University of Wisconsin & University of Massachusetts-Boston O'Brien Research Center Spring Symposium

Steroid Hormone Pathways and Mechanisms of Action in Benign Urologic Disease

May 22-24, 2017

University of Wisconsin Health Sciences Learning Center - 1335

Keynote Speaker

Jim Dalton, PhD, Professor and Dean, University of Michigan School of Pharmacy, University of Michigan

SPEAKERS

Visiting Speakers

Jonathan Barasch, MD, PhD, Columbia University

Larry Baskin, MD, University of California, San Francisco

Paul Cooke, PhD, University of Florida

Don DeFranco, PhD, University of Pittsburgh School of Medicine

Stephen Hammes, MD, PhD, University of Rochester School of Medicine and Dentistry

Dolores Lamb, PhD, HCLD, Baylor College of Medicine Medical Center

Jun Luo, PhD, Johns Hopkins Hospital

Jill Macoska, PhD, University of Massachusetts Boston

Claus Roehrborn, MD, University of Texas Southwestern Medical Center

Fred vom Saal, PhD, University of Missouri

University of Wisconsin Speakers

Elaine Alarid, PhD

Lisa Arendt, DVM, PhD

Dale Bjorling, DVM

Joan Jorgensen, DVM, PhD

Pamela Kreeger, PhD

Paul Lambert, PhD

Paul Marker, PhD

Stephen Nakada, MD

Kyle Richards, MD

William A. Ricke, PhD

Linda Schuler, VMD, PhD

Chad Vezina, PhD

Wei Xu, PhD

K12 Scholar Speakers

Heidi W. Brown, MD

Lindsay Hampson, MD

Diego Hernando, PhD

Teresa Liu, PhD

Alejo Roldan-Alzate, PhD

Adriane Sinclair, PhD

Adam Szafran, MD

Mike Wood, DVM, PhD

Monday, May 22

AGENDA

8:00 Breakfast

8:30 **Welcoming Remarks** — William A. Ricke, PhD, Director UW O'Brien Ce
Professor, Urology Dept, UW-Madison

8:35 **Welcoming Remarks** — Richard Moss, PhD, Associate Dean for Basic Research, Biotechnology and Graduate Studies, UW-Madison

Session I, Human and Mouse LUTD

Moderators: Chad Vezina and Brian Johnson

8:45 **BPH: Androgens, Estrogens, and Fibrosis** — Kyle Richards, MD, Assistant Professor, Urology Dept, UW-Madison

9:10 **Opportunities and Challenges for Modeling BPH and LUTS in Rodents** — Paul Marker, PhD, Professor and Associate Dean, School of Pharmacy, UW-Madison

9:35 **Linking Lower Urinary Tract Function and Structure** — Dale Bjorling, DVM, Professor and Associate Dean, School of Veterinary Medicine, Director, K12 Scholars Program, UW-Madison

9:55 **Mass Spectrometry-based Urinary Proteomics** — Sam Thomas, PhD Candidate, Ricke lab, METC Program, UW-Madison

10:05 **Urinary Flow Dynamics - An MR Based Computational Modeling Approach** — Alejo Roldan-Alzate, PhD, K12 Scholar, Assistant Professor, Dept of Mechanical Engineering, UW-Madison

10:15 Break

Session II, Estrogen Targets in the Clinic

Moderators: Reginald Bruskewitz and Mele Avilla

10:35 **Steroid Hormones and Clinical LUTS/BPH: Correlations, Causations and Therapeutic Targets** — Claus Roehrborn, MD, Professor and Chairman, Dept of Urology, UT Southwestern

11:15 **Role of G-Protein Coupled Receptors in Lower Urinary Tract Fibrosis** — Jill Macoska, PhD, Professor, Biological Sciences, U-Mass Boston

11:45 **Next Generation ER and AR Blockers for Cancer Treatment** — Wei Xu, PhD, Professor, Dept of Oncology, UW-Madison

12:15 **Identification of Estrogen Regulated Gene Networks in BPH** — Teresa Liu, PhD, K12 Scholar, Dept of Urology, UW-Madison

12:30 Lunch

Session III, Tissue Specific Estrogen Action

Moderators: Dave Beebe and Anne Turco

1:30 **Hormone Action in the Cervix** - Paul Lambert, PhD, Professor and Chairman, Dept of Oncology, UW-Madison

2:00 **What is BPH and What Roles Might Estrogen Be Playing?** — William A. Ricke, PhD, Director UW O'Brien Center, Professor, Urology Dept, UW-Madison

2:20 **Reconstructing the Tissue Microenvironment to Understand the Role of Estrogens in Prostate Disease Progression** — Molly Morgan, PhD Candidate, Beebe lab, METC Program, UW-Madison

2:30 Break

Session IV, Understanding Androgen Action

Moderators: Paul Marker and Kyle Wegner

2:50 **Steroids and Inflammation: How Studying Androgen Signaling Leads to the Neutrophil** — Stephen Hammes, MD, PhD, Professor and Associate Chair, Dept of Medicine, U-Rochester, NY

3:20 **Androgen Receptor Splice Variants: From Biology to Utility** — Jun Luo, PhD, Associate Professor, Dept of Urology, Johns Hopkins Medical Center

3:50 **Androgen Regulation of FGF5 and its Role in the Prostate** — Dalton McLean, PhD Candidate, Ricke lab, McArdle Cancer Biology Program, UW-Madison

Session V, Keynote Address

Moderator: Steve Swanson

4:00 **Keynote: Selective Androgen Receptor Modulators (SARMs) as Prostate-sparing Anabolic Therapy** — Jim Dalton, PhD, Professor and Dean of University of Michigan School of Pharmacy, University of Michigan

4:55 **Closing Remarks** — Stephen Nakada, MD, Professor and Chairman, Dept of Urology, UW-Madison

5:00-6:30 Poster Session

Tuesday, May 23

8:00 Breakfast

Session VI, Hormones in the Lower UG Tract Development

Moderators: William A. Ricke and Ling Hao

8:30 **Exploring Novel Alterations in Steroid Hormone Receptor Signaling that Underlie Human Congenital Genitourinary Anomalies** — Dolores Lamb, PhD, HCLD, Professor, Dept of Urology, Baylor College of Medicine

9:05 **Development of Individual Male Urogenital Tract Components Require Distinct Threshold Concentrations of Fetal Testosterone** — Joan Jorgensen, DVM, PhD, Associate Professor, Dept of Pharmacology, UW-Madison

9:25 **Hormonal Control of Genital Development** — Larry Baskin, MD, Professor, Dept of Urology, UCSF

10:00 Break

Session VII, Hormone Action in Prostate Development

Moderators: Dale Bjorling and Jalissa Wynder

10:20 **Estradiol and Estrogenic Chemicals Modulate Androgen Action During Prostate Development** — Fred vom Saal, PhD, Professor, Div of Biological Sciences, U of Missouri

11:00 **Role of Membrane Estrogen Receptor 1 in the Development and Function of the Male Reproductive Tract** — Paul Cooke, PhD, Professor and Chair, Dept of Physiological Sciences, U-Florida

11:40 **Pinpointing Cellular Origins and Physiological Consequences of Prostate Fibrosis** — Chad Vezina, PhD, Associate Professor, Dept of Comparative Biosciences, UW-Madison

12:10 **Investigating the Mechanism of Estrogen Receptor α Regulation by Paracrine Interactions** — David Lung, PhD Candidate, Alarid lab, McArdle Cancer Biology Program, UW-Madison

12:20 **One In Six Hypogonadal Men Treated With Clomiphene Citrate Need Combination Therapy With an Aromatase Inhibitor** — Brett Johnson, MD, Urology Resident, Dept of Urology, UW-Madison

12:30 Lunch

Session VIII, Estrogen Action in Pathogenesis

Moderators: Jill Macoska and Jordan Vellky

1:30 **Opposing Roles for Cox-2 in Regulating Estrogen Receptor beta Function in the Prostate** — Don DeFranco, PhD, Professor, Dept of Pharmacology, U-Pittsburgh

2:10 **Hormone-ECM Collusion in Breast Cancer** — Linda Schuler, VMD, PhD, Professor, Dept of Comparative Biosciences, UW-Madison

2:40 **Obesity and ERα: Selecting for Hormonal Responsiveness?** — Lisa Arendt, PhD, Assistant Professor, Dept of Comparative Biosciences, UW-Madison

3:10 **Harnessing Lineage Tracing to Study Hormonal Responses in the Prostate** — Diya Binoy Joseph, PhD Candidate, Vezina lab, Cellular and Molecular Biology Program, UW-Madison

3:20 Break

Session IX, Mechanisms of Estrogen Signaling

Moderators: Scott Reeder and Taryn James

3:40 **Postranslational Dynamics of ER and Its Paradoxical Roles in Cancer** — Elaine Alarid, PhD, Professor, Dept of Oncology, UW-Madison

4:10 **Computational Modeling of Cell Signaling Networks** — Pamela Kreeger, PhD, Associate Professor, Dept of Biomedical Engineering, UW-Madison

4:40 **Measurement of Multi-steroid Hormones in Mouse Serum using LC-MS/MS** — Clara Jeong, PhD, Postdoctoral Fellow, Ricke lab, Dept of Urology, UW-Madison

4:50 **Investigating the Effects of Phosphorylation on the DNA Binding Properties of ERα** — Kyle Helzer, PhD Candidate, Alarid lab, McArdle Cancer Biology Program, UW-Madison

5:00-6:30 Poster Session

Wednesday, May 24

8:00 Breakfast

Session X, K12 Scholars Program

Moderator: Kris Penniston

8:30 **How SHAIP is Shaping Up** — Heidi Wendell Brown, MD, K12 Scholar, Assistant Professor, Dept of OB/GYN, UW-Madison

8:45 **An Iron Defense Against UTI** — Jonathan Barasch, MD, PhD, Associate Professor of Medicine & Pathology & Cell Biology, Columbia University

9:25 **Improving Transitional Urology Care** — Lindsay Hampson, MD, Assistant Professor, Dept of Urology, UCSF

9:40 **Analysis of Gene Expression in Human Penile Development** — Adriane Sincliar, PhD, Postdoctoral Scholar, Baskin lab, UCSF

Session XI, K12 Scholars Program

Moderator: Rob Lipinkski

10:30 **E-cadherin Downregulation and Increased Luminal Epithelial Permeability in BPH** — Laura Pascal, PhD, Research Assistant Professor, Department of Urology, University of Pittsburgh

10:45 **Using Cellular Imaging to Investigate the Role of Nuclear Receptor Expression and Mitochondria in Hypospadias** — Adam Szafran, MD, PhD, PhD Instructor Molecular and Cellular Biology, Baylor College of Medicine

11:00 **Classic IL-6 Signaling Mitigates Urothelial Infection** — Mike Wood, DVM, PhD, DACVIM, Assistant Professor, Dept of Medical Sciences, UW-Madison

11:15 **Quantitative MRI Techniques for the Assessment of BPH: Background and Proposed Research** — Diego Hernando, PhD, Assistant Professor, Dept of Radiology and Medical Physics, UW-Madison

11:30 **Deciphering the Influence of Diabesity and Intermittent Hypoxia on the Male Environment in Urinary Tract Dysfunction** — Lisa Abler, PhD, Assistant Scientist, Vezina lab, Dept of Comparative Biosciences, UW-Madison

11:45 **Closing Remarks** — Dale Bjorling, DVM, Professor and Associate Dean, School of Veterinary Medicine, Director, K12 Scholars Program, UW-Madison

12:00 Adjourn

About the O'Brien Center

The UW-George M. O'Brien Center of Research Excellence is a research cooperative between the University of Wisconsin-Madison, University of Massachusetts-Boston, and the National Institutes of Health. Our goals are to:

- Identify factors that cause urinary dysfunction in aging men
- Build consensus around research approaches to model urinary dysfunction in rodents
- Provide opportunities for established investigators to transition into the field of benign urology
- Secure the future of urologic research by promoting development of the next generation of urologic researchers
- Disseminate urologic research knowledge

George M. O'Brien Urology Research Center
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NIH National Institute of Diabetes and Digestive and Kidney Diseases

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