

David Schreier, BS
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Objective: To pursue a cardiovascular science research career. I plan to investigate the mechanical and biological factors that determine right heart failure in rodent models, building on the knowledge, skills and experimental methodologies I developed as an undergraduate student.

Education

University of Wisconsin – Madison

Bachelor of Science in Biomedical Engineering, May 2012

University of Wisconsin – Madison

Doctoral student in BME, June 2012 - present

Research Experiences (all at University of Wisconsin – Madison)

Graduate Research Assistant, Department of Biomedical Engineering, June 2012 - present
Advisor/Project: Naomi Chesler, PhD; Pre-clinical studies on cardiopulmonary mechanics during pulmonary hypertension progression.

Undergraduate Researcher, Department of Biomedical Engineering, Jan 2010 – May 2012
Advisor/Project: Naomi Chesler, PhD; Role of collagen synthesis in ventricular and vascular adaptation to hypoxic pulmonary hypertension
Advisor/Project: Diana Tabima (PhD student); Impedance analysis of pulmonary hemodynamics

Undergraduate Design Student, School of Veterinary Medicine, Sept 2011 – July 2012
Advisor/Project: John Svaren, PhD; 3D culture system for Schwann cells

Undergraduate Design Student, Department of Surgery, Jan 2011 – Sept 2011
Advisor/Project: Haggi Mazeh, MD; Detachable screen pointer for laparoscopic surgery

Undergraduate Design Student, Instrumentation Teaching Lab, Sept 2009 – Dec 2010
Advisor/Project: Willis Tompkins, PhD and John Webster, PhD; Impedance Cardiography
Special accomplishments: Submitted IRB proposal for human testing June 2010
Awards: Tong Distinguished Design Award for BME, Spring 2010, Runner-Up

Publications

Peer-reviewed journal articles (*Co-first Author)

David Schreier, Timothy Hacker, Gouqing Song, Naomi Chesler. “The role of collagen synthesis in ventricular and vascular adaptation to hypoxic pulmonary hypertension” *Journal of Biomechanical Engineering*, 135(2) pg. 021018-1 – 021018-7 February 2013.

Zhijie Wang, **David Schreier**, Timothy Hacker, Naomi Chesler. “Progressive right ventricular functional and structural changes in a mouse model of pulmonary arterial hypertension, DOI: 10.1002/phy2.184, *Physiol Reports* 2013.

Shivendra Tewari, Scott Bugenhagen, Zhijie Wang, **David Schreier**, Brian Carlson, Naomi Chesler, Daniel Beard. “Analysis of cardiovascular dynamics in pulmonary hypertensive C57Bl6/J mice. 4(355), *Frontiers in Physiology*, 2013.

Aiping Liu, **David Schreier**, Lian Tian, Jens Eickhoff, Zhijie Wang, Timothy Hacker, Naomi Chesler. “Direct and Indirect protection of right ventricular function by estrogen in an experimental model of pulmonary arterial hypertension” *American Journal of Physiology Heart and Circulatory Physiology*, DOI: 10.1152/ajpheart.00758, 2014.

David Schreier, Timothy Hacker, Kendall Hunter, Jens Eickhoff, Aiping Liu, Gouqing Song, Naomi Chesler. “The impact of increased hematocrit on right ventricular afterload in response to chronic hypoxia” *Journal of Applied Physiology*, (In review 2014)

***David Schreier**,* Diana M. Tabima, Aiping Liu, Shivendra Tewari, Daniel Beard, Timothy Hacker, Rebecca Vanderpool, Gary Mitchell, Naomi Chesler. “The effects of chronic hypoxia on characteristic impedance: a comparison between time and frequency domain methods” (In preparation 2014)

Zhijie Wang, Guoqing Song, **David Schreier**, Hinnah Abid, Timothy Hacker, Naomi Chesler. “Effects of β -animopropionitrile on pulmonary arterial biomechanics in hypoxic pulmonary hypertension in mice.” (In Preparation 2014)

Conference abstracts (*Presenting author)

***David Schreier**, Diana Tabima, Shivendra Tewari, Tim Hacker, Daniel Beard, Naomi Chesler. “A simple model of the pulmonary vasculature to link structure, function and hemodynamic changes with pulmonary hypertension progression.” 2014 World Congress on Biomechanics.

***David Schreier**, Shivendra Tewari, Tim Hacker, Daniel Beard, Naomi Chesler. “Characteristic impedance: A comparison between time and frequency domain methods.” 2014 World Congress on Biomechanics.

***David Schreier**, Tim Hacker, Guoqing Song, Naomi Chesler. “Impact of blood viscosity on right ventricular afterload during hypoxic pulmonary hypertension.” 2013 Biomedical Engineering Society Conference. Seattle Sept. 25-28.

*Alessandro Bellofiore, Omid Forouzan, **David Schreier**, Tim Hacker, Guoqing Song, Melissa Bates, Heidi Kellihan, Dan Consigny, CJ Francois, Naomi Chesler. “Can the single-beat method be used to assess the right ventricle in different species?” 2013 Biomedical Engineering Society Conference. Seattle Sept. 25-28.

- *Zhijie Wang, JR Patel, **David Schreier**, Tim Hacker, Naomi Chesler. “Right ventricular dysfunction in pulmonary arterial hypertension: cellular and hemodynamic changes in a mouse model.” 2013 Summer Bioengineering Conference, (Oral Presentation). Jun 26-29, Sunriver, OR.
- *Aiping Liu, Timothy Hacker, Jens Eickhoff, **David Schreier**, Naomi Chesler, “Effects of estrogen on right ventricular function in an experimental model of pulmonary artery hypertension”, American Thoracic Society International Conference, Philadelphia, PA, May, 2013.
- ***David Schreier**, Diana Tabima, Timothy Hacker, Gouqing Song, Naomi Chesler. “Proline Derivative Reduces Vascular Remodeling during Hypoxic Pulmonary Hypertension” Biomedical Engineering Society Conference, Atlanta Georgia. Oct. 24-27, 2012
- ***David Schreier**, *Jacob Meyer, Courtney Krueger, Nick Shiley, Brad Lindevig, John Barber, John Svaren. “3-D Schwann Cell Culture System” Biomedical Engineering Society Conference, Atlanta Georgia. Oct. 24-27, 2012
- *Zhijie Wang, Jitandrakumar Patel, **David Schreier**, Timothy Hacker, Richard Moss, Naomi Chesler. “Right Ventricular mechanical changes with pulmonary hypertension: cellular and hemodynamic function in a mouse model” Keystone Symposia Monterey, California, Sept 10 - 15, 2012
- †**David Schreier**, Timothy Hacker, Gouqing Song, Naomi Chesler. “Proline Derivative Reduces Vascular Remodeling during Hypoxic Pulmonary Hypertension” American Society of Mechanical Engineering – Summer Bioengineering Conference, Figaro Puerto Rico. June 20-23, 2012.
 †**Awards:** 1st Place Undergraduate Student Paper Competition
- *Zhijie Wang, **David Schreier**, Timothy Hacker, Naomi Chesler. “Changes in Right Ventricular Function in a Mouse Model of Severe Pulmonary Hypertension” Aspen Lung Conference – Oral Presentation – Aspen CO. June 6-9 2012.
- *Zhijie Wang, **David Schreier**, Timothy Hacker, Naomi Chesler. “Changes in Right Ventricular Function in a Mouse Model of Severe Pulmonary Hypertension” American Thoracic Society International Conference – San Francisco, CA. May 18-23 2012.
- ***David Schreier**, Timothy Hacker, Gouqing Song, Naomi Chesler. “Proline Derivative Reduces Vascular Remodeling during Hypoxic Pulmonary Hypertension” Biomedical Engineering Society Conference, Hartford Connecticut. Oct. 12-15, 2011

Awards and Honors

1st Place Student Paper Competition ASME June 2012
 Tong Distinguished Design Award for BME, Spring 2010, Runner-Up
 National Society of Collegiate Scholars, Member
 Alpha Chi Sigma Academic Community, Member
 Biomedical Engineering Society, Student member

Volunteer Work and Leadership Activities

Madison ALS and MDA association January 2013 - present
Aspirus Wausau Hospital Family Medicine Intern, Summer 2010
Head Junior Legion Baseball Coach, 2008-2010
Wonders of Traveling Physics Show UW-Madison, 2008-2009
Riverview Tower Aide for geriatric residents, 2008-2010

Technical Skills

Mathematical and analytical software: MATLAB, Maple, Notocord–hem (Notocord),
Noninvasive hemodynamics (Cardiovascular Inc.), R statistical analysis
Engineering software and manufacturing techniques: Circuit Design LTspice, LabVIEW,
soldering, lathing, milling, grinding, drilling, welding,
Laboratory Skills: Some small animal surgery, mouse care and husbandry, histological image
analysis, various biochemical analyses, RT-qPCR, cell culture, fluorescent and scanning
electron microscopy, electrospinning, scientific literature review

Hobbies and Extracurricular Activities

Communications Technician – Marathon Baseball Association
History, Astronomy, Athletics, Mechanical repair