

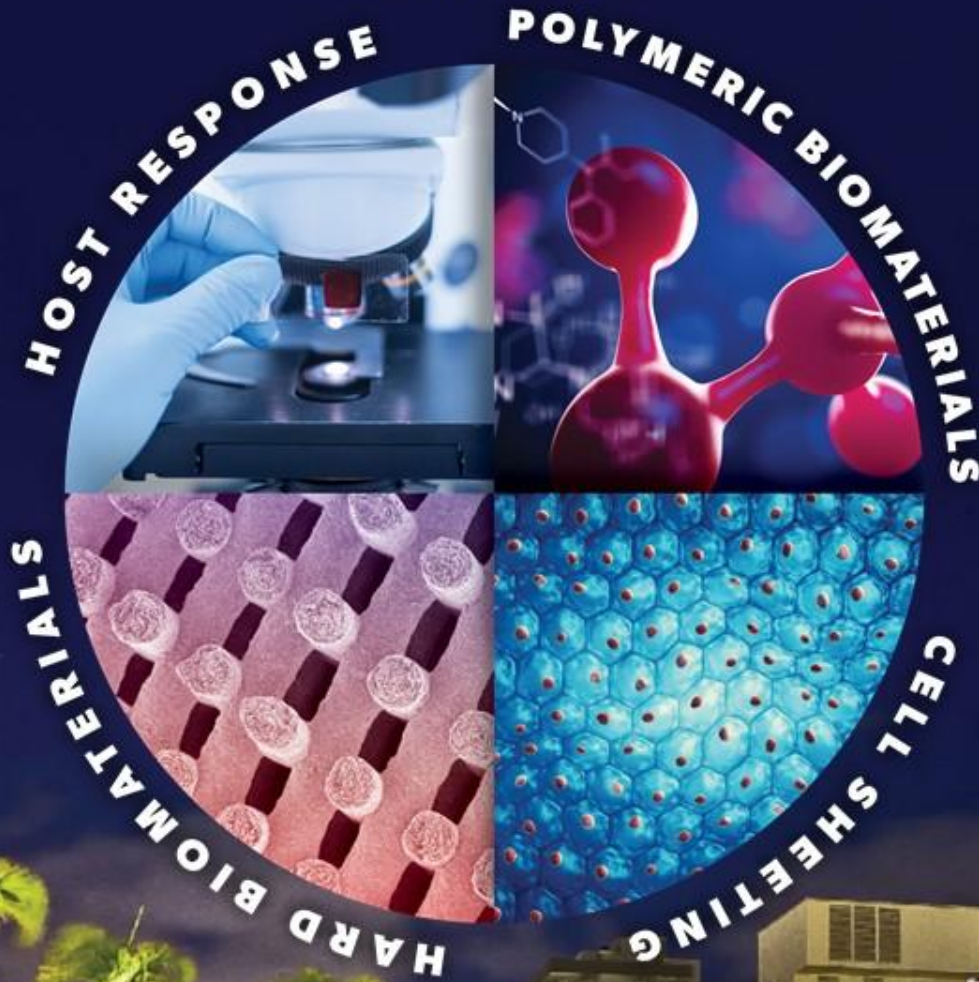


Society For
Biomaterials

JOINT SYMPOSIUM

January 8 –10, 2022

HILTON WAIKIKI BEACH
HONOLULU, HI



FINAL PROGRAM



Welcome

Dear Attendees:

Welcome to the 2022 Hawaii Joint Symposium sponsored by the Japanese Society for Biomaterials (JSB) and the Society For Biomaterials, USA (SFB). This event recognizes four outstanding individuals for their achievements in research related to biomaterials including Tadashi Kokubo, PhD (Kyoto University and Chubu University), Teruo Okano, PhD (Tokyo Women's Medical University and University of Utah), James M. Anderson, MD, PhD (Case Western Reserve University) and Arthur Coury, PhD (Northeastern University). The enormous impact of these individuals on the field of biomaterials spans the areas of ceramics and bioglass, metals, polymeric biomaterials, tissue engineering, implant pathology, and cell-material interactions. This meeting was envisioned in 2014, when both Societies met in Japan and discussed the need to strengthen relationships between various biomaterials societies around the world, especially the interaction of Japanese and American biomaterial scientists. As a first start, a symposium was suggested and then organized with the theme being research recognizing outstanding scientists and contributors to the field of biomaterials research from each country. The JSB and SFB each selected two individuals that have made substantial contributions to the field of biomaterials and agreed that the meeting should be held in 2020 in Hawaii. Unfortunately, events in the world changed and two years later, we are finally able to welcome you to our Joint Symposium in beautiful Waikiki Beach in Honolulu with a hybrid format to engage more scientists across the world.

Our exciting program consists of four sessions that highlight the areas pioneered by the honorees and a new session highlighting Women in Biomaterials. Each of the honoree sessions consists of invited lectures and selected abstracts in each area of expertise: Bioglasses, Ceramics, and Other Hard Materials; Implant Pathology & The Foreign Body Reaction; Tissue Engineering; and Polymeric Biomaterials. The highly anticipated Women in Biomaterials session will feature invited talks by Tatiana Segura, PhD (Duke University) and Helen Lu, PhD (Columbia University), as well as eight 15-minute podium talks and seven 5-minute rapid fire presentations. Other events include a poster session, luncheons and a BASH, a tradition of the biomaterial societies around the world.

In order for this day to become possible, a number of individuals played significant roles in planning and organizing this meeting. The Joint Symposium Committee consists of members of the Society For Biomaterials including Drs. Elizabeth Cosgriff-Hernandez and Nicholas Ziats (SFB co-chairs) and Shelly Sakiyama-Elbert and Guigen Zhang. From the Japanese Society for Biomaterials, Drs. Kazuhiko Ishihara, Nobuhiko Yui, Tetsuji Yamaoka and Osamu Suzuki served as JSB co-chairs with additional JSB members, Drs. Akihiko Kikuchi, Kunio Ishikawa and Emilio Hara, serving on the program committee. The staff members from AH Headquarters, Dan Lemyre, Ashton Hald, and Sheena Seppanen, have been instrumental in navigating the changing needs of this meeting in these challenging times. This group has done a wonderful job working with the Hilton Hotel Waikiki Beach to ensure that this event can occur in a safe manner and after two postponements, now it finally can!

We hope that you enjoy your stay in Hawaii for those that are here and for those that could not attend in person, your enthusiasm and commitment to attend this meeting virtually is appreciated.

Sincerely,

The JSB/SFB Joint Symposium Committee

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Thank you to our sponsors for this event:



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OUR HONOREES



Tadashi Kokubo, PhD is Professor Emeritus of Kyoto University and Chubu University, Japan. He developed a high-strength bone-bonding bioactive glass-ceramic A-W for bone substitutes, bone-bonding bioactive titanium metal and its alloys for artificial joints, spinal fusion devices etc, and a simulated body fluid (SBF) for evaluating bone-bonding bioactivity of a material *in vitro*. Dr. Kokubo has received many awards including Academic Award and Japan Ceramic Great Award from Ceramic Society of Japan, Academic Award and Distinguished Service Award from Japanese Society for Biomaterials, Inoue Harushige Award from Research Development Corporation of Japan, George Winter Award from European Society for Biomaterials, and Stookey Lecture of Discovery Award from American Ceramic Society. He is a member of World Academy of

Ceramics, and a fellow of American Institute for Medical and Biological Engineering, American Ceramic Society and International Union of Societies for Biomaterial Science and Engineering. He was a member of editorial board of Journal of Biomedical Materials Research-Part A, Journal of Material Science: Materials in Medicine, Biomaterials etc. He is the author or coauthor of more than 900 publications. He is the editor of the book entitled “Bioceramics and their clinical applications” (Woodhead Pub., 2008).



James M. Anderson, MD, PhD, is a Distinguished Professor of Pathology, Biomedical Engineering and Macromolecular Science at Case Western Reserve University in Cleveland, Ohio. He is being recognized in this symposium for his significant accomplishments in the field of Foreign Body Reaction as well as Implant Pathology. Dr. Anderson has received many awards/honors including the Elsevier Biomaterials Gold Medal Award, the Honoris Causa Degree by the University of Geneva, the Acta Biomaterialia Gold Medal, the SFB Founders and Service Awards and most recently the Chandra P. Sharma Award by the Indian Society of Biomaterials. He is a founding member of the Society for Biomaterials and has served as a consultant to the NIH, FDA

and ISO. He is a member of the Institute of Medicine National Academy and the National Academy of Engineering and is past Editor-in-Chief (over 30 years) of the Journal of Biomedical Materials Research-Part A. Dr. Anderson has worked in the areas of biomaterials, medical devices and prostheses for the past 45 years, ranging from the clinical pathologic evaluation of retrieved implants from humans and animals to fundamental studies of cellular interactions with biomaterials, especially with regard to how macrophages and foreign body giant cells interact with biomaterials.

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Teruo Okano, PhD is a Director and Professor of Center for Advanced Biomedical Science at Tokyo Women's Medical University and Director and Professor of Cell Sheet Tissue Engineering Center (CSTEC) as well as Adjunct Distinguished Professor of Department of Pharmaceutics and Pharmaceutical Chemistry at University of Utah. He is the fellow of Royal Society of Chemistry, American Institute of Medical and Biological Engineering and Controlled Release Society. He was the president of scientific societies, such as The Japanese Society for Regenerative Medicine, The Japanese Society of Drug Delivery Systems, Asian Federation of Biomaterials Society and Tissue Engineering & Regenerative Medicine International Society-Asia Pacific. He is the author or co-author of more than 1,000 peer-reviewed journal articles as well as over 300 books and book

chapters. The citations are 99,738 and h-index is 164. He received numerous awards including Emperor's Medal with Purple Ribbon (National Meritorious Achievement Award) (2009), Commendation for Science & Technology (Education Ministry) (2009), Nagai Innovation Award (Controlled Release Society) (2006), Leona Esaki Prize (2005), Founders Award (Controlled Release Society) (2000), Clemson Award for Basic Research (Society for Biomaterials) (1997), Outstanding Paper Awards (Controlled Release Society) (1990, 1995, 1996 and 1997).



Arthur J. Coury is a pioneer in the development of polymeric biomaterials for medical products such as implantable electronic devices, hydrogel-based devices, and drug delivery systems. He holds over fifty-seven distinct patents and has published and presented widely in his field. His industrial career included positions as: Senior Research Chemist at General Mills, Inc., Director, Polymer Technology and Research Fellow at Medtronic, Inc., Vice President, Research and Chief Scientific Officer at Focal, Inc., and Vice President, Biomaterials Research at Genzyme Corporation. He is currently a University Distinguished Professor at Northeastern University. His academic service has also included adjunct or affiliate appointments at the University of Minnesota, the

Harvard-MIT Graduate Program in Health Sciences and Technology, the University of Cape Town, the University of Trento, Sichuan University, Hubei University, and Northeastern University. He has served as President of both the Society for Biomaterials and the American Institute for Medical and Biological Engineering. He has been recognized by the highest awards from the Society for Biomaterials including the Founders Award, the C. William Hall Award, and the Technology Innovation and Development Award. He is a member of the National Academy of Engineering, an American Chemical Society Fellow, and recipient of the AIMBE Pierre Galletti award.

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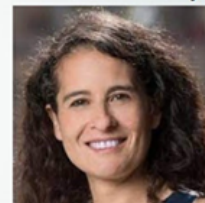
HILTON WAIKIKI BEACH
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SPECIAL SESSION HIGHLIGHTING WOMEN IN BIOMATERIALS

Invited talks by:

Tatiana Segura, PhD
Duke University

Helen Lu, PhD
Columbia University



Session Chairs:

Drs. Julianne Holloway & Ana Maria Porras

Monday, January 10, 2022
1:00 PM HST

Sponsored by



Shelly Sakiyama-Elbert and Elizabeth Cosgriff-Hernandez organized a new session highlighting **Women in Biomaterials**. This highly anticipated session will feature invited talks by leaders in the field of biomaterials, Drs. Tatiana Segura (Duke University) and Helen Lu (Columbia University). Julianne Holloway (Arizona State University) and Ana Maria Porras (University of Florida) will moderate the session of invited talks, podium talks, and rapid fire presentations from women in the field. Of the many wonderful speakers, four were selected to receive this year's 2022 Emerging Scholar Award, a travel award for students and post-docs, graciously sponsored by the *Journal of Materials Chemistry B* and *Materials Advances*. The four awardees are: Margaret Brunette (University of Michigan), Maria Coronel, PhD (Georgia Institute of Technology), Ru-Siou (Alice) Hsu, PhD (Stanford University), and Sarah Saxton (University of Washington). We look forward to hearing about the important biomaterials work being led by these remarkable women. Make sure to attend the last session of the Joint Symposium as you will not want to miss out on these incredible talks!

JOINT SYMPOSIUM

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HONOLULU, HI

SFB 2022 Award Recipients



Margaret Brunette

*Immune-isolating
Poly-ethylene Glycol-based
Capsules Protect Human Ovarian
Allo- and Xenografts from
Immune Rejection*



Maria Coronel, PhD

*Synthesis of Hydrolytically
Degradable Microgels Using
Droplet Microfluidics*



Ru-Siou (Alice) Hsu, PhD

*Wireless Charging-Mediated
Angiogenesis and Nerve Repair by
Adaptable Microporous Hydrogels
from Conductive Building Blocks*



Sarah Saxton

*Adult Hepatocyte Organoids for
Engineered Liver Tissues*



SFB 2022 Emerging Scholar Awardees

sponsored by the Journal of Materials Chemistry B & Materials Advances



Cato T. Laurencin, MD, PhD Travel Fellowships

Named in honor of a distinguished member of the Society For Biomaterials, Cato T. Laurencin, M.D., Ph.D., the Travel Fellowship will support underrepresented minorities in the field of biomaterials by providing an undergraduate student the resources to attend the annual meeting of the Society For Biomaterials, and to become a member of the Society. The goal of this initiative is to stimulate/encourage recipients to pursue a career in biomaterials.



Breajah Tyson
University of Connecticut



Helena Freire Haddad
Northwestern University (2020)
pursuing her PhD at Duke University



Alessia Stewart
North Carolina Agricultural and
Technical State University (2020),
Project Engineer with Project Farma

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HONOLULU, HI

*Scientific Program (subject to change):
All times listed in Hawaii Standard Time*

Saturday, January 8, 2022

12:45 – 1:00p.m.

Welcome to the SFB/JSB Joint Symposium

*Nicholas P. Ziats, PhD and Tetsuji Yamaoka, PhD - **VIRTUAL***

Presentation of Cato T. Laurencin, MD, PhD Travel Fellowship Awards

Presentation of SFB Emerging Scholar Awards

Session I: Bioglasses/Ceramics/Other Hard Materials

*Session Chair – Osamu Suzuki, PhD - **VIRTUAL***

1:00 – 1:05 p.m.

Opening Remarks - Osamu Suzuki, PhD - **VIRTUAL**

1:05 – 1:52 p.m.

Driving Force for Promoting Innovation of Biomaterials: From Bioglass to Bioactive Metals

*Honoree: Tadashi Kokubo, PhD | Professor Emeritus, Kyoto University, Chubu University, Japan - **VIRTUAL***

1:52 – 2:07 p.m.

Carbonate Apatite Artificial Bone Fabricated From Vaterite Replaces to Bone Quickly
*Kunio Ishikawa, PhD | Kyushu University - **VIRTUAL***

2:07 – 2:22 p.m.

A Novel Mechanism for Graft Resorption and Bone Regeneration Through Inhibition of Human Osteoclast Activities and Induction of Osteoblast Osteogenic Differentiation by SCPC Bioactive Ceramic

Ahmed El-Ghannam PhD | UNC Charlotte

2:22 – 2:37 p.m.

Tooth Surface Functionalization via Laser-Assisted Pseudo-Biomineralization

*Ayako Oyane, PhD | National Institute of Advance Industrial Science and Technology (AIST) - **VIRTUAL***

2:37 – 2:52 p.m.

Phage-Mimicking, Broad-Spectrum Antibacterial Nanoparticles Against Multi-Drug Resistant Bacteria

*Prakash Nallathamby, PhD | Berthaiume Institute for Precision Health – University of Notre Dame - **VIRTUAL***

2:52 – 3:22 p.m.

Poster Break

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Saturday, January 8, 2022 (cont.)

Session I: Bioglasses/Ceramics/Other Hard Materials

Session Chair – Osamu Suzuki, PhD - **VIRTUAL**

- 3:22 – 3:50 p.m. **Invited Talk: Roles of Ceramics and Bioglasses in Absorbable Polymer Composites**
*G. Lawrence Thatcher, President and CEO | TESco Associates, Inc., USA - **VIRTUAL***
- 3:50 – 4:10 p.m. **Invited Talk: Effect of Octacalcium Phosphate on Enhancing Osteocyte Differentiation During Orthotopic Bone Regeneration**
*Osamu Suzuki, PhD | Professor, Division of Craniofacial Function Engineering, Tohoku University Graduate School of Dentistry, Japan - **VIRTUAL***
- 4:10 – 4:25 p.m. **Bioabsorbable Carbonate Apatite Coating for Biodegradable Mg Alloy and Osteoclast and Osteoblast Response**
*Sachiko Hiromoto, PhD | National Institute of Materials Science - **VIRTUAL***
- 4:25 – 4:40 p.m. **Two-dimensional Arrangement of Cells by Light Irradiation**
*Masato Ueda, PhD | Kansai University - **VIRTUAL***
- 4:40 – 4:55 p.m. **Formation of Visible-light-Responsive TiO₂ Layers on Practical Dental Titanium Alloys by Two-step Thermal Oxidation and their Antibacterial Properties**
*Kyosuke Ueda, PhD | Tohoku University - **VIRTUAL***
- 4:55 – 5:00 p.m. **Closing Remarks - Osamu Suzuki, PhD - **VIRTUAL****
- 5:00 – 6:30 p.m. Opening Reception - Garden Gazebo**



Sunday, January 9, 2022

Session 2: Implant Pathology & The Foreign Body Reaction

Session Chairs – Elizabeth Cosgriff-Hernandez, PhD and Nicholas P. Ziats, PhD

- 8:00 – 8:15 a.m. **Opening Remarks** – *Nicholas P. Ziats, PhD*
- 8:15 – 8:45 a.m. **Invited Talk: Macrophages, Inflammation and Bone: From Wear Particle Disease to Tissue Regeneration**
Stuart Goodman, MD, PhD | Stanford University Medical Center Outpatient Center - VIRTUAL
- 8:45 – 9:00 a.m. **Design of Biomaterials to Modulate Inflammation**
Kam Leong, PhD | Columbia University
- 9:00 – 9:15 a.m. **MI Macrophages Attenuate Hepatocellular Carcinoma (HCC) Progression**
John Kao, PhD | The University of Hong Kong - VIRTUAL
- 9:15 – 9:30 a.m. **In Vivo Evaluation of Macrophage Polarization in Response to Raspberry Ketone-Loaded Chitosan Membranes**
Melika Rad, PhD | The University of Memphis
- 9:30 – 9:45 a.m. **Succinate base Adjuvant-less Cancer Vaccine Modifies**
Abhniav Acharya, PhD | Arizona State University

9:45 – 10:15 a.m. Poster Break

- 10:15 – 10:35 a.m. **Invited Talk: Macrophage-mediated Degradation of Polyurethanes: Lessons in Predicting Biostability**
Elizabeth Cosgriff-Hernandez, PhD | University of Texas at Austin
- 10:35 – 10:50 a.m. **Controlling Microbial Infections by Submicron Textured Biomaterials Surfaces**
Chris Siedlecki, PhD | Penn State University

Sunday, January 9, 2022 (cont.)

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Session 2: Implant Pathology & The Foreign Body Reaction

Session Chairs – Elizabeth Cosgriff-Hernandez, PhD and Nicholas P. Ziats, PhD

- 10:50 – 11:05 a.m. ***Immune Response of Decellularized Arterial Scaffolds Implanted in Diabetic and Non Diabetic Rats***
Bethany Lefeber, PhD | Clemson University - VIRTUAL
- 11:05 – 11:20 a.m. ***Overview of the Biocompatibility of Tantalum Coatings with Various Tissues***
Jessica DeBerardinis, PhD | Ultramet
- 11:20 – 11:35 a.m. ***Initial Immune Response to Silk Fibroin Hydrogels Modified with a FRET-MMP sensor***
Yusuke Kambe, PhD | National Agriculture and Food Research Organization – VIRTUAL
- 11:35 – 11:45 a.m. ***Honoree Introduction***
Nicholas Peppas, ScD, University of Texas at Austin
- 11:45 – 12:00 noon ***Implant Pathology and the Foreign Body Reaction***
Honoree: James M. Anderson, MD, PhD, Case Western Reserve University

12:00 – 1:00 p.m. Lunch (provided)

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Session 3: Tissue Engineering

Session Chair – Akihiko Kikuchi, PhD - **VIRTUAL**

- 1:00 – 1:05 p.m. **Opening Remarks – Akihiko Kikuchi, PhD - **VIRTUAL****
- 1:05 – 1:20 p.m. ***Synthetic Hydrogels for Islet Vascularization, Engraftment, and Immune Acceptance to Treat Type 1 Diabetes***
Andres Garcia, PhD | Georgia Institute of Technology
- 1:20 – 2:00 p.m. ***Design of Intelligent Surfaces for Cell Sheet Tissue***
Honoree: Teruo Okano, PhD | Director and Professor Emeritus, Center for Advanced Biomedical Science, Tokyo Women’s Medical University, Japan | Director and Distinguished Adjunct Professor, Cell Sheet Tissue Engineering Center (CSTEC), University of Utah, USA - **VIRTUAL**
- 2:00 – 2:15 p.m. ***Biomaterials Technology to Promote in vivo Cell Recruitment for Regenerative Therapy***
*Yasuhiko Tabata, PhD | Institute for Frontier Life and Medical Sciences, Kyoto University - **VIRTUAL***
- 2:15 – 2:30 p.m. ***Long Term Vocal Fold Augmentation with Microporous Annealed Particle (MAP) Hydrogel***
Lauren Pruett, PhD | University of Virginia
- 2:30 – 2:45 p.m. ***“Navigator” Bearing Single-Chain Variable Fragment Switched Beta 2-microglobulin Metabolism to Liver***
*Akihisa Otaka, PhD | National Cerebral and Cardiovascular Center Research Institute - **VIRTUAL***

2:45 – 3:15 p.m. **Poster Break**

- 3:15 – 3:35 p.m. **Invited Talk: *Clinical Application of Ultrahigh Hydrostatic Pressure Engineering***
*Tetsuji Yamaoka, PhD | Director, Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute, Japan - **VIRTUAL***



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Sunday, January 9, 2022 (cont.)

Session 3: Tissue Engineering

Session Chair – Akihiko Kikuchi, PhD - **VIRTUAL**

- 3:35 – 3:55 p.m. **Invited Talk: *Rapid Bone Regeneration Using Biomimetic Cellular Membrane Biocomposite***
*Emilio S. Hara, DDS, PhD | Research Associate Professor, Department of Biomaterials, Okayama University, Japan - **VIRTUAL***
- 3:55 – 4:10 p.m. ***Elucidating the Role of Hodgkin's Lymphoma Cells on Macrophage Invasion Using an Engineered Cryogel***
*Laura Bahlmann, BAsC | Schoichet Lab, BME, University of Toronto - **VIRTUAL***
- 4:10 – 4:25 p.m. ***Re-evaluation of Early Biomolecule Adsorption and Initial Osseointegration by an Engineering Perspective***
*Yaming Wang, PhD | Okayama University - **VIRTUAL***
- 4:25 – 4:40 p.m. ***Tissue Engineering the Subarachnoid Space***
*Rachael Sirianni, PhD | McGovern Medical School/University of Texas Health Science Center at Houston - **VIRTUAL***
- 4:40 – 4:55 p.m. ***Modulation of Macrophage-Mediated Cardiac Inflammation via Targeted Anionic Liposomes***
Tamer Elbayoumi, PhD | Midwestern University
- 4:55 – 5:00 p.m. **Closing Remarks - Akihiko Kikuchi, PhD - **VIRTUAL****
- 6:00 – 8:30 p.m. **BASH/LUAU - Pool Deck**

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Monday, January 10, 2022

Session 4: Polymeric Biomaterials

Session Chairs – *Barbara D. Boyan, PhD and William R. Wagner, PhD*

- 8:00 – 8:20 a.m. **Opening Remarks** – *Patrick Cahalan | Ension Inc. - VIRTUAL*
- 8:20 – 8:45 a.m. **Invited Talk: *Polyurethane Vascular Grafts: History, Hype and Healing***
Buddy D. Ratner, PhD | University of Washington
- 8:45 – 9:00 a.m. **Invited Talk: *Design and Procedure Optimization for Biomaterial Structural Supports in the Post-Infarct Heart***
William R. Wagner, PhD | Director, McGowan Institute for Regenerative Medicine
- 9:00 – 9:15 a.m. ***New Polyphosphazene Biomaterials with Improved Resistances to Microbial Infection and Thrombosis for Medical Device Coatings***
Lichong Xu, PhD | Penn State University
- 9:15 – 9:30 a.m. ***Thermoresponsive Shear-Thinning Biomaterial for the Treatment of Infections Associated with External Hemorrhages***
Marvin Mecwan, PhD | Terasaki Institute for Biomedical Innovation
- 9:30 – 9:45 a.m. ***Sliding Hydrogels with Tunable Mobility Enhance Cartilage formation by Chondrocytes and Stem Cells in a dose-dependent manner***
Xinming Tong, PhD | Stanford University
- 9:45 – 10:15 a.m. Poster Break**
- 10:15 – 10:40 a.m. **Invited Talk: *Novel Biomaterials and Scaffolds with Unique Properties for the Engineering of Difference Tissues***
Rui L. Reis, PhD | University of Minho
- 10:40 – 10:55 a.m. **Invited Talk: *Developing Technologies that Improve Osseous Implant Success In Conditions that Exhibit Compromised Bone Quality***
Barbara D. Boyan, PhD | Virginia Commonwealth University College of Engineering - VIRTUAL

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Monday, January 10, 2022 (cont.)

Session 4: Polymeric Biomaterials

Session Chairs – *Barbara D. Boyan, PhD and William R. Wagner, PhD*

- 10:55 – 11:10 a.m. ***Novel Short Chain Fatty Acid Delivery Platform Poly (ethylene glycol)-b-poly(vinyl ester)s Attenuates Diabetic Pathology***
*Babita Shahni, PhD | University of Tsukuba – **VIRTUAL***
- 11:10 – 11:25 a.m. ***Low Temperature Plasma Processing for 3D printed Polymeric Biomaterials' Interfaces***
Vinoy Thomas, PhD | University of Alabama at Birmingham
- 11:25 – 11:40 a.m. ***Optimal Orientations for Exciting the L and TV Ultrasonic Waves in Polyvinylidene Fluoride***
Guigen Zhang, PhD | University of Kentucky
- 11:40 – 12:00 noon ***Biomaterials Evolution: Commercial to “Designer” Polymers – A 50 Year Perspective***
Honoree: Arthur J. Coury, PhD

12:00 – 1:00 p.m. Lunch (lunch on your own)

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Monday, January 10, 2022 (cont.)

Session 4: Women in Biomaterials

Session Chairs – Julianne Holloway, PhD and Ana Maria Porras, PhD

- 1:00 – 1:05 p.m. **Opening Remarks** – Shelly Sakiyama-Elbert, PhD
- 1:05 – 1:35 p.m. **Invited Talk: MAPing Principles, Properties and Applications to Tissue Regeneration**
Tatiana Segura, PhD | Duke University - **VIRTUAL**
- 1:35 – 1:50 p.m. **Gut Microbiota Can Degrade Human Extracellular Matrix and Potentially Enhance Inflammation in Inflammatory Bowel Disease**
Ana Maria Porras, PhD | University of Florida
- 1:50 – 2:05 p.m. **MMP Regulated Release of SDF-1 α analog from Norbornene Hyaluronic Acid Microgels for TBI**
Sarah Stabenfeldt, PhD | Arizona State University
- 2:05 – 2:20 p.m. **Wireless Charging-Mediated Angiogenesis and Nerve Repair by Adaptable Microporous Hydrogels from Conductive Building Blocks**
Ru-Siou (Alice) Hsu, PhD | Stanford University - **VIRTUAL**
SFB 2022 EMERGING SCHOLAR AWARD RECIPIENT
- 2:20 – 2:35 p.m. **Immune-isolating Poly-ethylene Glycol-based Capsules Protect Human Ovarian Allo- and Xenografts from Immune Rejection**
Margaret Brunette | University of Michigan
SFB 2022 EMERGING SCHOLAR AWARD RECIPIENT
- 2:35 – 2:45 p.m. Coffee Break**
- 2:45 – 3:15 p.m. **Invited Talk: Biofabrication via Green Electrospinning**
Helen Lu, PhD | Columbia University



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Monday, January 10, 2022 (cont.)

Session 4: Women in Biomaterials

Session Chairs – Julianne Holloway, PhD and Ana Maria Porras, PhD

- 3:15 – 3:30 p.m. ***An In Vitro Platform to Spatiotemporally Control Multiple Bioactive Peptides Using Reversible DNA Handles***
Julianne Holloway, PhD | Arizona State University
- 3:30 – 3:45 p.m. **WITHDRAWN**
- 3:45 – 4:00 p.m. ***Adult Hepatocyte Organoids for Engineered Liver Tissues***
Sarah Saxton | University of Washington - VIRTUAL
SFB 2022 EMERGING SCHOLAR AWARD RECIPIENT
- 4:00 – 4:15 p.m. ***Synthesis of Hydrolytically Degradable Microgels Using Droplet Microfluidics***
Maria Coronel, PhD | Georgia Institute of Technology
SFB 2022 EMERGING SCHOLAR AWARD RECIPIENT

4:15 – 4:25 p.m. Coffee Break

- 4:25 - 5:00 p.m. **RAPID FIRE PRESENTATIONS**
- 4:25 – 4:30 p.m. ***3D Bioprinted Patient-Specific Extracellular Matrix Hydrogel Patches for Volumetric Muscle Loss***
Anne Behre, PhD | Carnegie Mellon University
- 4:30 – 4:35 p.m. ***Unraveling Vascularized Adipose Tissue Reconstruction by Using Collagen Microfibers Allows Multiple Applications from Breast Regeneration to Bioprinted Cell-Cultured Steak-Like Meat***
Fiona Louis, PhD | Osaka University - VIRTUAL

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Monday, January 10, 2022 (cont.)

Session 4: Women in Biomaterials

Session Chairs – Julianne Holloway, PhD and Ana Maria Porras, PhD

RAPID FIRE PRESENTATIONS (CONT.)

- 4:35 – 4:40 p.m. ***Cationic Nanogels for Oral Targeted siRNA Delivery to Macrophages for Treatment of Inflammatory Bowel Diseases***
Olivia Lanier, PhD | University of Texas at Austin
- 4:40 – 4:45 p.m. ***Engineered Implantable Vaccine Platform for Continuous Antigen-Specific Immunomodulation***
Dixita Viswanath, PhD | Texas A&M University and Houston Methodist Research Institute
- 4:45 – 4:50 p.m. ***Synthesis of Hydrolytically Degradable Microgels Using Droplet Microfluidics***
Marissa Wechsler, PhD | The University of Texas at San Antonio
- 4:50 – 4:55 p.m. **WITHDRAWN**
- 4:55 – 5:00 p.m. ***Porcine vs. Bovine Pericardium Assessment as a Leaflet in Aortic Valves***
Ekaterina Tkatchouk, PhD | Edwards LifeSciences
- 5:00 – 5:15 p.m. **Closing Remarks - Elizabeth Cosgriff-Hernandez, PhD, Shelly Sakiyama-Elbert, PhD, and Kazuhiko Ishihara, PhD**

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HONOLULU, HI

POSTER LISTINGS

* Also available as a virtual presentation

Bioglasses/Ceramics/Other Hard Materials

1. MOVED TO VIRTUAL
2. Multifunctional Titanium-based Biomaterials – Advantages of Nanostructures in Metallic Implants; Magdalena Jarosz, Jagiellonian University, Kraków, Poland *V18
3. Optimizing Acetaminophen Release Profiles from Silicas through Surface Functionalization; Maressa Schulze, Villanova University, Villanova, PA, USA *V20
4. Synthesis and Physicochemical Characterization of Silver Modified Tricalcium Phosphate Ag-βTCP and Ag-βTCP/poly(3-hydroxybutyrate) Scaffolds for Bone Tissue Regeneration; Szymon Skibinski, AGH University of Science and Technology, Kraków, Poland *V19
5. Silanization of Titanium and Hydroxyapatite for Loading and Release of 2-heptylcyclopropane-1-carboxylic acid; Zoe Harrison, University of Memphis, Memphis, TN, USA *V21
6. MOVED TO WOMEN IN BIOMATERIALS SESSION
7. MOVED TO WOMEN IN BIOMATERIALS SESSION

Implant Pathology & the Foreign Body Reaction

8. A Model of Open Reduction Fracture Fixation for Testing New Implant Surface Approaches in Diabetic Rats; Alexandra Arteaga, University of Texas at Dallas, Richardson, TX, USA *V26
8. MOVED TO VIRTUAL

Tissue Engineering

10. Fabrication of a Scaffold from Novel Tropoelastin-collagen Electrospun Yarn for Skin Tissue Regeneration; Daxian Zha, North Carolina State University, Raleigh, NC, USA *V135
11. Development of a Physiologically-Relevant, Serum-Free In Vitro Angiogenesis Platform; Travis W. Walker, South Dakota School of Mines and Technology, Rapid City, SD, USA
12. Engineered Osteoclasts: Potential Cell Therapy for Ectopic Calcification; Apichai Yavirach, University of Washington, Seattle, WA, USA *V136
13. Development of Hydrogel to Support Angiogenic Activities for Bone Regeneration; Bipin Gaihre, Mayo Clinic, Rochester, MN, USA
14. Separating Progenitor Cell Populations Involving Rotator Cuff Muscle; Breajah Tyson, Connecticut Convergence Institute for Translation in Regenerative Engineering, Farmington, CT, USA

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15. Quantitative CT Analysis and Mechanical Coupling of Implanted Bioresorbable Composite Scaffolds to Bone; David Margolis, University of Arizona, Tucson, AZ, USA *VI81
16. Foamed Calcium Phosphate Bone Cements with Biosurfactants – Cytotoxicity Studies; Ewelina Circhon, AGH University of Science and Technology, Kraków, Poland *VI37
17. A Fiber-Reinforced Composite Vascular Graft that Mediates the Macrophage Response; Fan Zhang, North Carolina State University, Raleigh, NC, USA *VI38
18. MOVED TO VIRTUAL
19. MOVED TO VIRTUAL
20. Mechanical Characterization and Neutrophil Extracellular Traps Response of a Novel Hybrid Geometry Polydioxanone Near-Field Electrospun Template; Gary Bowlin, University of Memphis, Memphis, TN, USA *VI39
21. In Vivo Delivery of Macrophage Subtypes via Genipin-Crosslinked Collagen Biotextile; Ilaha Isali, Case Western Reserve University, Cleveland, OH, USA *VI40
22. Bone Ingrown Dynamized Long Bone Segment Regeneration Scaffolds Successfully Support Full Body Weight within 9 Months; John A. Szivek, University of Arizona, Tucson, AZ, USA *VI70
23. Improving Cardiomyocyte Contractility Beating by Introducing Oxygen Releasing Microparticles; Kalpana Mandal, Terasaki Institute for Biomedical Innovation, Los Angeles, CA, USA
24. Substrate Stiffness Modulates Human Regulatory T Cell Induction and Metabolism; Lingting Shi, Columbia University, New York City, NY, USA *VI41
25. Effects of Endothelial Cell (EC) Seeding Density and Passage Number on Human EC-Mesenchymal Stem Cell (MSC); Maiko Sasaki, Emory University School of Medicine, Atlanta, GA, USA *VI42
26. Polymer Design & Glycosaminoglycan Ratio Modulate Physical & Bioactive Properties of GAG Hydrogels; Michael Nguyen, University of California, Davis, Davis, CA, USA *VI43
27. 40 μ m Diameter Pore, Precision-Templated Scaffolds Promote Recruitment of Pro-Healing Circulating Monocytes; Nathan Chan, University of Washington, Seattle, WA, USA *VI44
28. Type III Sodium-Dependent Phosphate Transporter Encoded by Gene Slc20a2 as a Hard Tissue Engineering Target; Philip Walczak, University of Washington, Seattle, WA, USA *VI45
29. Bone Regeneration in Sockets Grafted with Shefabone® SCPC Immediately Following Extractions; Randa Alfotawi, King Saud University, Riyadh, Saudi Arabia *VI46
30. Assessment of Novel Surgical Procedures to Regenerate Bone Using Decellularised Muscle and Bioactive Ceramic: A Histological Analysis; Randa Alfotawi, King Saud University, Riyadh, Saudi Arabia *VI47
31. Bioactive Tissue Scaffolds from Decellularized Ascidian Tunic; Sanjaraj Vijayavenkataraman, New York University | Abu Dhabi, Abu Dhabi, United Arab Emirates

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32. Enhancing Cell Behavior on 3D Scaffolds by Plasma-based 3D Printing System; Seung Hyeon Kim, Kyung Hee University, Seoul, South Korea
33. Effects of Astrocyte Derived Extracellular Matrix on Axon Growth of V2a Interneurons; Shelly Sakiyama-Elbert, The University of Texas at Austin, Austin, TX, USA
34. Modeling 22q11.2 Deletion Syndrome Vasculopathy with Blood Vessel Organoids; Siyu He, Columbia University, New York City, NY, USA *VI48
35. Polycaprolactone Electrospun Fibers to Modulate Basement Membrane Remodeling in Upper Airway Coculture; Teja Guda, University of Texas at San Antonio, San Antonio, TX, USA *VI79
36. Temporal Dynamics of Interpenetrating Collagen I:Fibrin hydrogels in supporting musculoskeletal remodeling; Teja Guda, San Antonio, TX, USA *VI49
37. Small Extracellular Vesicles from Precision Porous Templated Scaffold Resident Cells Modulate T Cell Inflammatory Signaling via TLR4; Thomas Hady, University of Washington, Seattle, WA, USA *VI50
38. Designer Angiogenic Peptides for Tissue Regeneration; Vivek Kumar, New Jersey Institute of Technology, Newark, NJ, USA *VI71
39. Microribbon-based Macroporous Matrices Enhance Cartilage Repair in Rat Osteochondral Defect Model; Xinming Tong, Stanford University, Stanford, CA, USA *VI51
40. MOVED TO WOMEN IN BIOMATERIALS SESSION
41. MOVED TO WOMEN IN BIOMATERIALS SESSION
42. MOVED TO WOMEN IN BIOMATERIALS SESSION

Polymeric Biomaterials

43. Evaluation of Acyl-modified Chitosan Membranes Loaded with Cis-2-decenoic Acid and Bupivacaine for Infection Prevention; Landon Choi, University of Memphis, Memphis, TN, USA *VI77
44. Innovative Development of Surface-Eroding, Non-Swelling Methacrylated-Anhydride Resins for Additive Manufacturing of Biocompatible Products; Travis W. Walker, South Dakota School of Mines and Technology, Rapid City, SD, USA
45. MOVED TO VIRTUAL
46. MOVED TO VIRTUAL
47. MOVED TO VIRTUAL
48. Development and Characterization of Furfuryl Gelatin Based Electrospun Fibrous Mats for Use as Platforms for Cardiac Disease Modelling; Joel Mudloff, University of Texas at El Paso, El Paso, TX, USA *V79
49. A Novel Modified Chitosan PEG Bio-ink for use in Additive Manufacturing; Blass Watson, University of Memphis, Memphis, TN, USA *V80
50. MOVED TO VIRTUAL

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51. Design and Characterization of Cationic Nanoparticles for miRNA Delivery in the Treatment of Glioblastoma Multiforme; Deidra Ward, The University of Texas at Austin, Austin, TX, USA *V82
52. Stimuli Responsive Dual Nanogel System for Dendritic Cell Modulation and Immune Checkpoint Blockade; Dennis Huang, The University of Texas at Austin, Austin, TX, USA *V83
53. Tackling Oral Cancer and Associated Pain with Therapeutic Nanocarriers; Divya Bhansali, Columbia University, New York, NY, USA
54. Evaluation of Ethyl Salicylate as a Plasticizer for Vascular Bioresorbable Stent Application; Hugh Zhao, Biomatco LLC, Pleasanton, CA, USA *V84
55. Biomimetic Engineered Corneal Surface on Silicone Hydrogel Contact Lens; James Wu, Fort Worth, TX, USA *V85
56. Quantification of Patterned Biodegradable PCL Fiber Orientation by Electrospinning with the Surface Wettability and Cell Behavior; Jiahui Chen, North Carolina State University, Raleigh, NC, USA *V86
57. MOVED TO VIRTUAL
58. Incorporation of Nerve Growth Factor-loaded Microspheres into Chitosan/Polycaprolactone Hybrid Implants to Enhance Peripheral Nerve Tissue Regeneration; Katarzyna Nawrotek, Lodz University of Technology, Łódź, Poland *V87
59. In vivo Gelation of Phenylboronic Acid Group-bearing Polymer Solution Upon Contacting Soft Tissue; Kyoto Fukazawa, National Cerebral and Cardiovascular Center Research Institute, Suita, Osaka, Japan *V88
60. Synthesis and Biological Characterization of 3D Polyhydroxybutyrate-tricalcium Phosphate Scaffolds; Maciej Guzik, Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences, Kraków, Poland *V89
61. Delivery of Hepatitis B Vaccine via a Self-Boosted System; Maria Kanelli, Massachusetts Institute of Technology, Cambridge, MA, USA *V90
62. Electrospun Wound Healing Devices Containing Antibacterial Ionic Liquids/Deep Eutectic Solvents Resist Biofouling; Marjorie Nguyen, Northern Arizona University, Flagstaff, AZ, USA *V91
63. Thermoresponsive Shear-thinning Biomaterial for the Treatment of Infections Associated with External Hemorrhages; Marvin Mecwan, Terasaki Institute for Biomedical Innovation, Los Angeles, CA, USA
64. In Vitro Evaluation of the Osteoinductive Potential of Chitosan Membranes Loaded with Raspberry Ketone; Mathew Atwill, University of Memphis, Memphis, TN, USA *V172
65. MOVED TO VIRTUAL
66. The Effect of Uremic Conditions on Smooth Muscle Cells Cultured on PEG Hydrogels; Mollie Maples, University of Colorado Boulder, Boulder, CO, USA *V93

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67. Improving Facial Skeletal Muscle Regeneration Using Surface Modified Collagen-PCL Knitted Textile Scaffolds; Monica Deshpande, North Carolina State University, Raleigh, NC, USA *V94
68. Surface Functionalization of Polyurethane Towards Prevention of Biomaterials-Centered Infections: Combined Experimental and Molecular Dynamics Simulations Approach; Monika Golda-Cepa, Jagiellonian University, Kraków, Poland *VI76
69. Nitric Oxide-Releasing Therapy for Infected Catheter Salvaging; Morgan Ashcraft, University of Georgia, Athens, GA, USA *V95
70. Surface Modified PLGA Microspheres for Improved Intra-articular Corticosteroid Injection Efficacy; Nathaniel Myers, Villanova University, Villanova, PA, USA
71. High-Performance Biosensors Based on Two-Photon Polymerization of PEGDA-PEDOT:PSS; Omid Dadra-Toussi, University of Houston, Houston, TX, USA
72. A Predictive Mechanistic Model of Drug Release from Acetalated Dextran Particles; Rebeca Stiepel, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA *V96
73. Comparative Effect of BMP-2 and BMP-9 for Bone Regeneration by Mesenchymal Stem Cells in a Biomimetic Hydrogel; Sarah Schoonraad, University of Colorado Boulder, Boulder, CO, USA *V97
74. Optimized Loopable Translation as a Platform for the Synthesis of Repetitive Proteins; Sea On Lee, Johns Hopkins University, Baltimore, MD, USA *V98
75. WITHDRAWN
76. Biomimetic Scaffolds Capture Anti-Tumor Immune Cells in the Early Breast Cancer Metastatic Niche; Sophia Orbach, University of Michigan, Ann Arbor, MI, USA *VI69
77. Development of Decoy CD47-Nanomedicine as Novel Therapeutic Strategy for Targeted Amelioration of Thrombospondin I-Induced Vascular Dysfunctions; Tamer Elbayoumi, Northwestern University, Downers Grove, IL, USA *VI00
78. Targeting Cancer-associated Fibroblasts within a Microtumor Environment via Liposomes with Arginine-based Surface Modifiers; Tanzeed Ur Rehman, Iowa State University, Ames, IA, USA *VI66
79. A Study on the Ability of an Organo-Selenium Attached to a Cotton Dressing, to Inhibit Candida Albicans Biofilm Formation; Ted Reid, Texas Tech University Health Sciences Center, Lubbock, TX, USA *VI01
80. Improving Selective Targeting to Mouse Macrophage Subpopulations through Altering the Polyethylene Glycol Composition of Liposomes; Vittal G. Kamath, Iowa State University, Ames, IA, USA *VI02
81. Antimicrobial Hernia Mesh: Plasma Activated Diallyldimethylammonium Chloride Coating; Ziyu Wang, North Carolina State University, Raleigh, NC, USA *VI03

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6. Optimizing Acetaminophen Release Profiles from Silicas through Surface Functionalization; Maressa Schulze, Villanova University, Villanova, PA, USA
7. Decyl-silanized Titanium Loaded with 2- heptylcyclopropane-1-carboxylic acid Inhibits Staphylococcus Aureus Biofilm; Zoe Harrison, University of Memphis, Memphis, TN, USA
40. Covalent Immobilization of Heparin on Gelatin Methacryloyl as a Platform for Sustained Drug Delivery; Fan Zhang, North Carolina State University, Raleigh, NC, USA *VI64
41. Potential of Genipin-crosslinked Collagen Wet-spun Multifilament Yarns for Rotator Cuff Tendon Tissue Engineering; Yihan Huang, North Carolina State University, Raleigh, NC, USA *VI65
42. Electrophoretic Ion Pumps for Long-Term In Vitro Applications; Harika Dechiraju, UC Santa Cruz, Santa Cruz, CA, USA *VI63
82. Recapitulating Form and Function in Hydrogel Composites Towards Clinical Translation of Osteochondral Tissue Engineering; Sarah Schoonraad, University of Colorado Boulder, Boulder, CO, USA
83. Injectable Bioceramics for Dental Applications; Asma Tufail, COMSATS University Islamabad, Islamabad, Pakistan
84. Toll-like Receptors Contribute to the Foreign Body Response in a Biomaterial-dependent Manner; Brittany Thompson, University of Colorado Boulder, Boulder, CO, USA *VI59
86. A Fully Biological Gas Exchange Membrane for a Biomimetic Artificial Lung; Erica Comber, Carnegie Mellon University, Pittsburgh, PA, USA *VI60
87. Programmed Bending of a 3D Bioprinted Heart Tube Inspired by Morphogenesis; Jacqueline Bliley, Carnegie Mellon University, Pittsburgh, PA, USA *VI61
88. The Photo-Shielding Effect of Nanoceria on Gelatin; Joanna Shephard, University of Georgia, Athens, GA, USA *VI80
89. Engineering Biomimetic 3D Skeletal Muscle Architectures Using FRESH 3D Printed Collagen Scaffolds; Maria Stang, Carnegie Mellon University, Pittsburgh, PA, USA *VI62
90. Surface Engineering of Cationic Shell on Gold Nanoparticles for Near Infrared-triggered Photodynamic Therapy of Tumor-bearing Animals; Miso Lee, Naver, Seongnam, South Korea
91. Engineered Biosensors in an Encapsulated And Deployable System (eBEADS) for Detection of Environmental Health Hazards; Rachel Hegab, Johns Hopkins University, Baltimore, MD, USA *VI67

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VIRTUAL POSTERS

Bioglasses/Ceramics/Other Hard Materials

- V1. Adsorption Behavior of Serum Proteins on the Surface of Hydroxyapatite Ceramics with Preferred Orientation to A-Plane, Erika Onuma, Graduate School of Science and Technology, Meiji University
- V2. Improvement of Photo-Response in Titanium Dioxide for Cell Culture Substrates, Haruka Sumisaki, Kansai University
- V3. Biomicroconcretes Modified with Gold Nanoparticles and Silicon, Joanna Czechowska, AGH University of Science and Technology
- V4. Fabrication of Sr-substituted Hydroxyapatite Ceramics with Different Anisotropic Structures and their Osteodifferentiation, Mamoru Aizawa, Meiji University
- V5. Immediate Soft-Tissue Adhesive Titanium: The Effect of Surface Porosity, Masahiro Okada, Okayama University
- V6. Proliferation, Differentiation and Calcification of MC3T3-E1 Cells on Zr-14Nb-5Ta-1Mo Alloy, Peng Chen, Tokyo Medical and Dental University
- V7. How Liquid Phase Composition Affects on Properties of Calcium Phosphate Biomicroconcretes Based on α -TCP?, Piotr Pantak, Faculty of Material Science and Ceramics, AGH University of Science and Technology
- V8. Effects of OCP/PLGA Composites on MSC Differentiation and The Materials Hydrolyses, Ryo Hamai, Tohoku University Graduate School of Dentistry
- V9. Drug Release from Gelatin-Calcium Titanate Composite Formed on Ti-6Al-4V alloy, Seiji Yamaguchi, Chubu University
- V10. Zirconium Alloy with Excellent Mechanical Property to Decrease MRI Artifact, Takao Hanawa, Tokyo Medical and Dental University
- V11. Developing a Novel Methodology for Microwave Hydrothermal Nanomodification of Titanium Microcarriers for Bone Regeneration, Venettia Leslie-King, INDICASAT-AIP, Research Institute
- V12. Study on the Corrosion Performance of Carbide-derived Carbon (CDC) for Hip Implants, Yani Sun, University of Illinois at Chicago
- V13. Antiviral Properties of Suspension Plasma-Sprayed Hydroxyapatite / Titania Coating, Yuichi Otsuka, Nagaoka University of Technology
- V14. Preparation of Paclitaxel-Loaded Poly(Lactic Acid)/Hydroxyapatite Core-Shell Nanoparticles for Drug Delivery System Carrier, Sungho Lee, National Institute of Advanced Industrial Science and Technology (AIST)
- V15. Highly Efficient Propagation of Coral Tissues Using Bone Regeneration Techniques, Nanako Kosaka, Kansai University



- V16. Tuning Anti-tumor Immune Responses by Adjusting Size of Hydroxyapatite Particles, Xiupeng Wang, National Institute of Advanced Industrial Science and Technology
- V17. Neutralizing the Systemic Toxicity of Co-Formulations of Chemotherapeutics Using Magneto-electric Silica Nanocarriers for Specific Therapeutic Action Against Metastatic Cancer Cells, Prakash Nallathamby, Berthiaume Institute for Precision Health - University of Notre Dame
- V18. Multifunctional Titanium-Based Biomaterials – Advantages of Nanostructures in Metallic Implants, Magdalena Jarosz, Jagiellonian University, Faculty of Chemistry
- V19. Synthesis and Physicochemical Characterization of Silver Modified Tricalcium Phosphate Ag- β TCP and Ag- β TCP/poly(3-hydroxybutyrate) Scaffolds for Bone Tissue Regeneration, Szymon Skibinski, AGH UST Faculty of Materials Science and Ceramics
- V20. Optimizing Acetaminophen Release Profiles from Silicas through Surface Functionalization, Maressa Schulze, Villanova University
- V21. Silanization of Titanium and Hydroxyapatite for Loading and Release of 2-Heptylcyclopropane-1-Carboxylic Acid, Zoe Harrison, University of Memphis
- V173. Dynamic Mineralization: Multidirectional, Low-Temperature, and Rapid Process to Deposit Hydroxyapatite Microfilms on Polyether-Ether-Ketone for Osseointegration; Florence Lui, UNSW Sydney, Australia

Implant Pathology & the Foreign Body Reaction

- V22. Translating Biomedical Technologies: Asia Perspective and Opportunity, John Kao, Hong Kong Science and Technology Park
- V23. WITHDRAWN
- V24. Resveratrol-Loaded Polymer-Based Nanocomposite Probes for Neural Interfacing, Natalie Mueller, Case Western Reserve University
- V25. Development of Gentamicin-Loaded Bone Filling Material with Infection Control Function, Ririko Tsuboi, Osaka University
- V26. A Model of Open Reduction Fracture Fixation for Testing New Implant Surface Approaches in Diabetic Rats, Alexandra Arteaga, University of Texas at Dallas
- V27. PVC Tubing Results in Monocytic Insult on Neonatal Endothelial Cells: Role of Shear Stress, Hao Zhou, University of Washington, Seattle



Polymeric Biomaterials

- V28. Design of Shape-memory Polymeric Strings for Minimally Invasive Prenatal Repair of Sacrococcygeal Teratoma, Ailifeire Fulati, National Institute for Materials Science, Japan / University of Tsukuba
- V29. Design of Smart Nanocapsules and Gel Particles Using W/O Emulsions for Drug Delivery Carriers, Akifumi Kawamura, Kansai University
- V30. Self-assembled Polymeric MR Contrast Agents for Superfine Microvasculature Imaging, Atsushi Mahara, Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute
- V31. Development of Debondable Dental Resin Cements Containing Photodegradable Plyrotaxane as a Cross-Linker, Atsushi Tamura, Tokyo Medical and Dental University
- V32. Nanoparticle Rigidity Influences the Uptake by Human Glioblastoma Cells, Chung-Fan Kuo, University of Houston
- V33. Transport of Gel-filled Liposomes across a Blood-Brain Barrier Model, Chung-Fan Kuo, University of Houston, Biomedical Engineering
- V34. Transformable Supramolecular Materials for Reversible PEGylation of Protein Drugs, Kosel Utatsu, Graduate School of Pharmaceutical Sciences, Kumamoto University, Japan
- V35. Urea-Functionalized Poly(trimethylene carbonate) Derivative for Biological Function, Lee Yae Tan, Nara Institute of Science and Technology
- V36. WITHDRAWN
- V37. Poly(beta-amino ester)-Based Heat-Stable Microparticle Platform for Micronutrient Encapsulation and Delivery, Linzixuan (Rhoda) Zhang, Massachusetts Institute of Technology
- V38. Development of A Collagen Hydrogel Dressing, Maoqi Feng, Dynamic Entropy Technology LLC
- V39. Feasibility Study of shRNA Polyplex as a Multi-functional Drug for Alzheimer's Disease, Masamichi Inoue, Graduate School of Pharmaceutical Sciences, Kumamoto University, Japan
- V40. Anticancer Activity of Anti-cancer Drug-Conjugated Sulfobetaine Polymers against Cancer Cell Spheroids, Masaya Yanamoto, Tohoku University
- V41. Development of Self-Healing Poly(γ -glutamic acid) / Chondroitin Sulfate Hydrogels with In Situ Mineralization Ability, Meng Wei, Osaka University
- V42. Conjugate of Tyramine and Chondroitin Sulfate for the Functionalization of Bone Fixation Materials, Minori Sugiyama, Kansai University
- V43. Influence of Terminal Structure of Triethylene Glycol-Modified Polyrotaxanes on their Physicochemical Properties and Biomaterials Functions, Moe Ohashi, Tokyo Medical and Dental University
- V44. Protective Effect from DEPRESSION by Polymer-Based Nanoantioxidant, Naoki Saigo, University of Tsukuba

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- V45. Role of Peptide Valency on PEG-b-PPS Micelles for Integrin Receptor Blocking and Anti-Angiogenesis, Neha Bhushan, University of Illinois College of Medicine at Rockford
- V46. Temperature-Responsive Injectable Polymer Systems Using Gelatin as a Crosslinker for Cellular Scaffold Materials, Nobuo Murase, Kansai University
- V47. Solvent-Free Method for Initiator Immobilization for Grafting Zwitterionic Polymer Brushes using Surface Initiated Polymerization, Prabhleen Kaur, University of Washington
- V48. High Performance Polymer Mesh as an Alternative to Traditional Degradable Mesh for Alveolar Bone Repair, Preethi A, IIT Bombay
- V49. Heparin-Integrin Ligand Co-immobilized Surface for Enhancing the Adhesion of Mesenchymal Stem Cells, Ryo Minami, Kansai University
- V50. Increase in Friction on a Contact Lens by Embedded Pigment -Verification Using a Dedicated Pendulum Apparatus-, Ryusuke Nakaoka, DMD, NIHS
- V51. Hemocompatible Surfaces Immobilized with Collagen-inspired Oligoprolines, Sachiro Kakinoki, Department of Chemistry and Materials Engineering, Faculty of Chemistry, Materials and Bioengineering Kansai University
- V52. Biomaterial-based Delivery of Anti-VEGF Agent or Steroid: Application in Treating Retinal Vascular Diseases, Dhivya Venugopal, Indian Institute of Technology Hyderabad
- V53. A Layer-by-Layer Approach to Incorporate Proteins into Electrospun Meshes while Preserving Secondary Structure, Gauri Shankar Shaw, Indian Institute of Technology Hyderabad
- V54. Corrosion Behavior of Pure Magnesium Substrate Coated with Polydopamine Layer in Cell Culture Medium, Sayuki Yoshitomi, Kansai University
- V55. Dual Stimuli-responsive Sol-Gel Transition Polymers with Photodimerizable Groups for Regulating Cell Behavior, Takashi Miyata, Kansai University
- V56. Cationic Dendrimer as a Novel Melanogenesis Inhibitor, Takaya Ariyoshi, Graduate School of Pharmaceutical Sciences, Kumamoto University, Japan
- V57. A Self-assembled Antioxidants Nanoparticle Enhances Exercise Performance in High-intensity Running, Takuto Toriumi, Graduate School of Pure and Applied Sciences, University of Tsukuba
- V58. Tumor Growth Suppression by Releasing Cancer Immune Suppression Using an Anti-CD25 Antibody-Immobilized Material, Tsuyoshi Kimura, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University
- V59. Isabgol (Psyllium) Nanoparticles Functionalized with Hyaluronic Acid from Engineered Lactococcus Lactis for Drug Delivery, Vasudha T K, Indian Institute of Technology Madras
- V60. Piezoelectric-Driven Hernia Repair Mesh Mechanically Loaded with Ultrasound For Soft Tissue Healing, Victoria Drapal, University of Kansas
- V61. Enhancement of Osteogenesis by Polyphosphoesters Having Bone Affinity, Yasuhiko Iwasaki, Kansai University

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- V62. Anti-ice Nucleation Peptide Applied for Cell Stock Solution, Yoshiaki Hirano, Kansai University
- V63. Synthesis and Characterization of New Temperature-Responsive Polymers, Poly(N-acryloylpiperidine) Derivatives, Yoshikatsu Akiyama, Tokyo Women's Medical University
- V64. Modulation of Zeta Potential and Molecular Mobility on Polyrotaxane Surfaces Promotes Osteoblastic and Adipogenic Differentiation of Mesenchymal Stem Cells, Yoshinori Arisaka, Tokyo Medical and Dental University
- V65. Nanosheet Wrapping-Assisted Coverslip-Free Tissue Imaging for Looking Deeper, Yosuke Okamura, Tokai University
- V66. Development of Injectable Dual Stimulus-Responsive Hydrogel Using Biodegradable Poly(γ -glutamic acid), Yu-I Hsu, Osaka University
- V67. Cell Surface Modification with Heparin-conjugated Lipids for Improving Blood Compatibility, Yuji Teramura, National Institute of Advanced Industrial Science and Technology (AIST)
- V68. Self-assembling Amino Acid Therapeutics, Yukio Nagasaki, University of Tsukuba
- V69. Enhancement of Mesenchymal Stem Cell Differentiation by Co-Culturing with Mature Cells in a Double-Layered Phospholipid Polymer Hydrogel Matrix, Kazuhiko Ishihara, University of Tokyo
- V70. The Effect of Sorbitol-responsive Injectable Hydrogel on Cardiac Function and Morphology of MI Rat, Hue Le, Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute
- V71. Influence of Surface Properties of Silk Fibroin-based Biomaterials on Cell Behaviors, Tomoko Hashimoto, Shinshu University
- V72. Temperature-responsive Biodegradable Injectable Hydrogel Containing Adipose-derived Stem cells for Myocardial Ischemia, Yuichi Ohya, Kansai University
- V73. Basic Evaluation of Novel Gelatin Hemostat, Hironori Arima, Osaka City University
- V74. Anti-inflammatory Response of Methotrexate Conjugated Boronate-PAMAM Dendrimers for Potential Arthritis Therapy, Edidiong Essien, University of Illinois College of Medicine Rockford
- V75. Behavior of New Type Cured Gelatin Hemostat On Surgical Site Temperature, Hirotsugu Kido, Osaka City University
- V76. Synthesis and Stabilization of Nanoliposomal Copper Diethyldithiocarbamate using Poly (Ethylene Glycol) – Carboxylate for Cancer Therapy, Radu Alexandru Paun, McGill University
- V77. 3D Osteoconductive Composite for the Management of Large Bone Defects, Adil Akkouch, Western Michigan University Homer Stryker MD School of Medicine
- V78. Encapsulation and Differentiation of Adipose-Derived Mesenchymal Stem Cells in a Biomimetic Purine Cross-Linked Chitosan Sponge, Antoine Karoichan, McGill University
- V79. Development and Characterization of Furfuryl Gelatin Based Electrospun Fibrous Mats for Use as Platforms for Cardiac Disease Modelling, Joel Mudloff, University of Texas at El Paso

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- V80. A Novel Modified Chitosan PEG Bio-ink for use in Additive Manufacturing, Blass Watson, University of Memphis
- V81. 6-Bromoindirubin-3'-Oxime Incorporation in the Guanosine Diphosphate Crosslinked Chitosan Scaffold as a Glycogen Synthase Kinase 3 Inhibitor: Investigation of Material Properties for Bone Tissue Regeneration, Celine Agnes, McGill University
- V82. Design and Characterization of Cationic Nanoparticles for miRNA Delivery in the Treatment of Glioblastoma Multiforme, Deidra Ward, The University of Texas at Austin
- V83. Stimuli Responsive Dual Nanogel System for Dendritic Cell Modulation and Immune Checkpoint Blockade, Dennis Huang, University of Texas at Austin
- V84. Evaluation of Ethyl Salicylate as a Plasticizer for Vascular Bioresorbable Stent Application, Hugh Zhao, Biomatco LLC
- V85. Biomimetic Engineered Corneal Surface on Silicone Hydrogel Contact Lens, James Wu, Alcon
- V86. Quantification of Patterned Biodegradable PCL Fiber Orientation by Electrospinning with the Surface Wettability and Cell Behavior, Jiahui Chen, North Carolina State University
- V87. Incorporation of Nerve Growth Factor-loaded Microspheres into Chitosan/Polycaprolactone Hybrid Implants to Enhance Peripheral Nerve Tissue Regeneration, Katarzyna Nawrotek, Faculty of Process and Environmental Engineering, Lodz University of Technology
- V88. In vivo Gelation of Phenylboronic Acid Group-bearing Polymer Solution Upon Contacting Soft Tissue, Kyoto Fukazawa, Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute
- V89. Synthesis and Biological Characterization of 3D Polyhydroxybutyrate-tricalcium Phosphate Scaffolds, Maciej Guzik, Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences
- V90. Delivery of Hepatitis B vaccine via a Self-Boosted System, Maria Kanelli, MIT
- V91. Electrospun Wound Healing Devices Containing Antibacterial Ionic Liquids/Deep Eutectic Solvents Resist Biofouling, Marjorie Nguyen, Northern Arizona University
- V92. Tetrahydropyran Triazole Phenyl-alginate and Quaternized Phosphocholine-chitosan Conformal Coating on Human Islets: An In Vitro Study on Cell Viability, Michael Yitayew, McGill University
- V93. The Effect of Uremic Conditions on Smooth Muscle Cells Cultured on PEG Hydrogels, Mollie Maples, University of Colorado Boulder
- V94. Improving Facial Skeletal Muscle Regeneration using Surface Modified Collagen-PCL Knitted Textile Scaffolds, Monica Deshpande, North Carolina State University
- V95. Nitric Oxide-Releasing Therapy for Infected Catheter Salvaging, Morgan Ashcraft, University of Georgia
- V96. A Predictive Mechanistic Model of Drug Release from Acetalated Dextran Particles, Rebeca Stiepel, University of North Carolina Chapel Hill

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- V97. Comparative Effect of BMP-2 and BMP-9 for Bone Regeneration by Mesenchymal Stem Cells in a Biomimetic Hydrogel, Sarah Schoonraad, University of Colorado Boulder
- V98. Optimized Loopable Translation as a Platform for the Synthesis of Repetitive Proteins, Sea On Lee, Johns Hopkins University
- V99. WITHDRAWN
- VI00. Development of Decoy CD47-Nanomedicine as Novel Therapeutic Strategy for Targeted Amelioration of, Tamer Elbayoumi, Midwestern University, College of Pharmacy
- VI01. A Study on the Ability of an Organo-Selenium Attached to a Cotton Dressing, to Inhibit Candida albicans Biofilm Formation, Ted Reid, Texas Tech Univ. Health Sciences Center
- VI02. Improving Selective Targeting to Mouse Macrophage Subpopulations Through Altering the Polyethylene Glycol Composition of Liposomes., Vittal G. Kamath, Iowa State University
- VI03. Antimicrobial Hernia Mesh: Plasma Activated Diallyldimethylammonium Chloride Coating, Ziyu Wang, NC State University
- VI04. Evaluation of Magnesium Incorporation in Chitosan-Elastin Nanofiber Membranes, Alex Bryan, The University of Memphis, BME Dept
- VI66. Targeting Cancer-associated Fibroblasts within a Microtumor Environment via Liposomes with Arginine-based Surface Modifiers, Tanzeel Ur Rehman, Iowa State University
- VI69. Biomimetic Scaffolds Capture Anti-Tumor Immune Cells in the Early Breast Cancer Metastatic Niche, Sophia Orbach, University of Michigan
- VI72. In Vitro Evaluation of the Osteoinductive Potential of Chitosan Membranes Loaded with Raspberry Ketone; Mathew Atwill, University of Memphis, Memphis, TN, USA
- VI76. Surface Functionalization of Polyurethane Towards Prevention of Biomaterials-Centered Infections: Combined Experimental and Molecular Dynamics Simulations Approach; Monika Golda-Cepa, Jagiellonian University, Kraków, Poland
- VI77. Evaluation of Acyl-modified Chitosan Membranes Loaded with Cis-2-decenoic Acid and Bupivacaine for Infection Prevention; Landon Choi, University of Memphis, Memphis, TN, USA
- VI78. Click Chemistry Functionalizes Self-Assembling Peptide Hydrogels; Joe Sharick, The Ohio State University, Columbus, OH, USA

Tissue Engineering

- VI05. High Internal Phase Pickering Emulsion (HIPE)-Templated Porous Scaffolds Loaded With Polyunsaturated Fatty Acids (PUFA) For Bone Tissue Engineering, Aadinath W, Indian Institute of Technology Madras
- VI06. Mechanically Conditioned Tissue Engineered Blood Vessels Resistant to Diabetic Pathologies, Bethany Lefeber,

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Clemson University

VI07. Evaluation of Polymeric Carriers for Cell-labelling MRI Contrast Agent, Chihiro Hiruno, Kansai University

VI08. Microfluidic Chip for Long-Term Cell Co-Culture, Craig Watson, Case Western Reserve University

VI09. Macromolecular Architecture of Biomimetic Proteoglycans Directs Tissue Micromechanics and Cellular Mechanotransduction, Elizabeth Kahle, Drexel University

VI10. Preparation of Composite Scaffolds of Folic Acid-conjugated Gelatin and Gold Nanoparticles for Photothermal Therapy, Huajian Chen, University of Tsukuba

VI11. Ex Vivo Gene Delivery for Fabrication of Hepatocyte Sheet Tissues Secreting Angiogenic Factors, Jun Kobayashi, Tokyo Women's Medical University

VI12. Photothermal Scaffolds of Black Phosphorus Nanosheets and Gelatin for Biomedical Applications, Linawati Sutrisno, University of Tsukuba

VI13. Biomimetic Proteoglycans Increase the Indentation Modulus of the Porcine Aortic Valve Leaflet Spongiosa, Mark Petrovic, Drexel University

VI14. Micropatterned Thermoresponsive Surfaces via Physical Block Copolymer Coatings for Fabricating Cell Sheets with Designed Morphological Structures, Masamichi Nakayama, Tokyo Women's Medical University

VI15. Evaluation of Carbonate Apatite Bone Graft Substitute in the Beagle Dog I-wall Peri-implant Defect Model, Nagomi Kitamura, GC Corporation

VI16. Evaluation of Elasticity and Barrier Function of Synthetic Resorbable Membrane for Guided Bone Regeneration, Naruki Kimura, GC Corporation

VI17. Intelligent Biosensor (iBiosensC) for Urine-Based Early Diagnosis of Breast Cancer, Sreyansh Mamidi, University of Illinois at Urbana-Champaign

VI18. Direct Injection of Hydrogels Embedding Gold Nanoparticles for Local Therapy after Spinal Cord Injury, Seil Sohn, CHA University, Bundang CHA Medical Center

VI19. JNK-2 Gene Silencing Lipid Nanoparticles for Elastic Matrix Regenerative Repair in Abdominal Aortic Aneurysms, Shataakshi Dahal, Lehigh University

VI20. WITHDRAWN

VI21. In Situ Mineralized Nanocellulose-Alginate Bioink System for Injectable Bone Graft/3D Printing Applications, Sumit Murab, Cincinnati Children's Hospital Medical Center

VI22. Nitric Oxide (NO) Donor Drug Delivering Nano Platforms for Elastic Matrix Repair and Regeneration in Abdominal Aortic Aneurysm, Suraj Bastola, Lehigh University

VI23. Recapitulating the Human Placental Barrier with Trophoblast Stem Cells and a Microfluidic Device, Takeshi Hori, Tohoku University

VI24. Interconnected Collagen Scaffolds Prepared with Sacrificial Templates for Cartilage Tissue Engineering, Yan Xie,



University of Tsukuba

VI25. WITHDRAWN

VI26. Self-assembling B-hairpin Peptide Hydrogel Scaffold for Meniscal Defect, Yoshiaki Hirano, Kansai University

VI27. 3D Bioprinting of a Photo-crosslinkable Platelet Lysate Based Bioink, Sunglu Min, Kyung-Hee University

VI28. Extracellular Matrix Microparticles Promote Heart Regeneration in Post-myocardial Infarction Mice, Xinming Wang, Case Western Reserve University

VI29. Blood Response to Arg-Glu-Asp-Val Peptide-modified Acellular Graft, Atsushi Mahara, Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute

VI30. Effect of Interlobular Septa on Stress-strain Characteristics of Pleura, Hirsosane Hayashi, Kanazawa Institute of Technology

VI31. Simultaneous Spheroid Formation and Nanoparticle Encapsulation by Acoustic Microstreams, Reza Rasouli, McGill University

VI32. Mineralized Collagen Scaffold Pore Structure Enhances Immunomodulatory Potential of Mesenchymal Stem Cells, Vasiliki Kolliopoulos, University of Illinois at Urbana-Champaign

VI33. Enhancing Cell Behavior on 3D Scaffolds by Plasma-based 3D Printing System, Seung Hyeon Kim, Kyung Hee University

VI34. Bioactive Tissue Scaffolds from Decellularized Ascidian Tunic, Sanjaraj Vijayavenkataraman, New York University Abu Dhabi

VI35. Fabrication of a Scaffold from Novel Tropoelastin-collagen Electrospun Yarn for Skin Tissue Regeneration, Daxian Zha, North Carolina State University

VI36. Engineered Osteoclasts: Potential Cell Therapy for Ectopic Calcification, Apichai Yavirach, University of Washington

VI37. Foamed Calcium Phosphate Bone Cements with Biosurfactants – Cytotoxicity Studies, Ewelina Circhon, AGH University of Science and Technology

VI38. A Fiber-Reinforced Composite Vascular Graft that Mediates the Macrophage Response, Fan Zhang, North Carolina State University

VI39. Mechanical Characterization and Neutrophil Extracellular Traps Response of a Novel Hybrid Geometry Polydioxanone Near-Field Electrospun Template, Gary Bowlin, University of Memphis

VI40. In vivo Delivery of Macrophage Subtypes via Genipin-Crosslinked Collagen Biotextile, Ilaha Isali, Case Western Reserve University

VI41. Substrate Stiffness Modulates Human Regulatory T Cell Induction and Metabolism, Lingting Shi, Columbia University

VI42. Effects of Endothelial Cell (EC) Seeding Density and Passage Number on Human EC-Mesenchymal Stem Cell

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(MSC), Maiko Sasaki, Atlanta VA Medical Center/Emory University

VI43. Polymer Design & Glycosaminoglycan Ratio Modulate Physical & Bioactive Properties of GAG Hydrogels, Michael Nguyen, University of California, Davis

VI44. 40 μm Diameter Pore, Precision-Templated Scaffolds Promote Recruitment of Pro-Healing Circulating Monocytes, Nathan Chan, University of Washington

VI45. Type III Sodium-Dependent Phosphate Transporter Encoded by Gene *Slc20a2* as a Hard Tissue Engineering Target, Philip Walczak, University of Washington School of Dentistry Department of Oral Health Sciences

VI46. Bone Regeneration in Sockets Grafted with Shefabone® SCPC Immediately Following Extractions, Randa Alfortawi, King Saud University

VI47. Assessment of Novel Surgical Procedures to Regenerate Bone Using Decellularised Muscle and Bioactive Ceramic: Teja Guda Histological Analysis, Randa Alfortawi, King Saud University

VI48. Modeling 22q11.2 Deletion Syndrome Vasculopathy with Blood Vessel Organoids, Siyu He, Columbia University

VI49. Temporal Dynamics of Interpenetrating Collagen I:Fibrin Hydrogels in Supporting Musculoskeletal Remodeling, Teja Guda, The University of Texas at San Antonio

VI50. Small Extracellular Vesicles from Precision Porous Templated Scaffold Resident Cells Modulate T Cell Inflammatory Signaling via TLR4, Thomas Hady, University of Washington Bioengineering

VI51. Microribbon-based Macroporous Matrices Enhance Cartilage Repair in Rat Osteochondral Defect Model, Xinming Tong, Stanford University

VI63. Electrophoretic Ion Pumps for Long-Term In Vitro Applications, Harika Dechiraju, University of California, Santa Cruz (*also in 'Women in Biomaterials' session*)

VI64. Covalent Immobilization of Heparin on Gelatin Methacryloyl as a Platform for Sustained Drug Delivery, Fan Zhang, North Carolina State University (*also in 'Women in Biomaterials' session*)

VI65. Potential of genipin-crosslinked collagen wet-spun multifilament yarns for rotator cuff tendon tissue engineering, Yihan Huang, North Carolina State University (*also in 'Women in Biomaterials' session*)

VI68. Mechanical and Microstructural Evaluation of Decellularized Porcine Thoracic Aortas for the Development of a Biomimetic Vascular Graft, Francesco Giovanniello, McGill University

VI74. Micro-Deposit of Hydroxyapatite for Bone-on-a-Chip Microfluidic Devices; Florence Lui, UNSW Sydney, Australia

VI79. Polycaprolactone Electrospun Fibers to Modulate Basement Membrane Remodeling in Upper Airway Coculture; Teja Guda, University of Texas at San Antonio, San Antonio, TX, USA

VI81. Quantitative CT Analysis and Mechanical Coupling of Implanted Bioresorbable Composite Scaffolds to Bone; David Margolis, University of Arizona, Tucson, AZ, USA

Women in Biomaterials



- VI52. Microneedle Patch to Modulate Local Gingival Environment, Cher (Xuexiang) Zhang, University of California, Los Angeles
- VI53. Using Fibrous Biomaterials to Understand the Role of the Microenvironment During Stem Cell Differentiation, Jessica Gluck, North Carolina State University
- VI54. An Alkyl Polyglucoside Based Oil-in-water Emulsion Formulation with Depot Water Concealing Liquid Crystals for Dermal Wound Repair, Kaushita Banerjee, Vellore Institute of Technology
- VI55. Modification of Structural and Mechanical properties of Bio-glass/ Tio₂ Nano Composite Scaffold with a Nano Composite Coating Based on PHB for Tissue Engineering, Melika Rafiee Dorabati
- VI56. Composite Materials with the Addition of Mesoporous Bioactive Glasses Doped with Therapeutic Ions, Michal Dziadek, Jagiellonian University
- VI57. Multiple Cues In Acellular Amniotic Membrane Incorporated Embelin For Tissue Engineering, Sudha Varadaraj, Indian Institute of Technology and Swinburne University of Technology
- VI58. Chitosan-based Hydrogel Biomaterials: in vitro Investigation, Szymon Salagierski, AGH University of Science and Technology
- VI59. Toll-like Receptors Contribute to the Foreign Body Response in a Biomaterial-dependent Manner, Brittany Thompson, University of Colorado Boulder
- VI60. A Fully Biological Gas Exchange Membrane for a Biomimetic Artificial Lung, Erica Comber, Carnegie Mellon University
- VI61. Programmed Bending of a 3D Bioprinted Heart Tube Inspired by Morphogenesis, Jacqueline Bliley, Carnegie Mellon University
- VI62. Engineering Biomimetic 3D Skeletal Muscle Architectures Using FRESH 3D Printed Collagen Scaffolds, Maria Stang, Carnegie Mellon University
- VI67. Engineered Biosensors in an Encapsulated And Deployable System (eBEADS) for detection of environmental health hazards, Rachel Hegab, Johns Hopkins University
- VI75. Enthesis-inspired Transitional Mineral Layers for Collagen Hydrogel Constructs, Florence Lui, UNSW Sydney, Australia
- VI80. The Photo-Shielding Effect of Nanoceria on Gelatin; Joanna Shephard, University of Georgia, Athens, GA, USA
- VI82. Creating an In Vitro Model of the Left Ventricular Outflow Tract; Katie Brown, Rice University, Houston, TX, USA
- VI83. WITHDRAWN

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