



Regenerative Medicine and Surgery Selective

Mayo Clinic School of Medicine in Conjunction with the Center for Regenerative Medicine
Co-Sponsored by Regenerative Medicine Minnesota

Invited Participation - University of Minnesota Medical School (Twin Cities and Duluth)

Dates: April 16 – April 20, 2018

Location: Rochester, MN

<p>Selective Directors</p>	<p>Richard Hayden, M.D. <i>Education Director, Center for Regenerative Medicine</i> <i>Professor of Otolaryngology</i></p> <p>Andre Terzic, M.D., Ph.D. <i>Director, Center for Regenerative Medicine</i> <i>Professor of Medicine and Pharmacology, College of Medicine</i></p> <p>Saranya Wyles, M.D., Ph.D. <i>Program Director, Regenerative Medicine Minnesota Grant Awardee</i></p>	
<p>Faculty</p>	<p>Atta Behfar, M.D., Ph.D. William Faubion, M.D. Rafael Sierra, M.D. Simon Maltais, M.D., Ph.D. David Lott, M.D. Victor Montori, M.D. Timothy Nelson, M.D., Ph.D. Charlene Martin Lillie Gregory Worrell, M.D, Ph.D. Samir Mardini, M.D. Kathryn Ruddy, M.D. Ian Parney, M.D., Ph.D. Rodrigo Ruano, M.D., Ph.D. Katherine Campbell, Ph.D. Christopher Schad Jamie Sundsbak Xavier Frigola, Ph.D. Emily Wampfler</p>	<p>Alfredo Quinones-Hinojosa, M.D. Wolfgang Singer, M.D. Shane Shapiro, M.D. Jay Smith, M.D. Nathan Staff, M.D., Ph.D. Brandon Tefft, Ph.D. Stephen Textor, M.D. Jakub Tolar, M.D., Ph.D Saad Kenderian, M.B.Ch.B Anthony Windebank, M.D. Satsuki Yamada, M.D., Ph.D. Richard Sharp, Ph.D. Amy Lightner, M.D. Alison Bruce, M.B.Ch.B. Paul Stalboerger Allan Dietz, Ph.D. Tyra Witt Jeffrey Winters, M.D.</p>
<p>Teaching Assistants</p>	<p>Jeremie Oliver Dileep Monie Olivia Crum</p>	<p>Michelle Hwang Simrit Warring John Welby</p>
<p>Support Team</p>	<p>Jilian Foxen, M.E.d. Amanda Golden, M.L.S.</p>	<p>Alissa Cornell Beth Borg</p>
<p>Administrative Contact</p>	<p>Susan Watts <i>Center for Regenerative Medicine</i></p>	<p>Keri Van Schepen <i>Center for Regenerative Medicine</i></p>



Educational Objectives

Successful completion of the selective will enable the students to achieve the following educational goals:

Day 1: Regenerative Medicine: Principles to Practice

- Recognize patient unmet needs and how regenerative medicine offers a curative paradigm
- Understand the fundamental principles, tools, and platforms of regenerative medicine
- Describe the diagnostic and therapeutic applications of regenerative medicine and surgery
- Engage with the patient population primed for regenerative solutions

Day 2: Regenerative Procedures

- Understand the challenges to effective delivery of regenerative therapeutics
- Understand how current techniques are being used to provide regenerative solutions
- Engage in regenerative surgical techniques utilized in clinical trials

Day 3: Patient Portal to Clinical-Grade Manufacturing

- Understand and demonstrate proficiency in the current practice in Mayo's Regenerative Medicine Clinic
- Understand how cells are generated for clinical utilization (GMP)
- Recognize the process leading to clinical utilization of regenerative therapeutics
- Recognize the current role of regenerative medicine and surgery in patient care

Day 4: Bench-to-Bedside Translation

- Understand how current ethical issues have influenced the progress of stem cell research
- Recognize the importance of preclinical models for testing feasibility, safety and efficacy of regenerative therapeutics
- Understand the techniques used to deliver cell-based biologics in models of disease

Day 5: Regenerative Medicine: What does this mean to me?

- Demonstrate an understanding for regenerative medicine and its contribution to meet patient and societal needs
- Learn about how to incorporate regenerative strategies into your clinical training
- Understand the steps to bring discovery into the clinic through commercialization and community outreach

Course Philosophy

“Regenerative medicine is at the vanguard of health care poised to offer solutions for many of today’s incurable diseases. Accordingly, there is a pressing need to develop, deploy, and demonstrate a viable framework for rollout of a regenerative medicine model of care. Translation of regenerative medicine principles into practice is feasible, yet clinical validity and utility must be established to ensure approval and adoption. Mayo Clinic has rolled out a blueprint for discovery, translation, and application of regenerative medicine therapies for accelerated adoption into the standard of care. To establish regenerative medical and surgical service lines, the Mayo Clinic model incorporates patient access, enabling platforms and delivery. Access is coordinated through a designated portal, the Regenerative Medicine Consult Service, serving to facilitate patient/provider education, procurement of biomaterials, referral to specialty services, and/or regenerative interventions, often in clinical trials. The Mayo Clinic roadmap exemplifies an integrated organization in the discovery, development, and delivery of regenerative medicine within a growing community of practice at the core of modern health care.” Terzic A, Pfenning MA, Gores GJ, Harper CM. *Stem Cells Translational Medicine*; 2015.

“Regenerative medicine, a paragon of future healthcare, holds unprecedented potential in extending the reach of treatment modalities for individuals across diseases and lifespan. Emerging regenerative technologies, focused on structural repair and functional restoration, signal a radical transformation in medical and surgical practice. Regenerative medicine is poised to provide innovative solutions in addressing major unmet needs for patients, ranging from congenital disease and trauma to degenerative conditions. Realization of the regenerative model of care predicates a stringent interdisciplinary paradigm that will drive validated science into standardized clinical options. Designed as a catalyst in advancing rigorous new knowledge on disease causes and cures into informed delivery of quality care, the Mayo Clinic regenerative medicine blueprint offers a patient-centered, team-based strategy that optimizes the discovery–translation–application roadmap for the express purpose of science-supported practice advancement.” Terzic A, Harper CM, Gores GJ, Pfenning MA. *Stem Cells and Development*; 2013.