



# 3<sup>rd</sup> International Symposium on Vascular Tissue Engineering

Nationwide Children's Hospital  
Education Building - Stecker Auditorium  
June 5 – 6, 2017

## Monday, June 5, 2017

7:15 – 8:00 AM

**Breakfast/Check-In/ Speaker Check-in**

8:00 – 8:25 AM

**Opening Remarks**

Larry Moss

### **Recent Progress in Scaffolds for TEVG – 1**

Chair: Anthony Weiss | Gary Bowlin | Peter Ma

8:30 – 8:55 AM

Designing Scaffold Microenvironments to Direct Blood Vessel Regeneration  
Peter Ma

8:55 – 9:20 AM

Elastin as a High Value Component of Tissue Engineered Vessels  
Anthony Weiss

9:20 – 9:45 AM

Designing Bioresorbable Vascular Prosthetics to Regulate Outcome Derived from Acute Confrontation with Neutrophils  
Gary Bowlin

9:45 – 10:05 AM

**Break**

### **Basic Science – 1**

Chair: Yasuko Iwakiri | Elena Aikawa

10:05 – 10:25 AM

Hemodynamic Changes and Hepatic Remodeling  
Yasuko Iwakiri

10:25 – 10:50 AM

Novel Aspects in Cardiovascular Research  
Elena Aikawa

10:50 – 11:10 AM

Pathologic Considerations in Cardiovascular Tissue Engineering  
Frederick Schoen

11:10 AM – 11:30 AM

Computer Model Driven Design of Tissue Engineered Vascular Grafts  
J.D. Humphrey

11:30 AM – 12:30 PM

**Lunch & Visit with Poster Presenters**

12:30 – 1:00 PM

**Fung Wexner Lifetime Achievement Award Presentation**  
Mark Galantowicz & Toshiharu Shinoka

## Clinical Needs of Vascular Tissue Engineering

Chair: Toshiharu Shinoka

- 1:00 – 1:20 PM                      Implantation of Tissue Engineered Inferior Vena Cava in a lamb model  
Christopher Breuer
- 1:20 – 1:50 PM                      Transcatheter Assessment of TEVG from Catheterization Laboratory in Animal Facility  
at Nationwide Children’s Hospital  
John Cheatham
- 1:50 – 2:15 PM                      Core Matrix Valve Conduit  
Patrick McConnell
- 2:15 – 2:40 PM                      Patient Specific Hemodynamics and Growth and Remodeling in Congenital Heart  
Disease Surgery  
Alison Marsden
- 2:40 – 3:05 PM                      Optimizing Vascular Graft Endothelialization by Transmural Ingrowth  
Tim Pennel
- 3:05 – 3:25 PM                      **Break**

## Recent Progress in Scaffolds for TEVG – 2

Chair: William Wagner | Xiumei Mo

- 3:25 – 3:50 PM                      Modification of Vascular Grafts with Vasoactive Substances to Improve Blood Vessel  
Regeneration and Function  
Deling Kong
- 3:50 – 4:15 PM                      Nanofibrous Tube Scaffold for Blood Vessel Tissue Engineering  
Xiumei Mo
- 4:15 – 4:40 PM                      Polymer Design and Processing for Cardiovascular Applications  
William Wagner
- 4:40 – 7:00 PM                      **Poster Session & Reception with Heavy Hors d’Oeuvres & Optional NCH Tour**  
*Live Music – Stecker Lobby*

## Tuesday, June 6, 2017

- 7:15 – 8:10 AM                      **Breakfast/Check-In/ Speaker Check-in**
- 8:10 – 8:15 AM                      **Opening Remarks**  
John Barnard

## Current Strategies for Tissue Engineering Artery

Chair: Joris Rotmans | Yadong Wang

- 8:15 – 8:40 AM                      Contribution of Stem Cells to Vascular Regeneration and Fibrosis  
Song Li
- 8:40 – 9:05 AM                      In Situ Tissue Engineering of Blood Vessels  
Yadong Wang
- 9:05 – 9:30 AM                      Vascular Tissue Engineering: “Quo Vadis”?  
Beat Walpoth

9:30 – 9:55 AM Human Adipose-Derived Mesenchymal Stem Cell-Based Engineered Vascular Grafts: Practical Considerations for Translation  
[David Vorp](#)

9:55 – 10:20 AM Autologous In Vitro Engineered Vascular Grafts for Hemodialysis Access  
[Joris Rotmans](#)

10:20 – 10:45 AM **Break**

**Oral Sessions** Chair: [Toshiharu Shinoka](#)

10:45 – 11 AM An Optimized Induced Pluripotent Stem Cell-Derived Tissue Engineered Blood Vessel Model Of Hutchinson-Gilford Progeria Syndrome For Drug Toxicity Testing  
[Leigh Atchison](#), [Elizabeth Snyder-Mounts](#), [Kan Cao](#) & [George Truskey](#)

11 – 11:15 AM Adipose-Derived Stem Cells And Vascularized Lymph Node Transfers Successfully Treat Mouse Hindlimb Secondary Lymphedema Through Early Re-Connection Of The Lymphatic System And Lymphangiogenesis  
[Sadanori Akita](#)

11:15 – 11:30 AM First clinical application of the human Biotube to the congenital heart disease  
[Shuheji Fujita](#), [Masaaki Yamagishi](#), [Keiichi Kanda](#), [Takako Miyazaki](#), [Yoshinobu Maeda](#), [Masashi Yamanami](#), [Taiji Watanebe](#) & [Hitoshi Yaku](#)

11:30 – 11:45 AM In Vivo Tissue-Engineering of Poly ( $\epsilon$ -caprolactone) Reinforced Vascular Grafts  
[Kai Wang](#), [Qiuying Zhang](#), [Dengke Zhi](#), [Deling Kong](#)

11:45 AM – 12 PM Excellent Long-Term In-Vivo Data with Bioabsorbable Carotid Grafts  
[Marieke Brugmans](#), [Nicolas L'Heureux](#), [Luke Burke](#), [Martijn Cox](#), [Maria Romero](#) & [Renu Virmani](#)

12 – 12:15 PM Luminal Evolution of the Tissue-Engineered Vascular Graft  
[Victoria Pepper](#), [Cameron Best](#), [Shinka Miyamoto](#), [Ekene Onwuka](#), [Hideki Miyachi](#), [Nakesha King](#), [James Reinhardt](#), [Avione Lee](#), [Joseph Drews](#), [Toshihiro Shoji](#), [Eric Heuer](#), [Sharon Cheatham](#), [Joanne Chisolm](#), [T Sugiura](#), [Toshiharu Shinoka](#), [John Cheatham](#) & [Christopher Breuer](#)

12:15 – 1:30 PM **Working Lunch** & Progress Toward a Tissue Engineered Heart Valve  
[John Mayer, Jr.](#) - Fung Wexner Lifetime Achievement Award Recipient

**Future Clinical Application of Tissue Engineering Vascular Grafts**

Chair: [Christopher Breuer](#) | [Prabir Roy-Chaudhury](#)

1:30 – 1:55 PM Completely Biological "Off-the-Shelf" Vascular Grafts  
[Robert Tranquillo](#)

1:55 – 2:20 PM Design and Preclinical Validation of Small-Diameter Vascular Grafts  
[Didier Letourneur](#)

2:20 – 2:45 PM Vascular Tissue Engineering for Skeletal Muscle Regeneration/Repair  
[George Christ](#)

2:45 – 3:10 PM Bioengineered Solutions for Dialysis Vascular Access Dysfunction: Challenging the Status Quo...

Prabir Roy-Chaudhury

3:10 – 3:30 PM

**Break**

**Current Status of Clinical Application of Tissue Engineering Vascular Grafts**

Chair: [Christopher Breuer](#) | [Laura Nicklason](#) | [Toshiharu Shinoka](#)

3:30 – 3:55 PM

Tissue Engineered Vascular Grafts for Use in Congenital Heart Surgery

[Christopher Breuer](#)

3:55 – 4:20 PM

Building Completely Biological, Woven, Human Tissue Engineered Blood Vessels

[Nicolas L'Heureux](#)

4:20 – 4:45 PM

Long term clinical outcomes of Tissue Engineered Vascular Conduits in Pediatric Cardiovascular Surgery

[Toshiharu Shinoka](#)

4:45 – 5:10 PM

Clinical Follow-Up of Patients Receiving Tissue Engineered Arteriovenous Grafts

[Laura Niklason](#)

5:10 – 5:15 PM

**Closing Remarks**

[Laura Niklason](#)