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We also wish to thank the School of Medicine and Public Health  
at the University of Wisconsin–Madison for its support!

## Schedule

7:00–8:00 **REGISTRATION and CONTINENTAL  
BREAKFAST**

8:00–8:10 **Welcome** Timothy J. Kamp, M.D.

**MORNING SESSION MODERATOR:** Craig Atwood, Ph.D.

8:10–9:00 **Blood-Borne Factors as Modulators  
of Neural Stem Cell Activity and Brain  
Function**  
Tony Wyss-Coray, Ph.D.

9:00–9:40 **Hormonal Modulation of Neural Stem Cell  
Dynamics during Development and Disease**  
Craig Atwood, Ph.D.

9:40–10:20 **BREAK and POSTER SESSION**

10:20–11:00 **Adult Stem Cells and Biomimetic Matrices  
for Tissue Engineering and Modeling:  
*Repair, Restore and Re-Create***  
Rocky S. Tuan, Ph.D.

11:00–11:40 **Stem Cell-Derived Extracellular Vesicles  
as Therapeutics**  
Paul Robbins, Ph.D.

11:40–1:15 **LUNCH and POSTER SESSION**

**AFTERNOON SESSION MODERATOR:** Randolph Ashton, Ph.D.

1:15–2:05 **Directing Fate and Timing in Human  
Pluripotent Stem Cell-Derived Neural  
Lineages**  
Lorenz Studer, M.D., Ph.D.

2:05–2:45 **Metabolic Remodeling Regulates Cellular  
Epigenetic State**  
Hannele Ruohola-Baker, Ph.D.

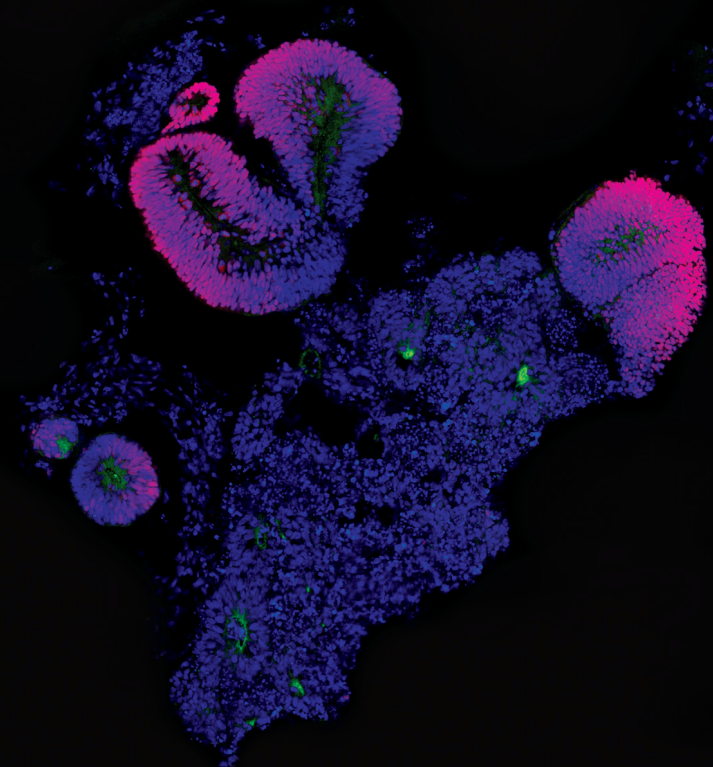
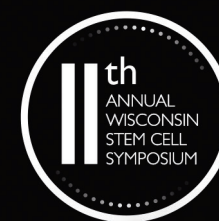
2:45–3:15 **BREAK and POSTER SESSION**

3:15–3:55 **Metabolic Maturation-Based Cardiac  
Disease Modeling with Patient-Specific  
iPSCs: Present and Future**  
Vincent Chen, M.D., Ph.D.

3:55–4:35 **Differentiation, De-Differentiation and  
Re-Differentiation of Pancreatic Beta Cells**  
Barak Blum, Ph.D.

4:35–4:45 **Presentation of Poster Awards and  
Closing Remarks**  
William L. Murphy, Ph.D.

4:45–6:00 **RECEPTION**  
Sponsored by Michael Best & Friedrich LLP



## Stem Cells in the 4th Dimension: Mechanisms of Stem Cell Aging and Maturation

April 13, 2016 | Madison, WI

Image courtesy of Carlos Marti-Figueroa,  
Wisconsin Institute for Discovery, University of Wisconsin–Madison

## Highlighted Issues

- Endocrine, microRNA, epigenetic and metabolic regulators of aging
- Systemic regulators elucidated by parabiosis
- Treatment of age-related stem cell dysfunction
- In vivo and in vitro models of neural, musculoskeletal, cardiac and pancreatic tissue maturation

## Key Topics

The Symposium is coordinated by the Stem Cell & Regenerative Medicine Center at the University of Wisconsin–Madison and the BioPharmaceutical Technology Center Institute. It brings together leading researchers who are investigating the effects of aging on stem cell populations and their progeny and recapitulating aging mechanisms in vitro to mature human stem cell derivatives and transplants. The morning session will review systemic and cell autonomous factors known to impact stem cell maturation, aging and senescence. The afternoon session will focus on using these approaches and understanding to develop in vitro models of matured, stem cell-derived neural, cardiac and pancreatic cells and tissues for regenerative medicine applications.

## Moderators

### Randolph S. Ashton, Ph.D.

Assistant Professor, Biomedical Engineering, Wisconsin Institute for Discovery, University of Wisconsin–Madison, Madison, WI (Afternoon Session)

### Craig Atwood, Ph.D.

Associate Professor, Department of Medicine, Division of Geriatrics & Gerontology, Veterans Administration Hospital, University of Wisconsin–Madison, Madison, WI (Morning Session)

### Timothy J. Kamp, M.D.

Professor, Medicine; Co-director, Stem Cell and Regenerative Medicine Center, University of Wisconsin-Madison, Madison, WI (Welcome)

### William L. Murphy, Ph.D.

Professor, Biomedical Engineering, Orthopedics & Rehabilitation; Co-director, Stem Cell & Regenerative Medicine Center, University of Wisconsin–Madison, Madison, WI (Presentation of Poster Awards & Closing Remarks)

## Speakers

### Craig Atwood, Ph.D.

Associate Professor, Department of Medicine, Division of Geriatrics & Gerontology, Veterans Administration Hospital, University of Wisconsin–Madison, Madison, WI

### Barak Blum, Ph.D.

Assistant Professor, Department of Cell & Regenerative Biology, University of Wisconsin–Madison, Madison, WI

### Vincent Chen, M.D., Ph.D.

Professor, Department of Medicine Clinical Cardiac Electrophysiologist, Division of Cardiovascular Medicine, University of California, San Diego, La Jolla, CA

### Paul Robbins, Ph.D.

Professor, Department of Metabolism & Aging, Scripps Florida, The Scripps Research Institute, Jupiter, FL

### Hannele Ruohola-Baker, Ph.D.

Associate Director, Institute for Stem Cell and Regenerative Medicine; Professor, Department of Biochemistry, University of Washington, Seattle, WA

### Lorenz Studer, M.D., Ph.D.

Ph.D., Director, Sloan-Kettering Center for Stem Cell Biology; Professor, Department of Neuroscience, Weill-Cornell Graduate School, New York, NY

### Rocky S. Tuan, Ph.D.

Director, Center for Cellular and Molecular Engineering; Arthur J. Rooney, Sr. Professor and Executive Vice Chair, Department of Orthopaedic Surgery; Associate Director, McGowan Institute for Regenerative Medicine; Director, Center for Military Medicine Research; Professor, Departments of Bioengineering and Mechanical Engineering & Materials Science, University of Pittsburgh, Pittsburgh, PA

### Tony Wyss-Coray, Ph.D.

Professor, Neurology & Neurological Sciences, Stanford University School of Medicine; Associate Director, Center for Tissue Regeneration, Repair, and Restoration, Veterans Administration Palo Alto Health Care System, Palo Alto, CA

## Poster Contest Judges

### Randolph S. Ashton, Ph.D.

Assistant Professor, Biomedical Engineering, Wisconsin Institute for Discovery, University of Wisconsin–Madison, Madison, WI

### Timothy J. Kamp, M.D.

Professor, Medicine; Co-director, Stem Cell and Regenerative Medicine Center, University of Wisconsin-Madison, Madison, WI

### Wan-Ju Li, Ph.D.

Assistant Professor, Department of Orthopedics and Rehabilitation, University of Wisconsin School of Medicine and Public Health, Madison, WI

### Krishanu Saha, Ph.D.

Assistant Professor, Biomedical Engineering, Wisconsin Institute for Discovery, University of Wisconsin–Madison, Madison, WI

