## Thursday, October 17

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 AM</td>
<td>Registration</td>
<td>Elevator Lobby</td>
</tr>
<tr>
<td>7:30 AM</td>
<td>Continental Breakfast</td>
<td>Ballroom</td>
</tr>
<tr>
<td>8:30 AM</td>
<td>Opening Remarks: Daniel Beard, University of Michigan, Ann Arbor</td>
<td>Ballroom</td>
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<tr>
<td>9:00 AM</td>
<td>Plenary Lecture</td>
<td>Ballroom</td>
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**Human Heart Physiology in Health and Disease**

**10:00 AM** Coffee Break

**10:30 AM** **SESSION 1.1: Patient-Specific Therapies and Other Translational Applications**

*Chair: Robert Balaban, NHLBI, Bethesda*

- **Drug Discovery Using Engineered Heart Tissues: “Personalizing” Drugs**
  - Tetsuro Wakatsuki, *InvivoSciences, Madison*

- **Data-Driven Computational Models of Heart Physiome**
  - Tommaso Mansi, *Siemens Corporation, Princeton*

- **A Patient-Specific Model of Coronary Fractional Flow Reserve**
  - Eun Bo Shim, *Kangwon National University, Chuncheon*

  *Based on a Multi-Scale Approach*

- **Characterization of Coronary Intramural Branch Segments**
  - Maria Siebes, *Academic Medical Center, Amsterdam*

  *in Relation to Myocardial Depth*

**12:00 PM** Poster Talks

**12:30 PM** Lunch

**1:30 PM** Posters and Dessert

**2:30 PM** **SESSION 1.2: Cellular Mechanics and Excitation-Contraction Coupling**

*Chair: Brian Carlson, University of Michigan, Ann Arbor*

- **Mechanical Signaling to the Calcium Control System**
  - Leighton Izu, *University of California, Davis*

- **The Role of Metabolic Dysfunction in Heart Failure**
  - Scott Bugenhagen, *Medical College of Wisconsin, Milwaukee*

- **Late Na Current, Cellular Na Loading and Arrhythmogenesis**
  - Eleonora Grandi, *University of California, Davis*

**3:45 PM** Coffee Break

**4:00 PM** **SESSION 1.3: Whole-Organ Electrical and Mechanical Function**

*Chair: James Bassingthwaighte, University of Washington, Seattle*

- **Biophysical Properties of the Cardiac Myofilaments Define Their Multi-Functional Role in Whole-Heart Physiology**
  - Stuart Campbell, *Yale University, New Haven*

- **When Models Fail: Lessons Learnt from Modelling the Mouse Heart**
  - Steven Niederer, *The Rayne Institute, London*

- **Modeling Cardiac Fluid-Structure Interaction**
  - Boyce Griffith, *New York University, New York*

**5:15 PM** Special Topic

**5:45 PM** **NIH Funding, Big Data, Multi-Scale Modeling and the Cardiac Physiome**

*Jennie Larkin, NHLBI, Bethesda*

**5:45 PM** Dinner on your own
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<tbody>
<tr>
<td>8:15 AM</td>
<td>Continental Breakfast</td>
<td>Stone House</td>
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<td>9:00 AM</td>
<td>Plenary Lecture</td>
<td>Ballroom</td>
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<tr>
<td>9:00 AM</td>
<td><strong>Control of Coronary Blood Flow</strong></td>
<td>Johnathan Tune, Indiana University, Indianapolis</td>
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<tr>
<td>10:00 AM</td>
<td>Coffee Break</td>
<td>Ballroom</td>
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<tr>
<td>10:15 AM</td>
<td><strong>SESSION 2.1: Cardiogenesis and Cardiac Remodeling</strong></td>
<td>Ballroom</td>
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<tr>
<td>11:45 PM</td>
<td>Poster Talks</td>
<td>Ballroom</td>
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<tr>
<td>12:15 PM</td>
<td>Lunch</td>
<td>Dining Room</td>
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<tr>
<td>1:15 PM</td>
<td>Posters and Dessert</td>
<td>Stone House</td>
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<tr>
<td>2:15 PM</td>
<td><strong>SESSION 2.2: Coronary Blood Flow, Substrate Delivery, and Metabolism</strong></td>
<td>Ballroom</td>
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<td>3:45 PM</td>
<td>Coffee Break</td>
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<tr>
<td>4:00 PM</td>
<td><strong>SESSION 2.3: Cellular Electrophysiology and Calcium Handling</strong></td>
<td>Ballroom</td>
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<tr>
<td>5:30 PM</td>
<td>Break on your own</td>
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<tr>
<td>6:30 PM</td>
<td>Cocktails</td>
<td>Stone House</td>
</tr>
<tr>
<td>7:30 PM</td>
<td>Conference Dinner</td>
<td>Stone House</td>
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SATURDAY, OCTOBER 19

8:15 AM  Continental Breakfast .................................................... Stone House
9:00 AM  Plenary Lecture ........................................................ Ballroom

The Physiome Project and the Virtual Physiological Human ......................... Peter Hunter, The University of Auckland

10:00 AM  Coffee Break ........................................................ Ballroom
10:15 AM  SESSION 3.1: Integration of the Cardiac Physiome with Whole-Body Function .... Ballroom

Chair: Stig Omholt, Norwegian University of Science and Technology, Trondheim

Scalable Strategies for the Modular Composition of Physiological Models .......... Maxwell Neal, University of Washington, Seattle
Arterial Stiffening Provides Sufficient Explanation ............................. Klas Pettersen, Norwegian University of Life Sciences, Aas
for Primary Hypertension
Mechanisms of Local Regulation of Blood Flow to Tissue ....................... Brian Carlson, University of Michigan, Ann Arbor
Whole-Body Models, Model Exploration, Model Identification, and Model Reduction ............................ Thomas Heldt, Massachusetts Institute of Technology, Cambridge

11:45 PM  Coffee Break ........................................................ Ballroom
12:00 PM  Business Meeting ....................................................... Ballroom
1:00 PM  Boxed Lunch and Meeting Conclusion ....................................... Dining Room

PROGRAM COMMITTEE:
Daniel Beard, University of Michigan, Ann Arbor
Brian Carlson, University of Michigan, Ann Arbor

SCIENTIFIC ADVISORY COMMITTEE:
Daniel Beard, University of Michigan, Ann Arbor
Peter Hunter, University of Auckland
Satoshi Matsuoka, University of Fukui
Andrew McCulloch, University of California, San Diego
Nicolas Smith, King's College London

ORGANIZING COMMITTEE:
Daniel Beard, University of Michigan, Ann Arbor
Brian Carlson, University of Michigan, Ann Arbor
Gary Churchill, The Jackson Laboratory, Bar Harbor
Laura Ingerson, The Jackson Laboratory, Bar Harbor
Melinda Dwinell, Medical College of Wisconsin, Milwaukee
Stacy Romant, Medical College of Wisconsin, Milwaukee

It is our pleasure to welcome you to the 2013 Cardiac Physiome Workshop in Bar Harbor. We are excited by the high quality of presentations, continued from previous years, and the participation of so many graduate students and postdoctoral fellows. We look forward to vibrant scientific interactions and fruitful discussions that will continue to promote new collaborations and advance our growing field.

We would like to thank all of our sponsors for making this meeting possible through their generous financial support.