

# Mayo Clinic Symposium on Regenerative Medicine and Surgery

## PROGRAM SCHEDULE

Thursday, November 4, 2021	
5:00–7:00 p.m.	<b>Registration &amp; Welcome Reception</b> (Grab and Go)
Friday, November 5, 2021	
7:15 a.m.	<b>BREAKFAST – Registration</b>
8:00 a.m.	<b>Welcome &amp; Overview of the Symposium</b> <i>Richard E. Hayden, M.D., Mayo Clinic, Symposium Director</i>
8:15 a.m.	<b>The Future of Regenerative Medicine</b> <i>Julie Allickson, Ph.D.</i>
8:35–10:45 a.m.	<b>Advanced Biomanufacturing: Considerations for Biologic Therapeutics</b> Moderator: <i>Julie Allickson, Ph.D.</i>
8:50 a.m.	Cellular Therapies in the Treatment of Mucosal Immune Mediated Diseases: Update on Clinical Experience in IBD <i>William Faubion, Jr. M.D.</i>
9:05 a.m.	Innovations in Tissue Engineering- A Promising New Potential for Patients (VIRTUAL) <i>Juliana Blum, Ph.D., Humacyte</i>
9:20 a.m.	The Human Acellular Vessel (HAV) as a Vascular Implant for Limb Salvage: A Mayo-FDA Collaborative Under Expanded Access IND Provisions (VIRTUAL) <i>Todd E. Rasmussen, M.D.</i>
9:35 a.m.	Extracellular Vesicle Platform at Mayo Clinic from a Polyvalent to More Targeted Technologies (VIRTUAL) <i>Atta Behfar, M.D., Ph.D.</i>
9:50 a.m.	FDA Regulation of Cellular Products and Derivatives (VIRTUAL) <i>Peter Marks, M.D., Ph.D., U.S. Food and Drug Administration</i>
10:05 a.m.	Panel Discussion
10:30 a.m.	<b>BREAK</b>
10:45- 12:10 p.m.	<b>Advanced Biomanufacturing: Material Considerations</b> Moderator: <i>Jos Malda, Ph.D., UMC Utrecht (VIRTUAL) &amp; David G. Lott, M.D.</i>
10:50 a.m.	Mayo Clinic Experience With 3D Printing of Patient-specific Implants <i>David G. Lott, M.D.</i>

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11:05 a.m.	Power of Biofabrication (VIRTUAL) <i>Jos Malda, Ph.D., University Medical Center Utrecht</i>
11:20 a.m.	Volumetric Bioprinting: Speeding up the Process (VIRTUAL) <i>Riccardo Levato, Ph.D., University Medical Center Utrecht</i>
11:35 a.m.	Multimaterial Biofabrication <i>Yu Shrike Zhang, Ph.D., Harvard Medical School, Brigham and Women's Hospital</i>
11:50 a.m.	Panel Discussion
12:05 p.m.	<b>LUNCH</b>
1:05- 2:50 p.m.	<b>Advanced Biomanufacturing Execution: Bench to Bedside</b> Moderator: <i>Richard E. Hayden, M.D.</i>
1:10 p.m.	Entrepreneurship <i>Stephen C. Ekker, Ph.D.</i>
1:25 p.m.	Regulatory Guidance: Start to Finish <i>Heather Hatcher, Ph.D., Womble Bond Dickinson</i> <i>Karthika Perumal, Ph.D., Womble Bond Dickinson</i>
2:15 p.m.	Regulatory Considerations: Biomanufacturing <i>Richard McFarland, M.D., Ph.D., ARMI   BioFabUSA</i>
2:35 p.m.	Panel Discussion
2:50 p.m.	<b>BREAK</b>
3:05- 4:40 p.m.	<b>Aging</b> Moderator: <i>Guojun Bu, Ph.D.</i>
3:10 p.m.	Reversing Aging: Regenerating and Rejuvenating Aged Muscles (VIRTUAL) <i>Helen Blau, Ph.D., Stanford University</i>
3:35 p.m.	Reprogram Towards Endogenous Regeneration of the Musculoskeletal System <i>Georg Duda, Ph.D., Charité – Universitätsmedizin Berlin (VIRTUAL)</i> <i>BIH-Julius Wolff Institute of Biomechanics and Musculoskeletal Regeneration</i>
3:55 p.m.	Neurodegeneration as an Effect of Aging: Rejuvenation and Regeneration <i>Guojun Bu, Ph.D.</i>
4:10 p.m.	Regenerative Disruptors: Science of Skin Aging <i>Saranya P. Wyles, M.D., Ph.D.</i>

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4:25 p.m.	Panel Discussion
4:40 p.m.	<b>Adjourn</b>
5:00–7:00 p.m.	<b>Conference Reception (COVID Precautions)</b>

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## PROGRAM SCHEDULE

Saturday, NOVEMBER 6, 2021	
7:15 a.m.	<b>BREAKFAST</b>
8:00 a.m.	<b>Welcome &amp; Overview of Day 2</b> <i>Richard E. Hayden, M.D.</i>
8:15–10:00 a.m.	<b>Regenerative Care: Musculoskeletal Conditions</b> Moderator: <i>Daniel B. F. Saris, M.D., Ph.D.</i>
8:15 a.m.	Intro Ortho MSK Reg Med 2021 and Beyond <i>Daniel B. F. Saris, M.D., Ph.D.</i>
8:20 a.m.	Challenges and Trends in MSK Regenerative Medicine (VIRTUAL) <i>Martin Stoddart, Ph.D., FRSB, AO Research Institute Davos</i>
8:40 a.m.	Onco-Regenerative Medicine, Muscle and Nerves (VIRTUAL) <i>Steven L. Moran, M.D., Matthew T. Houdek, M.D.</i>
9:05 a.m.	Regenerative Options for Hip Avascular Necrosis (VIRTUAL) <i>Rafael J. Sierra, M.D.</i>
9:15 a.m.	Multidisciplinary Team Approach - From Product Concept to Patient Bedside <i>Aaron J. Krych, M.D. (VIRTUAL), Mario Hevesi, M.D., Ph.D. (VIRTUAL), Zachary T. Resch, Ph.D. (on stage)</i>
9:30 a.m.	Allogenic/Autologous MSCs: How to Expand and Take to the Next Level <i>Allan B. Dietz, Ph.D.</i>
9:45 a.m.	Panel Discussion <i>Allan B. Dietz, Ph.D., Zachary T. Resch, Ph.D., Daniel B. F. Saris, M.D., Ph.D.</i>
10:00 a.m.	<b>BREAK</b>
10:15- 12:00 p.m.	<b>Biotechnology Ecosystems to Drive Regenerative Medicine</b> Moderator: <i>Julie Allickson, Ph.D.</i>
10:20 a.m.	Regenerative Initiatives - Aiming at Translation (VIRTUAL) <i>Georg Duda, Ph.D., Charité - Universitätsmedizin Berlin</i> <i>BIH-Julius Wolff Institute of Biomechanics and Musculoskeletal Regeneration</i>
10:35 a.m.	Established Regenerative Initiatives – State (VIRTUAL) <i>Maria T. Millan, M.D., California Institute for Regenerative Medicine (CIRM)</i>

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10:55 a.m.	Regenerative Initiatives - Bioindustry <i>Jared Matthews, ARMI   BioFabUSA</i> <i>Richard McFarland, Ph.D., M.D., ARMI   BioFabUSA</i>
11:20 a.m.	Panel Discussion
11:30 a.m.	Roundtable: Emerging Regenerative Initiatives- Arizona <i>Moderator: Richard J. Gray M.D.</i> <i>Christina Corieri, Senior Policy Advisor to Arizona Governor Doug Ducey</i> <i>Christine Mackay, Phoenix Community and Economic Development Director</i> <i>Joan Koerber-Walker, Arizona Bioindustry Association (AZBio)</i>
12:00 p.m.	<b>LUNCH</b>
1:00- 3:00 p.m.	<b>Regenerative Therapies in Lung Diseases and Organ Transplantation</b> <i>Jorge M. Mallea, M.D.</i>
1:00 p.m.	Cellular and Cell-derived Therapies in Lung Diseases <i>Jorge M. Mallea, M.D.</i>
1:15 p.m.	The Niche and Lung Regeneration (VIRTUAL) <i>Douglas G. Brownfield, Ph.D.</i>
1:45 p.m.	Recellularization of Lung Scaffolds <i>Ryan Bonvillain, Ph.D., United Therapeutics Corporation</i>
2:00 p.m.	Permanent Respiratory Support <i>Keith E. Cook, Ph.D., Carnegie Mellon University</i>
2:15 p.m.	Lung Regeneration Through Xenogeneic Cross-circulation (VIRTUAL) <i>Matthew Bacchetta, M.D., M.B.A., M.A., Vanderbilt University Medical Center</i>
2:30 p.m.	Transforming Transplant <i>C. Burcin Taner, M.D.</i>
2:45 p.m.	Panel Discussion
3:00 p.m.	<b>BREAK</b>
3:15- 4:50 p.m.	<b>Neuroregeneration</b> <i>Moderator: Alfredo Quinones-Hinojosa, M.D.</i>
3:20 p.m.	Translating Neuroregeneration <i>Terence C. Burns, M.D., Ph.D.</i>

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3:35 p.m.	Mesenchymal Stem Cells for Stroke <i>Abba C. Zubair, M.D., Ph.D.</i>
3:50 p.m.	Mesenchymal Stem Cells and Pain/Spine Disorders <i>Wenchun Qu, M.D., Ph.D.</i>
4:05 p.m.	Neuro-informatics, Spinal Cord Injury, Molecular Mechanisms of Spine Degeneration <i>Mohamad Bydon, M.D. (VIRTUAL)</i>
4:20 p.m.	Mesenchymal Stem Cells and Clinical Trials in Brain Cancer <i>Alfredo Quinones-Hinojosa, M.D.</i>
4:35 p.m.	Panel Discussion
4:50 p.m.	<b>Adjourn</b>

**Sunday, November 7, 2021**

7:15 a.m.	<b>BREAKFAST</b>
8:00 a.m.	<b>Welcome &amp; Overview of Day 3</b> <i>Richard E. Hayden, M.D.</i>
8:15- 10:05 a.m.	<b>Clinical Application of Biomanufactured Technologies</b> Moderator: <i>William A. Faubion, Jr. M.D.</i>
8:20 a.m.	Matrix-Delivered Autologous Mesenchymal Stem Cell Therapy for Refractory Inflammatory Bowel Disease <i>William A. Faubion, Jr. M.D.</i>
8:35 a.m.	Regenerative Immunotherapy (CAR-T) <ul style="list-style-type: none"> <li>• Current Cancer Cell Therapy Landscape <i>Yi Lin, M.D., Ph.D.</i></li> <li>• Integrating Vaccine and Cell Therapy for Hematologic Malignancies (VIRTUAL) <i>David E. Avigan, M.D., Beth Israel Deaconess Medical Center</i></li> <li>• CAR-T Innovation (VIRTUAL) <i>Saad J. Kenderian, M.B., Ch.B.</i></li> <li>• Cancer Hope Driven by T Cells (VIRTUAL) <i>Hong Qin, M.D., Ph.D.</i></li> </ul>
9:50 a.m.	Panel Discussion <i>William A. Faubion, Jr. M.D., Yi Lin, M.D., Ph.D., David E. Avigan, M.D., Allan B. Dietz, Ph.D., Michael P. Gustafson, Ph.D., Saad J. Kenderian, M.B., Ch.B., Hong Qin, M.D., Ph.D.</i>
10:05 a.m.	<b>BREAK</b>
10:20- 12:15 p.m.	<b>Educating &amp; Empowering the Future Workforce</b> Moderator: <i>Richard E. Hayden, M.D.</i>
10:25 a.m.	Overview of Mayo Clinic Regenerative Education Programs <i>Richard E. Hayden, M.D., Saranya P. Wyles, M.D., Ph.D.</i>
10:40 a.m.	Spotlight: Building Mayo Clinic's Regenerative Sciences Ph.D. Program (VIRTUAL) <i>Isobel Scarisbrick, Ph.D.</i>
10:55 a.m.	Educating Regenerative Medicine-seeking Patients Panel <i>Shane Shapiro, M.D., Jennifer Arthurs, APRN, Zubin Master, Ph.D. (VIRTUAL)</i>
11:15 a.m.	ARMI   BioFabUSA Showcase: Education and Workforce Development Projects <i>Taylor McLeod, B.S., M.S., ARMI   BioFabUSA (VIRTUAL)</i>

11:45 a.m.	Spotlight: Wake Forest Education and Workforce Development <i>Gary M. Green, Ed.D., Wake Forest Institute for Regenerative Medicine</i>
12:00 p.m.	Panel
12:15- 12:30 p.m.	<b>Closing Comments</b> <i>Richard E. Hayden, M.D.</i>
12:30 p.m.	<b>LUNCH</b> Grab and Go

\*Agenda subject to change