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We also wish to thank the School of Medicine and Public Health and the Department of Cell and Regenerative Biology at the University of Wisconsin-Madison for their support!

Schedule

7:00–8:00 Registration and Continental Breakfast

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

MORNING SESSION MODERATOR: *John Fallon, Ph.D.*

8:10–8:50 Building a Blastema: A Historical Perspective
David Stocum, Ph.D.

8:50–9:30 Mechanism and Evolution in Vertebrate Limb
Regeneration *Jeremy Brockes, Ph.D.*

9:30–10:10 Anuran Limb Regeneration: An Intermediary
Model between Amphibians and Mammals
Koji Tamura, Ph.D.

10:10–10:30 Break and Poster Session

10:30–11:10 Regeneration in Newts: Lessons from
Transcriptomic Analysis *Panagiotis Tsonis, Ph.D.*

11:10–11:50 Epithelial-mesenchymal Interaction
Underlying Digit Tip Regeneration
Mayumi Ito, Ph.D.

11:50–1:10 Lunch and Poster Session

AFTERNOON SESSION MODERATOR: *Ray Vanderby, Ph.D.*

1:10–1:50 Bridging Developmental Biology, Stem Cell
Tissue Engineering and Clinical Translation
after Musculoskeletal Tissue Injury
David Butler, Ph.D.

1:50–2:30 The Role of Stem Cell Exhaustion in Aging
and Disease *Johnny Huard, Ph.D.*

2:30–3:10 A Tissue Engineering Approach to Restore
Function, Mechanics and Structure after
Ligament/Tendon Injury *Lisa Larkin, Ph.D.*

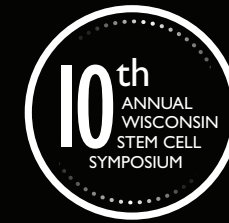
3:10–3:30 Break and Poster Session

3:30–4:10 Customized Scaffolding for Skeletal
Tissue Regeneration *William Murphy, Ph.D.*

4:10–4:50 Chondrogenic Differentiation of Stem
Cells Regulated by a Network of Signaling
Pathways *Wan-Ju Li, Ph.D.*

4:50–5:10 Presentation of Poster Awards &
Closing Remarks *Ray Vanderby, Ph.D.*

5:10–6:00 Reception Sponsored by:
Michael Best & Friedrich LLP



Engineering Limb Regeneration

Recapitulating Normal Development and Regeneration?

April 22, 2015 | Madison, WI

Image courtesy of James Monaghan, Ph.D.,
Northeastern University, Boston, MA



Highlighted Issues

- Historical perspectives on limb regeneration
- The role of epigenetic modifications that regulate limb regeneration in anurans and the implications of recent studies on the urodele transcriptome
- Terminal phalanx regeneration in mammals
- Challenges to the generation of functional musculoskeletal tissues from stem cells and how developmental and regenerative biology can help address these challenges
- Regeneration of musculoskeletal tissues of a limb, including skeletal muscle, tendon/ligament, bone and cartilage, using stem cell-based engineering approaches

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 working in the areas of limb development and regeneration (morning session) and stem cells and tissue engineering (afternoon session).

Moderators

Timothy J. Kamp, M.D.

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

John Fallon, Ph.D.

H.W. Mossman Professor Emeritus, Cell and Regenerative Biology Department, University of Wisconsin-Madison, Madison, WI (Morning Session)

Ray Vanderby, Ph.D.

Professor of Biomedical Engineering & Professor of Orthopedic Surgery, University of Wisconsin-Madison, Madison, WI (Afternoon Session & Closing)

Speakers

Jeremy Brockes, Ph.D.

MRC Research Professor, Department of Structural and Molecular Biology, University College London, London, UK

David Butler, Ph.D.

Emeritus Professor, Biomedical Engineering, University of Cincinnati, Cincinnati, OH

Johnny Huard, Ph.D.

Professor, Departments of Orthopaedic Surgery, Microbiology and Molecular Genetics, Bioengineering, Pathology, Pediatrics, and Physical Medicine and Rehabilitation; Director of the Stem Cell Research Center, McGowan Institute for Regenerative Medicine, University of Pittsburgh, Pittsburgh, PA

Mayumi Ito, Ph.D.

Associate Professor, The Ronald O. Perleman Department of Dermatology, Department of Cell Biology, New York University School of Medicine, New York, NY

Lisa Larkin, Ph.D.

Associate Professor, Molecular & Integrative Physiology, Biomedical Engineering Department, University of Michigan, Ann Arbor, MI

Wan-Ju Li, Ph.D.

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

William Murphy, Ph.D.

Harvey D. Spangler Professor, Biomedical Engineering, College of Engineering, University of Wisconsin-Madison, Madison, WI

David Stocum, Ph.D.

Professor and Dean Emeritus, Department of Biology, Indiana University-Purdue University Indianapolis, Indianapolis, IN

Koji Tamura, Ph.D.

Professor, Laboratory of Organ Morphogenesis, Department of Developmental Biology and Neurosciences, Graduate School of Life Sciences, Tohoku University, Sendai, Japan

Panagiotis Tsonis, Ph.D.

Professor, College of Arts and Sciences: Biology, and School of Engineering: Bioengineering Graduate Program; Director, Center for Tissue Regeneration and Engineering, University of Dayton, Dayton, OH

Image courtesy of David Stocum, Ph.D., Indiana University-Purdue University Indianapolis, Indianapolis, IN

