IRHRM External Scientific Advisory Board (ESAB) Visit

On Thursday and Friday, April 19-20, the IRHRM External Scientific Advisory Board Members visited the University of Kansas Medical Center to learn more about the IRHRM and provide suggestions for improvements and recommendations for future directions. The visit began Thursday afternoon with a meeting of the ESAB and the IRHRM Executive Research Board, followed by a poster session and reception.

On Friday, the three Centers within the IRHRM presented research overviews and plans for the future to the ESAB, including plans for core creation and expansion.

The IRHRM ESAB includes the following faculty: Marisa S. Bartolomei, PhD (IRHRM ESAB Chair), Professor of Cell and Developmental Biology at the University of Pennsylvania School of Medicine; C. Anthony Blau, MD, Professor in the Division of Hematology, Department of Medicine and Adjunct Professor in the Department of Genome Sciences at the University of Washington; Martin M. Matzuk, MD, PhD, Stuart A. Wallace Chair and Professor of Pathology and Immunology at Baylor College of Medicine and Director of Clinical Chemistry at Ben Taub General Hospital; Bryan Richardson, MD, FRCSC, Professor and Chair, Department of Obstetrics and Gynaecology, Professor, Departments of Physiology/Pharmacology and Pediatrics, Canada Research Chair, Tier 1 Fetal and Neonatal Health and Development, Schulich School of Medicine and Dentistry, University of Western Ontario, London, Ontario, Canada; and

Continued on page 2
IRHRM ESAB Visit (continued from page 1)

Yoel Sadovsky, MD, Director, Magee-Womens Research Institute, Elsie Hilliard Hillman Chair of Women’s Health Research, Professor of OB/GYN, Microbiology and Molecular Genetics, and Clinical and Translational Science, Department of OB/GYN and Reproductive Sciences, University of Pittsburgh.

The ESAB provided an insightfully written formal evaluation to the Executive Vice Chancellor of the University of Kansas Medical Center, identifying areas for expansion and improvement. A summary of their observations and recommendations is below.

ESAB EVALUATION HIGHLIGHTS

* IRHRM leadership - congratulations on having the vision to develop a program that aims to enhance and develop synergies across established areas of institutional strength.

* Transdisciplinary nature of IRHRM and its clear commitment to enhancing collaboration represent significant strengths.

* Encourage participation of new members with similar research interests.

* Impressive content of research, broad spectrum of talents and diversity within each center as seen during poster session and presentations.

* Website, chalk talks, seminar program, retreats, lectureships, symposia and newsletter are very positive and promote communication and knowledge. Branding/marketing of IRHRM needs improvement, including creation of an IRHRM logo.

* Need to work toward more multi-PI/multi-IRHRM-member authorship on publications.

* Future plans for cores and programs are well founded and need further development, such as business plans, strategic plans, etc. (stem cell core, graduate training program, community advisory board, etc.).

* Need solid, formal institutional commitment from KUMC administration regarding financial support of the IRHRM and priority level (possible goal that within the next 1-2 years, IRHRM cited as KUMC’s 3rd research priority -- behind cancer and neurobiology).

* Need to develop strategic plan for identifying funding sources, and need open access to fundraising efforts through KU Endowment.

* Delineate/create/strengthen ties to clinical departments for mutual benefit.
**New Clues in Research about Autism**

A KU Medical Center study found significantly lower levels of several cytokines, the immune system’s messengers and regulators, in the plasma of children with autism disorder compared to that of unrelated healthy siblings from other families who had members with autism spectrum disorders. The study was published in the April 2012 International Journal of Developmental Neuroscience by two IRHRM members, Ann Manzardo, PhD, and Merlin G. Butler, MD, PhD, FFACMG. The immune system and genetic factors have both been implicated in the biological basis for autism, said Butler, Professor of Psychiatry and Pediatrics. Read the full article at [http://www.news.ku.edu/2012/april/16/autism.shtml](http://www.news.ku.edu/2012/april/16/autism.shtml)

**National Infertility Awareness Week**

Sacha Krieg, MD, PhD, FACOG made a guest appearance on local Fox News affiliate

Gone are the days when women should feel ashamed of their infertility. Sacha Krieg, women’s health specialist at KU Hospital, explained the ways couples can still pursue having a family. Watch the interview at [http://fox4kc.com/2012/04/26/national-infertility-awareness-week/](http://fox4kc.com/2012/04/26/national-infertility-awareness-week/)

**Ovarian grafts can produce hormones for more than 7 years**

Transplanting previously frozen ovarian tissue back into female cancer survivors can lead to long-term hormonal function and preservation of fertility, according to a new study by S. Samuel Kim, MD, FACOG. His work, “which shows that hormonal function was restored in five women 12-20 weeks after transplantation, and in one case lasted for more than seven years, appears online in the Journal of Assisted Reproduction and Genetics”, published by Springer. Read the full article at [http://www.news-medical.net/news/20120629/Ovarian-grafts-can-produce-hormones-for-more-than-7-years.aspx](http://www.news-medical.net/news/20120629/Ovarian-grafts-can-produce-hormones-for-more-than-7-years.aspx). Published on June 29, 2012 at 4:54 AM

Continued on page 4
Woman is first in area to become pregnant with frozen egg

Frozen eggs offer the hope of future pregnancies to several groups of women, said Dickson’s fertility doctor, S. Samuel Kim, MD, FACOG, of the University of Kansas Medical Center. Read the full story at http://www.kumc.edu/Documents/irhrm/woman-becomes-first-in-area-to.pdf

Researchers discover how the first two groups of cells form in a developing organism

Last year, Soumen Paul, PhD, published an important discovery: how to grow pluripotent stem cells in the laboratory while keeping them from spontaneously differentiating into random types of cells. By suppressing protein kinase C signaling, scientists can purposefully direct pluripotent stem cells toward becoming specific cell types — a necessary move if they are to be useful in regenerative medicine. Read the full article at http://www.kumc.edu/news-listing-page/soumen-paul-and-pratik-home-in-the-proceedings-of-the-national-academy-of-sciences.html

KU engineering professor researching gel to hinder spread of HIV

Assistant Professor Sarah Kieweg, PhD, at the University of Kansas School of Engineering is working with a team of researchers to develop new treatments to prevent the spread of HIV to women. Kieweg received a $1.3 million grant from the National Institutes of Health to expand her research into developing a gel for sexually active women that can boost protection from the virus. Kieweg’s team is using computer modeling and other methods to create an instrument to assist in predicting how the gels will move in an effort to make the microbicidal substance as effective as possible. The gel also is designed to offer protection against more than just HIV. Read the full article at http://www.news.ku.edu/2011/october/7/nihgrant.shtml
Some Recent Publications


<table>
<thead>
<tr>
<th>PI: Warren Nothnick, PhD</th>
<th>PI: Tomoo Iwakuma, MD, PhD</th>
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<tbody>
<tr>
<td>NIH R01 HD069043-01A1</td>
<td>NIH 1P30RR030926 COBRE CCET</td>
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<tr>
<td>“The Role of miR-451 in endometriosis pathophysiology and treatment”</td>
<td>Pilot Project Competition</td>
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<td>3/6/2012 - 1/31/2017</td>
<td>“Discovering Drugs That Induce Degradation of Oncogenic Mutant p53”</td>
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<td>6/1/2012 – 5/30/2014</td>
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<td>PI: M.A. Karim Rumi, MD, PhD</td>
<td>PI: Michael J. Soares, PhD</td>
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<td>NIH R03 HS072100-01</td>
<td>NIH R21-HD066406</td>
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<tr>
<td>“Role of SATB in placental development”</td>
<td>“Dissecting Uterine Progesterone Resistance”</td>
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<tr>
<td>PI: Partrick Fields, PhD</td>
<td>PI: Michael J. Soares, PhD</td>
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<tr>
<td>1 R01 DK091277-01A1</td>
<td>NIH R01-HD20676</td>
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<td>“The Role of the Histone Methyltransferase DOT1L in Erythropoiesis”</td>
<td>“Trophoblast Differentiation”</td>
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<td>4/15/2012-3/31/2017</td>
<td>7/16/2012 – 4/30/2017</td>
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<tr>
<td>PI: Jinxi Wang, MD, PhD</td>
<td>PI: Dev Karan, PhD</td>
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<tr>
<td>DoD PR110741</td>
<td>NIH/NCI-R21 1R21CA169453-01</td>
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<tr>
<td>“Deficiency of NFAT1 Transcription Factor and Post-Traumatic Osteoarthritis”</td>
<td>“Modulation of NK cell activity by dietary product for prostate cancer prevention”</td>
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<tr>
<td>8/1/2012 – 7/31/2015</td>
<td>7/1/2012 – 6/30/2014</td>
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<tr>
<td>PI: Jinxi Wang, MD, PhD (Subcontract; Overall PI: Cory Berkland)</td>
<td>PI: Dev Karan, PhD</td>
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<tr>
<td>NIH/NIDCR R01 DE022472</td>
<td>KUMC Research Institute, Clinical Pilot Program</td>
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<tr>
<td>“Integrative Colloidal Gels for Cranial Defect Repair”</td>
<td>“Assessment of immunotherapeutic response using novel bio-molecular approach”</td>
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<tr>
<td>PI: Tomoo Iwakuma, MD, PhD</td>
<td>PI: Merlin G. Butler, MD, PhD, FFACMG</td>
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<tr>
<td>ACS RSG-09-169-01-CSM</td>
<td>KUMC Clinical Pilot Research Grant Program</td>
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<tr>
<td>(Supplement)</td>
<td>“An Approach to Target X-Chromosome Genes in Females with Autism”</td>
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<tr>
<td>“Uncovering the mechanisms of osteosarcoma metastasis suppression by MTBP”</td>
<td>2012</td>
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New Grant Awards (continued from page 6)

Co-PIs: John Colombo, PhD and Susan Carlson, PhD
Co-Is: Kathleen Gustafson and Byron Gajewski
Eunice Shriver National Institute for Child Health and Human Development
R01 HD047315
“DHA supplementation and pregnancy outcome”
2012-2017

PI: John Colombo, PhD
Co-PI: Peter Smith, PhD
NIH, Eunice Shriver National Institute of Child Health and Human Development
P30HD02528-45
“Kansas Intellectual and Developmental Disabilities Center”
2012-2017

PI: Holly Hull, PhD
KUMC Research Institute Clinical Pilot Research Program
“Maternal cardiometabolic health during pregnancy: Exploring the role of vitamin D”
6/1/2012 – 5/31/2013

PI: Holly Hull, PhD
School of Health Professions - Pilot
“Decreasing sedentary time in overweight pregnant women using a novel interactive physical activity monitoring system”
6/1/2012 – 5/31/2013

PI: Holly Hull, PhD
NIH/NICHD
“Exploring the changing maternal metabolic profile during pregnancy: Promoting healthy gestational weight gain in obese women”

TRAINEE AWARDS

Kelli Valdez, PhD (Fariba Behbod Lab)
NIH/NCI K22CA160587
“Stem Cells and Their Aberrant Self-Renewal Pathways in DCIS Malignant Progression”
7/1/2012 - 6/30/2015 10/1/2012 – 10/1/2014

Kaiyu Kubota, PhD (Michael Soares Lab)
American Heart Association Postdoctoral Fellowship
“Regulation of Uterine Vascular Remodeling During Pregnancy”
7/1/2012 – 6/30/2014

Pengli Bu, PhD (Michael Soares Lab)
NIEHS Training Grant in Environmental Health, T32-ES007079
“Endocrine Disruptors, Estrogen Related Receptors, and Placentation”
5/1/2012 - 4/30/2013

Pengli Bu, PhD (Michael Soares Lab)
2012 SSR Lalor Merit Award, “Origin of a Species-specific Rheostat Controlling Testicular Growth and Steroidogenesis”

Biswarup Saha, PhD (Soumen Paul Lab)
Biomedical Research Training Program Postdoctoral Fellowship
“Epigenetic Mechanisms Regulating Trophoderm Lineage During Pre-Implantation Mammalian Development”
7/1/2012 – 6/30/2013
Honors and Awards

FACULTY HONORS/AWARDS

Russell Swerdlow, MD - 2012 KU Scholarly Achievement Award

Ivan Damjanov, MD, PhD – 2012 Medical Student Voice Award for Teaching

Warren Nothnick, PhD - Ambassador, World Endometriosis Society

Susan Carlson, PhD – President, the International Society for the Study of Fatty Acids and Lipids (ISSFAL)

Michael Detamore, PhD - The Outstanding Alumnus Award; Dept. of Bioengineering, Rice University

PROMOTION TO PROFESSOR (previously tenured)

Warren B. Nothnick, PhD, Physiology
Jixi Wang, MD, PhD, Orthopedic Surgery

PROMOTION TO ASSOCIATE PROFESSOR WITH TENURE

Soumen Paul, PhD, Pathology

TRAINEE HONORS/AWARDS

2012 STUDENT RESEARCH FORUM AWARDS

2nd Place Session Presentation Winners

Chad Walesky (Udayan Apte Lab)
Lei Qiu (Adam Krieg Lab)

Additional SRF Award Winner

Swathi Iyer (Tomoo Iwakuma Lab) – IRHRM/Center for Epigenetics and Stem Cell Biology Award

TRAINEE TRAVEL AWARDS

Kaiyu Kubota, PhD (Michael Soares Lab) – Postdoctoral Travel Scholarship

Nidhi Vishnoi, PhD (Philippe Prochasson Lab) – Postdoctoral Travel Scholarship

Visit us online at www.kumc.edu/irhrm.
Please direct questions and comments to:
Stacy McClure
913-588-5774
smcclure@kumc.edu
# Upcoming Events

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<tr>
<th>September 2012</th>
<th>November 2012</th>
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<tr>
<td>5 CRS Chalk Talk, 3070 HLSIC, Dev Karan, PhD, <em>Multi-Gene Target Immunotherapy for Prostate Cancer</em></td>
<td>7 CRS Chalk Talk, 3070 HLSIC, Paige Geiger, PhD, Title TBD</td>
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<tr>
<td>6 Seminar, 8:30 - 9:30 am, Lied Aud., Nihar R. Nayak, DVM, PhD, Stanford Univ. SOM, <em>Placental sFlt-1 Production-a Friend or Foe?</em></td>
<td>8 Seminar, 8:30 - 9:30 am, Lied Aud., Gary L. Johnson, PhD, University of North Carolina, <em>Epigenetic Regulation of the Epithelial Phenotype in Trophoblast Stem Cells</em></td>
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<td>12 CDOHAD Chalk Talk, 3070 HLSIC, Speaker TBD, Title TBD</td>
<td>14 CDOHAD Chalk Talk, 3070 HLSIC, Speaker TBD, Title TBD</td>
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<tr>
<td>13 Seminar, 8:30 - 9:30 am, Lied Aud., Benjamin L. Kidder, PhD, NIH, <em>Transcriptional Regulation of Embryonic and Trophoblast Stem Cell Self-Renewal and Differentiation</em></td>
<td>15 Seminar, 8:30 - 9:30 am, Lied Aud., Hartmut Weiler, PhD, Medical College of Wisconsin, <em>Novel Functions of the Protein C Anticoagulant and Cytoprotective Pathway</em></td>
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<tr>
<td>19 CESCB Chalk Talk 3070 HLSIC, Fariba Behbod, PharmD, PhD, Title TBD</td>
<td>21 CESCB Chalk Talk, 3070 HLSIC, Speaker TBD, Title TBD</td>
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<tr>
<td>20 Seminar, 8:30 - 9:30 am, Lied Aud., Ramani Ramchandran, PhD, Medical College of Wisconsin, <em>Transcriptional Regulation of ETV-2 During Cardiovascular Development in Vertebrates</em></td>
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<td>October 2012</td>
<td>December 2012</td>
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<tr>
<td>3 CRS Chalk Talk, 3070 HLSIC, Jeremy Chien, PhD, Title TBD</td>
<td>5 CRS Chalk Talk, 3070 HLSIC, Jeffrey M. Holzbeierlein, MD, Title TBD</td>
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<tr>
<td>10 CDOHAD Chalk Talk, 3070 HLSIC, Speaker TBD, Title TBD</td>
<td>6 Seminar, 8:30 - 9:30 am, Lied Aud., Ernestina Schipani, MD, PhD, Indiana University, <em>HIF Signaling Pathway in Development and Differentiation</em></td>
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<tr>
<td>11-12 Greenwald Symposium on Reproduction - see page 10 for details</td>
<td>12 CDOHAD Chalk Talk, 3070 HLSIC, Speaker TBD, Title TBD</td>
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<tr>
<td>17 CESCB Chalk Talk, 3070 HLSIC, Nikki Cheng, PhD, Title TBD</td>
<td>13 Seminar, 8:30 - 9:30 am, Lied Aud., Adrian Erlebacher, MD, PhD, NYU School of Medicine, <em>Mechanisms of Fetomaternal Immune Tolerance</em></td>
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<tr>
<td>18 Seminar, 8:30 - 9:30 am, Lied Aud., Dixie L. Mager, PhD, University of British Columbia, <em>Complex Interplay Between Transposable Elements and Host Genes</em></td>
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Please go to [www.kumc.edu/irhrm](http://www.kumc.edu/irhrm) and click on the Events tab for updates

*Sculpture: “Stemmer No. 7”, by David Fried, 2005*
The 9th Annual Gilbert S. Greenwald Symposium on Reproduction
October 11-12, 2012

R. Michael Roberts, PhD
Curator's Professor, Animal Sciences
University of Missouri-Columbia
Columbia, MO

KEYNOTE LECTURE
Trophoblast from Pluripotent Stem Cells: Can Induced Pluripotent Cells Provide a Glimpse into a Past Pregnancy?

Francesco J. DeMayo, PhD
Dan L. Duncan Professor & Gordon Cain Professor of Molecular and Cellular Biology
Baylor College of Medicine
Houston, TX
HOST: Vargheese Chennathukuzhi, PhD

Molecular Mechanisms Involved in Pregnancy Establishment and Maintenance (Lessons from Mouse Models)

Courtney Griffin, PhD
Assistant Member, Cardiovascular Biology Research Program
Oklahoma Medical Research Foundation
Adjunct Assistant Professor of Cell Biology
University of Oklahoma Health Sciences Center
Oklahoma City, OK
HOST: Jay L. Vivian, PhD

Transcriptional Regulation of Vascular Development by Chromatin-Remodeling Complexes

Kyle Orwig, PhD
Associate Professor of Obstetrics, Gynecology & Reproductive Sciences, and Developmental Biology
University of Pittsburgh
Pittsburgh, PA
HOST: Ajay Nangia, MBBS, FACS

Translating Spermatogonial Stem Cell Transplantation to the Clinic

Bruce D. Murphy, PhD
Director of the Center for Research in Animal Reproduction
Veterinary Biomedicine
University of Montreal
St. Hyacinthe, Quebec, Canada
HOST: Lane Christenson, PhD

Liver-Receptor Homolog-1 Rules Reproductive Processes

Fernando Pierucci-Alves, DVM
Research Assistant Professor of Anatomy & Physiology
College of Veterinary Medicine
Kansas State University
Manhattan, KS
HOST: Gustavo Blanco, MD, PhD

Cellular Signaling by Transforming Growth Factor Beta in the Male Excurrent System - Evaluating the Potential for High Levels of Signaling Activity & Possible Impacts on Reproductive Function

Yoel Sadovsky, MD
Director, Magee-Womens Research Institute; Elsie Hilliard Hillman Chair of Women’s Health Research; Professor of OB/GYN, Microbiology and Molecular Genetics, and Clinical and Translational Science Department of OB/GYN and Reproductive Sciences
University of Pittsburgh, Pittsburgh, PA
HOST: Michael J. Soares, PhD

Feto-placental Defense: A Macro Role for microRNAs

Joan Riley, PhD
Assistant Professor of Obstetrics and Gynecology
Washington University
St. Louis, MO
HOST: Margaret G. Petroff, PhD

Uterine Natural Killer Cell Activation and Development

REGISTER NOW @ www.kumc.edu/greenwald

Thursday, October 11
KU MC Campus
5 p.m. Keynote Lecture, G013 SON
6:30-9 p.m. Reception, Beller Conf. Center
7-9 p.m. Poster Session, Beller Conf. Center

Friday, October 12
Kansas City Public Library - Central
14 West 10th St., Helzberg Aud., 5th Fl