division of
Reproductive Endocrinology and Infertility

❖ Research Updates for Drs. Monique Ho, Daniel Gibson and Greg Schultz

Predicting preeclampsia remains an important challenge in the field of maternal-fetal medicine. A major research focus for Dr. Monique Ho is to develop better diagnostic tools to aid in predicting preeclampsia. In 2014, Dr. Ho established a research collaboration with Dr. Tammy Euliano, Associate Professor of Anesthesiology, using Dr. Euliano's non-invasive maternal monitoring device to predict preeclampsia. Subject enrollment and sample collection is currently ongoing. In another area of research, Dr. Ho has applied for project development funds from Cook Medical Co. to produce a new simulation experience for invasive OB procedures such as amniocentesis and fetal bladder shunts. Dr. Ho has also initiated a collaboration with Dr. Gibson and Dr. Schultz to adapt their rapid, point-of-care, detector technology to measure levels of IL-6 in vaginal fluid after PROM to help predict the probability of preterm delivery.

Dr. Gibson and Dr. Schultz continue their basic research on molecular and cellular regulation of wound healing, while translating that basic knowledge into innovative therapies to reduce scarring of acute wounds and to promote healing of chronic wounds. In 2014, Dr. Gibson was awarded a Florida High Tech Corridor Council (FHTCC) matching funds grant, which will match funds awarded by Sentinel Diagnostics, Inc., to develop and assess diagnostic software that was developed by faculty in the University of Florida's Department of Mechanical Engineering. The first clinical trial of the diagnostic software technology is currently underway and will continue through 2015.

Dr. Schultz recently received funding for year 26 of his grant from the National Eye Institute to further investigate the role of connective tissue growth factor (CTGF) in corneal scarring. Dr. Gibson and Dr. Schultz also received funding from multiple medical device and drug companies to conduct basic research on new wound dressings and wound care devices, including four clinical studies assessing effects of dressings and devices on bacterial biofilms in chronic wounds. Dr. Gibson and Dr. Schultz published 12 peer-reviewed papers in leading journals and 9 book chapters in 2014, and also were awarded two US Patents on key diagnostic technologies and methods to effectively deliver macromolecular drugs into tissues.



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June 26-27 2015

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Associate Professor Focuses on HPV Research



Dr. Lisa Beth
Spiryda, M.D.,
PhD.

In addition to her busy clinical practice, Lisa Beth Spiryda MD, PhD has an active research program involving translational, basic science and clinical research studies. Since joining the faculty at UF in August 2013, Dr. Spiryda has published 7 manuscripts and over 10 abstracts. Dr. Spiryda is the PI on two extramural grants from the National Institute of Health/National Cancer Institute and American College of Obstetrics and Gynecology/Hologic. Her translational and basic science laboratory focuses on examining molecular biomarkers involved with Human Papillomavirus, cervical dysplasia and cancer.

She is interested in developing molecular strategies that may better identify women at the highest risk for progression from the premalignant stage to invasive disease and improve screening modalities and decrease health disparities in cervical cancer. She is also interested in the development of treatment protocols that are directed towards the virus and do not involve excision. Current ongoing projects in the laboratory are examining the role of cellular adhesion and immunomodulation in acquisition of HPV and development of cervical dysplasia/cancer. The model systems developed in her laboratory have the potential to be extended to other HPV-mediated cancers. This past year, Soo Jung Seo, PhD has joined Dr. Spiryda's laboratory as a Research Associate. She has also begun collaborating with D. Rush, MD from the UF Health Department of Pathology.

Dr. Spiryda is involved with multiple clinical and epidemiological studies involving Women's Health. She has completed studies that have led to publications in health disparities and routes of hysterectomy, patient attitudes and health disparities in breast feeding, contraceptive choices in women with thrombophilias, and Outcomes of the Cervix Project: Modalities Increasing Knowledge, Attitudes, and Practices of Undergraduates Regarding HPV screening and vaccination against HPV.

Lastly, Dr. Spiryda has a long history of research mentoring students on all levels (undergraduate, nursing, medical, masters, residents) and has mentored over 40 students/residents. At UF, she has continued this commitment of mentoring in research. Ongoing projects with medical students and residents include: Obesity, Weight Gain and Neonatal Outcomes (Schneider, MS II); Factors Influencing Longevity of Breastfeeding (O'Shea, MD, PGY-2); HPV and Pregnancy Outcomes (Greer J, MD, PGY-2); Pregnancy and Hepatitis C (Gabrilovich S, MS IV); and Emergency Contraception (Plan B): Where Are We Now? Knowledge Base, Misconceptions of Health Care Professionals (Kane A, MD, PGY-3).

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