

**Esmail Jabbari**

Full Professor of Chemical and Biomedical Engineering

Swearingen Engineering Center, Rm 2C11

University of South Carolina,

301 Main Street, Columbia, SC 29208

Office: (803) 777-8022 Cell: 803-730-4911

Fax: (703) 777-8265

E-mail: [jabbari@engr.sc.edu](mailto:jabbari@engr.sc.edu) [esmaiel.jabbari@gmail.com](mailto:esmaiel.jabbari@gmail.com)

Global Unique Identifier (GUID):

**576BD123-42A2-4E8F-A7E3-3A122FF65F70**Web of Science Research ID: [AAJ-2369-2020](#)Publons ID: [AAJ-2369-2020](#)ORCID ID: [0000-0001-6548-5422](#)

ORCID QR Code:

TWITTER: [@EsmailJabbari](#)Web linksUniv South Carolina ECHE <http://www.che.sc.edu/faculty/jabbari/>Univ South Carolina BME <http://biomed.engr.sc.edu/faculty/jabbari.htm>

My NCBI in National Center for Biotechnology Information (NCBI) Domain

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1FWvbhQo9Tr5w/bibliography/48222775/public/?sort=date&direction=ascending>AIMBE Website <http://aimbe.org/college-of-fellows/cof-1518/>WIKIPEDIA PAGE [http://en.wikipedia.org/wiki/Esmail\\_Jabbari](http://en.wikipedia.org/wiki/Esmail_Jabbari)

## SCHOLAR COMMONS

[http://scholarcommons.sc.edu/do/search/advanced/?q=author%3A\(%20esmaiel%20jabbari%20\)&start=0&context=1297624&sort=score](http://scholarcommons.sc.edu/do/search/advanced/?q=author%3A(%20esmaiel%20jabbari%20)&start=0&context=1297624&sort=score)GOOGLE SCHOLAR <http://scholar.google.com/citations?user=toBei-UAAAAJ&hl=en>LinkedIn <https://www.linkedin.com/pub/esmaiel-jabbari/2b/59b/b8>ResearchGate [http://www.researchgate.net/profile/Esmail\\_Jabbari](http://www.researchgate.net/profile/Esmail_Jabbari)SelectedWorks [http://works.bepress.com/esmaiel\\_jabbari/](http://works.bepress.com/esmaiel_jabbari/)KUDOS <https://www.growkudos.com/articles/search?q=Professor+Esmail+Jabbari>EDITED BOOK <http://www.worldscientific.com/sda/1043/biomimetics-bioinspiration.pdf>EDITED BOOK <http://www.worldscientific.com/worldscibooks/10.1142/7646>

EDITED BOOK <http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118140427.html>

---

### **AREAS OF INTEREST**

Bioinspired materials, Skeletal tissue engineering, Multi-scale composite materials, Self-assembled nanogels for growth factor delivery, Drug targeting to cancer stem cells, Stem cell encapsulation and delivery, Three-dimensional tissue models

### **EDUCATION**

Ph.D. in Chemical Engineering, Purdue University, May 1993.

M.S. in Chemistry, Virginia Tech, May 1989.

M.S. in Chemical Engineering, Virginia Tech, December 1986.

B.S. in Chemical Engineering, Virginia Tech, May 1982.

### **PROFESSIONAL EXPERIENCE**

1/2015 – Present	Univ. South Carolina	Full Professor of Chemical and Biomedical Engineering
8/2012 – 12/2012	Brigham Women’s Hospital	Visiting Professor of Medicine, Harvard Clinical and Translational Science Center
6/2010 – 8/2010	Tohoku University	Invited GI3 Visiting Professor, WPI Advanced Institute for Materials Research
7/2009 – Present	Univ. South Carolina	Tenured Associate Professor
9/2007-Present	Univ. South Carolina	Adjunct Professor of Orthopedic Surgery
8/2004-6/2009	Univ. South Carolina	Tenure-Track Associate Professor
7/2002-8/2004	Mayo Clinic	Senior Research Associate
9/2001-7/2002	Rice University	Visiting Scholar
9/94-9/2001	Tehran Polytechnic Inst.	Associate Professor and Head Biomaterials Group, Biomedical Engineering Department
6/93-7/94	Monsanto Biotech. Group	Post-Doctoral Research Fellow
1/94-5/94	Washington University	Adjunct Professor of Chemical Engineering

### **HONORS AND AWARDS**

- 2015 University of South Carolina Chemical Engineering Publication Award in 2015
- 2013 Grand Prize Winner, Inaugural INVENT EVENT: A USC Invention Competition, “Cortical-Bone-Like Microtubular Laminated Composite,” Capstone Campus Room, Capstone House, Friday, May 3, 2013 (6:30 – 9:30 PM).
- 2103 Election to College of Fellows of the American Institute for Medical and Biological Engineering (AIMBE)
- 2012 Berton Rahn Prize Award in Orthopedic Research, AO Foundation, Davos, Switzerland
- 2010 Who’s Who in America

- 2008 Stephen B. Milam Research Award, Oral and Maxillofacial Surgery Foundation  
 2006 Membership in Honorary Engineering Society Tau Beta Pi  
 2006 Membership in Who's Who in Engineering Education  
 1993 Membership in New York Academy of Sciences  
 1992 Adhesion Society Research Award  
 1989 Outstanding College Students of America  
 1989 Membership in the Honorary Chemistry Society Phi Lambda Epsilon  
 1988 Membership in the Honorary Operations Research Society Omega Rho  
 1988 Membership in the Honorary Research Society Sigma Xi

#### ADMINISTRATIVE AND MANAGERIAL EXPERIENCE

Member of 24-Men University Committee on Tenure and Promotion, University of South Carolina, August 2017 – Present.

#### PROFESSIONAL SERVICE AND ADMINISTRATIVE POSITIONS

##### I. Service to professional societies

Society for Biomaterials (SFB)

Member SFB Long-Range Planning Committee 2014

Chair of Orthopedic Biomaterials Special Interest Group 2013

Editorial Board, E-Newsletter of the Society for Biomaterials 2012

Secretary/Treasurer of Tissue Engineering Special Interest Group 2005

Secretary/Treasurer of Drug Delivery Special Interest Group 2005

Materials Research Society (MRS)

Controlled Release Society (CRS)

American Institute of Chemical Engineers (AIChE)

American Chemical Society (ACS)

Tissue Engineering and Regenerative Medicine International Society (TERMIS)

Endorsement Committee Member 2015-2016

Membership Committee 2012-2013

Biomedical Engineering Society (BMES)

IEEE Engineering in Medicine and Biology Society (IEEE-EMBS)

Vice Chair, Nanobiotechnology Technical Committee 2015-2016

Chair, Nanobiotechnology Technical Committee 2016-2018

Theme Editor, Nano/Micro Bioeng, Cell & Tissue Eng, and Biomaterials 2016-2018

Theme Co-Chair, 39<sup>th</sup> Annual International Conference IEEE-EMBS 2017

Orthopedic Research Society (ORS)

American Society for Blood and Marrow Transplantation (ASBMT)

American Association for Cancer Research (AACR)

Advanced Regenerative Manufacturing Institute 2018

##### II. Journal editorial duties

2017 **Associate Editor**, Gels, MDPI Open Access Publishing, Basel Switzerland.

2017 **Guest Editor**, Gels: Hydrogels Applied in Tissue Engineering, MDPI Open Access Publishing, Basel Switzerland.

2016 **Academic Editor**, PLOS ONE, Public Library of Science, USA

- 2016 **Guest Editor**, Gels: Polymers Applied in Tissue Engineering, MDPI Open Access Publishing, Basel Switzerland.
- 2013 **Guest Editor**, Biomed Research International, Hindawi Publishing, New York, NY, USA.
- 2011 **Editor** (North America Region): Journal of Biomaterials and Tissue Engineering, American Scientific Publishers
- 2009 **Guest Editor**, International Journal of Biomaterials, Hindawi Publishing, New York, NY, USA.

### III. Advisory and editorial board

- 2018 International Journal of Clinical Toxicology, JPM Press
- 2018 Editorial Board, Journal of Applied Biopharmaceutics & Pharmacokinetics, Scientific Array Publishing
- 2018 Editorial Board, Journal of Composites and Biodegradable Polymers, Savvy Science Publishers
- 2018 Editorial Board, Polymers, Multidisciplinary Digital Publishing Institute (MDPI) AG, Basel Switzerland
- 2017 Editorial Board, International J. Cancer Biology & Clinical Oncology, Acta Scientifica
- 2017 Editorial Board, The Scientific Pages of Cell and Developmental Biology, The Scientific Pages
- 2017 Editorial Advisory Board, Current Bionanotechnology, Bentham Science Publishers
- 2017 International Advisory Board Member, 12<sup>th</sup> International Conference "Medical Applications of Advanced Biomaterials and Nano-biotechnology" of the Forum on New Materials, CIMTEC, 2017-2018
- 2017 Editorial Board, The Scientific Pages of Nanotechnology, The Scientific Pages
- 2017 Advisory Board Member, Recent Patents in Material Science, Bentham Science Publishers
- 2016 Advisory Board Member, Innovate Pharma 2017, Sydney, Austria.
- 2016 Member of the Advisory Committee, 2017 Global Conference on Pharmaceutics and Drug Delivery Systems, Valencia, Spain
- 2016 Editorial Board, Journal of Biomaterials and Medical Applications, SciTechnol
- 2016 Member of the Advisory Board, Simon & Coulter Drug Bioavailability & Controlled Release Conferences (USA)
- 2016 Editorial Advisory Board, Current Clinical Pharmacology, Bentham Science Publishers
- 2016 Editorial Board, Current Regenerative Medicine, Bentham Science Publishers
- 2016 Editorial Board, Journal of Stem Cell Therapy and Transplantation, Heighten Science Publication
- 2016 Editorial Board, IEEE Pulse, Institute of Electrical and Electronic Engineers
- 2015 Editorial Board, International Nano Letters, Springer Publishers
- 2015 Editorial Board, SRL Stem Cell & Research, Sci Research Publishers
- 2015 Editorial Board, AIMS Bioengineering Journal, AIMS Press
- 2016 Editorial Board, SM Journal of Biomedical Engineering, SM Online Publishers
- 2016 International Advisory Board, 11<sup>th</sup> International Conference "Medical Applications of Novel Biomaterials and Nanotechnology" of International Conferences Materials and Technologies (CIMTEC), 2015-2016.
- 2015 Editorial Board, NanoBioMedicine Journal, InTech Publishing
- 2015 Editorial Board, Gels – Open Access Physical and Chemical Gels Journal, Multidisciplinary Digital Publishing Institute (MDPI) AG, Basel Switzerland
- 2014 Editorial Board, International Journal of Cancer Studies and Research, SciDoc Publishers

- 2013 Editorial Board, International Journal of Nanoscience and Technology, Wireilla Scinetific Publications
- 2013 International advisory board, 10<sup>th</sup> International Conference “Medical Applications of Novel Biomaterials and Nano-biotechnology” of the Forum on New Materials, 2013-2014.
- 2013 Editorial Board, Tissue Engineering – Biomed Research International, Hindawi Publishing
- 2012 Editorial Board, Open Journal of Composite Materials, Scientific Research Publishing
- 2012 Steering Committee, International Journal of Engineering and Technology Frontier, World Academic Publishing
- 2012 Scientific Advisor, International Conference on Tissue Science & Engineering, Chicago, USA, October 2012.
- 2012 International Advisory Board, Tissue Engineering and Regenerative Medicine International Society World Congress, Vienna, Austria, 2012.
- 2011 Editorial Board, Journal of Life Sciences and Medical Research, Academic Publishing
- 2011 Editorial Board, American J. of Biomedical Engineering, Scientific & Academic Publishing
- 2011 Editorial Board, Journal of Organic Polymer Materials, Scientific Research Publishers
- 2011 Advisory Board, Biomedical Applications of Smart Technologies, International Conferences Materials and Technologies, 2011-2012.
- 2011 Editorial Board, Creative Education, Scientific Research Publishing
- 2010 AO Foundation Review Panel
- 2010 Editorial Board, Journal of Biochips and Tissue Chips, OMICS Publishing Group
- 2009 Advisory Board: International Conference on Medical Applications of Novel Biomaterials and Nano-biotechnology
- 2009 Editorial Board, International Journal of Biomedical Nanoscience and Nanotechnology, Interscience Publishers
- 2009 Editorial Board, International Journal of Biomaterials, Hindawi Publishing Group
- 2008 Editorial Board: Tissue Engineering & Regenerative Medicine Journal, Bentham Publishers
- 2007 Advisory Board: International Conferences on Smart Materials, Structures, and Systems and Technologies

#### **IV. Organization of scientific conferences**

- 2019 Abstract Reviewer, Tissue Engineering and Regenerative Medicine International Conference, Orlando, FL, USA, December 2-5, 2019.
- 2020 Organizing Committee Member, World Nanotechnology Conference, Philadelphia, PA, USA, April 27-29, 2020.
- 2020 Advisory Board, 3<sup>rd</sup> Annual Formulation & Drug Delivery Congress, San Diego, CA, USA, March 17-18, 2020.
- 2020 Conference Convener, Medical Applications of Novel Biomaterials and Nanobiotechnology, Forum on New Materials, CIMTEC 2020, Montecatini Terme, Italy, June 15-23, 2020.
- 2018 Organizing Committee, 17<sup>th</sup> International Conference and Exhibition on Pharmaceutics & Novel Drug Delivery Systems, Moscow, Russia, October 4-6, 2018.
- 2018 Co-Chair, Program Committee, 1<sup>st</sup> Innovate Nanomedicine Conference, Houston Hilton-Americas, Houston, TX, USA, February 7-9, 2017.

- 2018 Organizing Committee, 15<sup>th</sup> International Conference on Pharmaceutical Formulations & Drug Delivery" (Pharma Formulations 2018), Philadelphia, PA, USA, September 17-18, 2018.
- 2018 Programming Committee Board, International Nanomedicine Conference, Houston, TX, USA, 2019.
- 2018 Organizing Committee Board, "25<sup>th</sup> Nano Congress for Future Advancements, Theme: Nascent Approaches for Nanotech Outreach, Dublin, Ireland, August 16-18, 2018.
- 2018 Organizing Committee Member, "International Research Summit on Biomaterials and Nanotechnology, Allied Academies, Atlanta, GA, USA, July 16-17, 2018.
- 2018 Organizing Committee Member, "International Conference on Cell Science and Molecular Biology," Paris, France, September 17-19, 2018.
- 2018 Chair and Editor, Micro- & Nano-bioengineering, Cellular and Tissue Engineering, 40<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE-EMBS), Hawaii Convention Center, Honolulu, Hawaii, USA, July 17-21, 2018.
- 2017 Organizing Committee Member, Global Meet on Nanomedicine & Toxicology, Allied Academies, New Orleans, USA, November 6-7, 2017.
- 2017 Organizing Committee Member, 7<sup>th</sup> International Conference on Tissue Engineering & Regenerative Medicine, TRYP Barcelona Apolo Hotel, Barcelona, Spain, October 2-4, 2017.
- 2017 Organizing Committee Member, 3<sup>rd</sup> Global Nanotechnology Congress and Expo, Crown Plaza Dubai, Dubai, United Arab Emirates, April 21-23, 2017.
- 2017 Organizing Committee Member, 15<sup>th</sup> World Medical Nanotechnology Congress & Expo, Hyatt Regency Osaka, Osaka, Japan, October 18-19, 2017.
- 2017 Organizer and Chair, Symposium on Commercialization of Biomaterials and Medical Products, Society for Biomaterials 2017 Annual Meeting, Minneapolis, MN, April 5-8, 2017.
- 2017 Chair and Editor, Micro- & Nano-bioengineering, Cellular and Tissue Engineering, 39<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE-EMBS), International Convention Center, Jeju Island, Korea, July 11-15, 2017.
- 2016 Organizing Committee member, 7<sup>th</sup> Annual Conference on Stem Cell and Regenerative Medicine, Manchester Marriott Hotel, Manchester, UK, August 4-5, 2016.
- 2016 Organizing Committee Member, 5<sup>th</sup> International Conference on Tissue Engineering and Regenerative Medicine, Berlin, Germany, September 12-14, 2016.
- 2016 Theme Chair and Editor, Micro/Nano-bioengineering, Cellular/Tissue Engineering & Biomaterials, 38<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE-EMBS), Disney's Contemporary Resort, Orlando, FL, August 16-20, 2016.
- 2016 Scientific Committee, 20<sup>th</sup> National Biomedical Engineering Meeting, hosted by Izmir Katip Celebi University, Euphoria Aegean Resort & Spa, Seferihisar, Turkey, November 3-5, 2016.
- 2016 Chair, Technical Committee on Bionanotechnology and BioMEMS, IEEE Engineering in Medicine and Biology Society, Piscataway, NJ 08854.
- 2016 Organizing Committee Member, Track Chairman, Regenerative Medicine Track, Global Biotechnology Conference 2016, Hynes-Beacon Convention Center, Boston, MA, USA, May 11 – 16, 2016.

- 2016 Organizing Committee Member, Annual Conference & Exposition on Biomaterials, London, UK, March 14-16, 2016.
- 2016 Organizing Committee Member, Global Nanotechnology Congress and Expo, Dubai, United Arab Emirates, April 21-23, 2016.
- 2015 Organizing Committee Member, Materials Science: An Interdisciplinary Approach to Science & Technology, World Congress and Expo on Materials Science & Polymer Engineering, Materials Science-2015, Crowne Plaza Dubai, Dubai, UAE, November 26-28, 2015.
- 2014 Symposium Organizer and Chair, "Morphogenic Peptides and Biomaterials in Tissue Regeneration," Society for Biomaterials Annual Meeting, Denver, CO.
- 2013 Track Co-Chair, "BioMEMS/NEMS in tissue engineering and biomaterials," Theme 7: Molecular and Cellular Biomechanics, Tissue Engineering, Biomaterials, Annual International Conference of IEEE Engineering in Medicine and Biology Society (EMBC'13), Osaka, Japan.
- 2013 Membership Committee, Tissue Engineering and Regenerative Medicine International Society – Americas (2013-2014)
- 2012 Editorial Board, E-Newsletter, Society for Biomaterials, Mt. Laurel, NJ, USA
- 2012 Organizer, "Bioinspiration and Biomimetics Symposium," 3<sup>rd</sup> TERMIS World Congress, Vienna, Austria, September 8, 2012, 14:15-15:45 PM (Session# 31, Zeremoniensaal Ballroom).
- 2012 Chair of Liaison Committee to coordinate activities between MRS and SFB, Society for Biomaterials
- 2012 Organizing Committee Member, International Conference on Tissue Science & Engineering, October 1-3, 2012, Chicago, IL, USA
- 2012 Co-Chair, Theme-7, Molecular, Cellular and Tissue Engineering and Biomaterials, IEEE-EMBS Conference, San Diego, CA, USA
- 2011 Technical committee member, Biotechnology group, IEEE-EMB Society.
- 2011 Co-Chair, Theme-7, Molecular, Cellular and Tissue Engineering and Biomaterials, IEEE-EMBS Conference, Boston, MA.
- 2010 Technical Committee member, Bio-Micro-Electro-Mechanical Systems (TC-BioMEMS), IEEE Engineering in Medicine and Biology Society (EMBS), Piscataway, NJ.

#### **V. Chair of meetings and symposia**

- 64. Session Chair, Nanostructured Biomimetic and Biohybrid Materials and Devices, [ID: 41206, Group: 22B05 Bionanotechnology], AIChE Annual Meeting, Hyatt Regency, Orlando, FL, November 10 – 15, 2019.
- 63. Session Chair, Nanostructured Biomimetic and Biohybrid Materials and Devices, [session ID: 38558, Group: 22B05 Bionanotechnology], AIChE Annual Meeting, David Lawrence Convention Center, Pittsburgh, PA, October 28, 3:30 – 6:00 PM.
- 62. Theme Plenary Session Chair, Nano- and Microfabricated Hydrogels for Regenerative Engineering, 40<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology (EMBC), Hawaii Convention Center, Honolulu, HI, USA, Wednesday, July 18, 2018, 15:30-16:30, Track T2, Meeting Room 312.
- 61. Theme Plenary Session Chair, Nanotechnology and Bioengineering for Intelligent Medical Devices, 40<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology

- (EMBC), Hawaii Convention Center, Honolulu, HI, USA, Thursday, July 19, 2018, 15:30-16:30, Track T1, Meeting Room 311.
60. Session Organizer and Chair, Biologically Inspired Regenerative Systems (Invited Session), 40<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology (EMBC), Hawaii Convention Center, Honolulu, HI, USA, Thursday, July 19, 2018, 10:00-11:30, Track T16, Meeting Room 323B.
  59. Poster Judge, 11<sup>th</sup> World Drug Delivery Summit: Frontiers Innovations in Drug Delivery Technology, Radisson North Baltimore, Baltimore, MD, USA, October 16, 2017.
  58. Chair, Day 1 Conference, 11<sup>th</sup> World Drug Delivery Summit: Frontiers Innovations in Drug Delivery Technology, Radisson North Baltimore, Baltimore, MD, USA, October 16, 2017.
  57. Session Chair, Nanotechnology for Biotechnology and Pharmaceuticals, AIChE Annual Meeting, Minneapolis Hilton & Convention Center, Minneapolis, MN, October 20 – November 3, 2017.
  56. Session Chair, Self-Assembled Biomaterials, [Session ID: 35590, Group: Bionanotechnology 22], AIChE Annual Meeting, Minneapolis Hilton & Convention Center, Minneapolis, MN, October 20 – November 3, 2017.
  56. Session Organizer and Chair, Biologically Inspired Regenerative Systems (session ID: SaAT6, Invited Session), 39<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology (EMBC), International Conference Center, Jeju Island, Korea, Saturday July 15, 2017, 8:00 – 9:00 AM (Zworykin Room).
  55. Session Chair, Drug Metabolism and Disposition, 2017 Global Conference on Pharmaceutics and Drug Delivery Systems, Valencia, Spain, June 29-July 1, 2017.
  54. Session Chair, “Investigational New Drugs, 2017 Global Conference on Pharmaceutics and Drug Delivery Systems, Valencia, Spain, June 29-July 1, 2017.
  53. Session Chair, Biotherapy and Radiopharmaceuticals, 2017 Global Conference on Pharmaceutics and Drug Delivery Systems, Valencia, Spain, June 29-July 1, 2017.
  52. Session Chair, Biomedicine and Pharmacotherapy, 2017 Global Conference on Pharmaceutics and Drug Delivery Systems, Valencia, Spain, June 29-July 1, 2017.
  51. Session Chair, Tissue Engineering, 20<sup>th</sup> BIYOMUT Congress, Euphoria Aegean Resort & Spa Hotel, Seferihisar, Izmir, Turkey, November 3, 2016 (3:00- 4:00 PM).
  50. Session Chair, “Medical Imaging & Stereoselective Synthesis of Bioactive Compounds Tracks,” Drug Discovery & Therapy World Congress and Global Biotechnology Congress, John B. Hynes Veterans Memorial Convention Center, Boston, MA, Tuesday, August 23, 2016, 11:00 AM – 12:40 PM (Lecture Hall 201, Level 2).
  49. Session Chair, Biomaterial-Cell Interactions,” Track 7, 38<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Disney’s Contemporary Resort, Orlando, FL, Wednesday, August 17, 2016, 8:30 – 9:30 AM (Fantasia K).
  48. Track Chair, Development of Preclinical Models with Advanced Incorporation of Metastatic Disease, 4<sup>th</sup> Tumor Annual Tumor Models, Colonnade Hotel, Boston, MA, Thursday, July 21, 2016, 11:50 AM -1:05 PM (Track A).
  47. Round-Table Chair, Enhancing Preclinical Models in the Development of Therapies Targeting Cancer Stem Cells, 4<sup>th</sup> Annual Tumor Models, Colonnade Hotel, Boston, MA, Wednesday, July 20, 2016, 4:30 – 5:30 PM.



46. Track Chair, 'Drug Metabolism," Drug Discovery & Therapy World Congress, John B. Hynes Memorial Convention Center, Boston, MA, May 11-14, 2016.
45. Session Co-Chair, "Self-Assembled Biomaterials I", [Session ID: 33040, Group: Bionanotechnology 22], AIChE Annual Meeting, San Francisco, CA, November 16, 2016, 12:30 – 3:00 PM (Hilton, Golden Gate 6).
44. Session Co-Chair, "Self-Assembled Biomaterials II", [Session ID: 34757, Group: Bionanotechnology 22], AIChE Annual Meeting, San Francisco, CA, November 16, 2016, 3:15 – 5:45 PM (Hilton, Golden Gate 6).
43. Track Chair, 'Drug Metabolism," Drug Discovery & Therapy World Congress and Global Biotechnology Congress, John B. Hynes Memorial Convention Center, Boston, MA, Thursday, July 23, 2015, 2:00 – 4:30 PM (Lecture Hall 203, Level 2).
42. Session Co-Chairperson, "Orthopedic Biomaterials LL," Society of Biomaterials Annual Meeting and Exposition, Charlotte Convention Center, Charlotte, NC, Thursday April 16, 2015, Concurrent Session 3, 10:30 AM – 12:30 PM (Room 217D).
41. Session Co-Chairperson, "Orthopedic Biomaterials I," Society of Biomaterials Annual Meeting and Exposition, Charlotte Convention Center, Charlotte, NC, Wednesday April 15, 2015, Concurrent Session 2, 4:15 PM – 6:15 PM (Room 217A).
40. Session Co-Chairperson, "Self-Assembled Biomaterials", [Session ID: 27822, Group: Bionanotechnology 22B10], AIChE Annual Meeting, Atlanta, GA, November 16-21, 2014.
39. Session Co-Chairperson, "Self-Assembled Biomaterials", [Session ID: 25495, Session 794 Group: Bionanotechnology], AIChE Annual Meeting, San Francisco, CA, Friday November 8, 2013, 8:30 AM – 11:00 AM (Continental 3, Hilton).
38. Minisymposium Co-Chair, "Tissues/Organs on Chip," Theme 7: Molecular and Cellular Biomechanics, Tissue Engineering, Biomaterials, Annual International Conference of IEEE Engineering in Medicine and Biology Society (EMBC'13), Osaka, Japan, Friday, July 5, 2013, 08:00-09:30, Track 21, 10-2 (10F).
37. Session Co-Chairperson, "Self-Assembled Biomaterials", [Session 22B17 Group: Bionanotechnology], AIChE Annual Meeting, Pittsburg, PA, Thursday November 1, 2012, 12:30-3:00 PM (Pittsburg Convention Center, Rm 310).
36. Poster Session Co-Chair, "Bioinspiration and Biomimetics," 3rd TERMIS World Congress, Vienna, Austria, September 8, 2012, 13:15-14:15 PM (Erzherzog Karl Saal, Hofburg Congress Centre).
35. Symposium Co-Chair, "Bioinspiration and Biomimetics Symposium," 3rd TERMIS World Congress, Vienna, Austria, September 8, 2012, 14:15-15:45 PM (Session# 31, Zeremoniensaal Ballroom).
34. Plenary Session Chair, "Advanced Drug Delivery for the 21st Century: Opportunities and Challenges," Theme 7: Cellular and Tissue Engineering and Biomaterials, Annual International Conference of IEEE Engineering in Medicine and Biology Society (EMBC'12), San Diego, CA, Wednesday, August 29, 2012, 8:15-9:15 AM (Session WeK1N, Sapphire Ballroom).
33. Minisymposium Co-Chair, "Biomaterial-Cell Interactions," Theme 7: Cellular and Tissue Engineering and Biomaterials, Annual International Conference of IEEE Engineering in Medicine and Biology Society (EMBC'12), San Diego, CA, Friday, August 31, 2012, 13:45-14:30 PM (Session FrC18, Aqua 309).

32. Session Co-Chair, "Physiological Monitoring I, Annual International Conference of IEEE Engineering in Medicine and Biology Society (EMBC'12), San Diego, CA, Wednesday, August 29, 2012, 16:45-17:45 PM (Session WeE08, Sapphire 411).
31. Plenary Session Chair, "Advanced Drug Delivery for the 21<sup>st</sup> Century: Opportunities and Challenges," Theme 7: Cellular and Tissue Engineering and Biomaterials, Annual International Conference of IEEE Engineering in Medicine and Biology Society (EMBC'12), San Diego, CA, Wednesday, August 29, 2012, 8:15-9:15 AM (Session WeK1N Sapphire Ballroom).
30. Track Chair, "Bone Tissue Engineering," International Conference on Tissue Engineering and Science, Hilton Chicago-North Shore, IL, USA, October 1-3, 2012.
29. Session Co-Chairperson, "Biomaterial-Cell Interactions," Theme: Cellular and Tissue Engineering and Biomaterials, 34<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine & Biology Society, Hilton San Diego Bayfront, San Diego, CA, August 28 – September 1, 2012.
28. Session Co-Chairperson, "Translational Issues in Tissue Engineering," Theme: Cellular and Tissue Engineering and Biomaterials, 34<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine & Biology Society, Hilton San Diego Bayfront, San Diego, CA, August 28 – September 1, 2012.
27. Symposium Co-Chairperson, "Specific Biomaterials as Basis of TERM: Bioinspiration and Biomimetics in TERM," Tissue Engineering and Regenerative Medicine International Society Conference, Vienna, Austria, September 5-8, 2012.
26. Panelist, Nanomedicine Science and Business Panel (Therapeutics and Diagnostics), Biomedical Engineering Society Annual Meeting, Hartford, CT, Fridays October 14, 2011.
25. Session Co-Chairperson, "Self-Assembled Biomaterials", [Session 22B17 Group: Bionanotechnology], AIChE Annual Meeting, Minneapolis, MN, October 16-21, 2011.
24. Session Co-Chairperson, "Musculoskeletal Tissue Engineering", Tissue Engineering Track, Biomedical Engineering Annual Conference, Hartford, CT, October 12-15, 2011.
23. Session Co-Chairperson, "Controlling Microenvironment and Cell Fate," Tissue Engineering and Regenerative Medicine International Society Conference, Orlando, FL, Dec. 6, 2010 (10:00-11:30 AM, Walt Disney Hilton)
22. Session Chairperson, "Self-Assembled Biomaterials", [Session 22B17 Group: Nanoscale Science and Engineering Forum], AIChE Annual Meeting, Salt Lake City, UT, November 12, 2010 (8:30 AM Canyon B Hilton).
21. Session Chairperson, "Regenerative Medicine and Tissue Engineering (session FL-4), 9<sup>th</sup> International Conference: Medical Applications of Novel Biomaterials and Nano-Biotechnology, Vittoria Congressi, Montecatini-Terme, Italy, Wednesday June 16, 2010 (10:30 – 12:40 Room Smeraldo 3).
20. Session Chairperson, "Self-Assembled Biomaterials II", [Session 22021 Group: Nanoscale Science and Engineering Forum], AIChE Annual Meeting, Nashville, TN, November 2009.
19. Session Organizer and Chairperson, "Drug Delivery in Tissue Engineering and Regenerative Medicine Poster Session," Society for Biomaterials Annual Meeting, San Antonio, TX, April 2009, Thursday, April 23, 2009, 5:15 – 6:00 PM and Friday, April 24, 2009, 3:30 – 4:15 PM.
18. Session Organizer and Chairperson, "Drug Delivery in Tissue Engineering and Regenerative Medicine Rapid Fire Session," Society for Biomaterials Annual Meeting, San Antonio, TX, April 2009, Thursday, April 23, 2009, 3:15 – 4:10 PM.
17. Session Organizer and Chairperson, "Drug Delivery in Tissue Engineering and Regenerative Medicine Oral session," Society for Biomaterials Annual Meeting, San Antonio, TX, April 2009, Thursday, April 23, 2009, 1:00 – 3:00 PM.

16. Session Chairperson, "Nanostructured Biomaterials," [Session 08b07; Group: Biomaterials (08b)], AIChE Annual Meeting, Philadelphia, PA, November 2008.
15. Session Chairperson, "Self-Assembled Biomaterials II," [Session 22B19; Group: Bionanotechnology Topical T8(22b)], AIChE Annual Meeting, Philadelphia, PA, Nov. 2008.
14. Session Co-Chairperson, "Biomaterials," [Session 08B00; Area: Biomaterials; Group: Materials Engineering and Sciences Division], AIChE Annual Meeting, Salt lake City, UT, Nov. 2007.
13. Session Chairperson, "Self-Assembled Biomaterials," [Session T8013; Group: Bionanotechnology Topical T8(22b)], AIChE Annual Meeting, Salt lake City, UT, Nov. 2007.
12. Session Chairperson, "Functional Biomaterials," [Session 08B13; Biomaterials; Group: Materials Engineering and Sciences Division], AIChE Annual Meeting, Salt lake City, UT, Nov. 2007.
11. Session Co-Chairperson, "Biomimetics III-Cell-Materials Interactions," AIChE Annual Meeting, San Francisco, CA, November 2006.
10. Session Co-Chairperson, "Poster session on Medical Engineering, Drug Delivery, and Therapeutic Systems," [Session TG008; Topical G: US-Japan Joint Topical Conference on Medical Engineering, Drug Delivery, and Therapeutic Systems], AIChE Annual Meeting, San Francisco, CA, November 2006.
9. Session Co-Chairperson, "Biomimetics," AIChE Annual Meeting, San Francisco, CA, Nov. 2006.
8. Session Co-Chairperson, "Biocomposites," AIChE Annual Meeting, San Francisco, CA, November 2006.
7. Session Chairperson, "Biomaterial Product Design," AIChE Annual Meeting, San Francisco, CA, November 2006.
6. Session Chairperson, "Self-Assembled Biomaterials," AIChE Annual Meeting, San Francisco, CA, November 2006.
5. Secretary/Treasurer, Tissue Engineering Special Interest Group, Society for Biomaterials, Mt. Laurel, NJ, 2005-2006.
4. Secretary/Treasurer, Drug Delivery Special Interest Group, Society for Biomaterials, Mt. Laurel, NJ, 2005-2006.
3. Session Chair, "Self-Assembled Biomaterials," Annual meeting of American Institute of Chemical Engineers, Cincinnati, OH, November 2005.
2. Session Co-Chair, "Tissue Engineering on Microfabricated Devices/Scaffolds," Annual Meeting of American Institute of Chemical Engineers, Austin, TX, November 2004.
1. Co-Chairperson of ASTM Task Force, "Development of Reference Scaffolds for Tissue Engineered Medical Products," Biomaterials and Biomolecules (F04.42), Polymer Division, National Institute of Standards and Technology (NIST), 2004.

## VI. Organization of Workshops

1. Workshop Co-Chairperson, Characterization of Fiber-Based Scaffolds: F04 Medical and Surgical Materials and Devices, ARMI I BIOFAB USA, 400 Commercial Street, Manchester, NH, August 10, 2018.

## VII. Reviewer for funding agencies

### National Science Foundation

- Industrial Innovation and Partnership for Innovation: Accelerating Innovation Research Review, November 2109.
- Biomechanics and Mechanobiology Career Review Panel, October 2019.
- Engineering of Medical Systems Career Review Panel, October 2019.
- Research Traineeship (NRT) Review, April 2019.
- Research Infrastructure Improvement Track-4, February 2019.
- Condensed Matter Physics Career Review, September 2018.

EPSCoR Research Infrastructure Improvement (RII) Track-1 Review Panel, October 2018.  
Biomechanics and Mechanobiology Career Review Panel, October 2018.  
Engineering of Biomedical Systems Career Review Panel, September 2018.  
Cell & Tissue Engineering SBIR/STTR Phase I Panel Review, September 2018.  
Biomechanics and Mechanobiology Career External Reviewer, May 2018.  
Engineering of Biomedical Systems Review Panel, February 2018.  
Biomechanics and Mechanobiology Review Panel, November 2017.  
Biomechanics and Mechanobiology Review Panel, April 2017.  
Biomechanics and Mechanobiology Review Panel, January 2017.  
Biomedical Engineering Career Review Panel, September 2016.  
Biomedical Engineering Review Panel, February 2016.  
Biomechanics and Mechanobiology of Cells and Tissue Review Panel, January 2016.  
Biomedical Engineering Review Panel, September 2015.  
Tissue Engineering & Regeneration SBIR/STTR Phase I Panel Review, September 2015.  
Tissue Engineering & Regeneration SBIR/STTR Phase I Panel Review, February 2015.  
Biomedical Engineering Review Panel, September 2014.  
Biomedical Engineering Review Panel, November 2013.  
Biomaterials Review Panel, October 2012.  
Biomedical Engineering Review Panel, October 2012.  
Biomechanics and Mechanobiology (BMMB) Review Panel, January 2012.  
Biomedical Engineering Review Panel, January 2012.  
Biomedical Engineering Review Panel, October 2011.  
Biomedical Engineering Review Panel, May 2011.  
Biomedical Engineering Review Panel, May 2010.  
Biomedical Engineering Review Panel, December 2009.  
Biomedical Engineering Career Review Panel, March 2009.  
Biomedical Engineering Review Panel, December 2008.  
Biomedical Engineering Review Panel, December 2006.  
Cooperative Science Program, December 2010.

#### National Institutes of Health

NIH Director's New Innovative Award Program, December 2019.  
NIH Small Business Applications in Orthopedic, Skeletal Muscle and Oral Sciences, June 2018.  
NIH Special Emphasis Panel/Scientific Review Panel: Bone, Cartilage, tendon, March 2018.  
NIH Special Emphasis Panel/Scientific Review Panel: Biology of Cartilage and Bone Cells, March 2018.  
NIH Musculoskeletal, Oral and Skin Sciences Special Emphasis Panel, March 2017.  
NIH NCI U01 Cancer Tissue Engineering Collaborative Review Panel, February 2017.  
NIH NCI U01 Cancer Tissue Engineering Collaborative Review Panel, October 2016.  
NIH NCI, Innovative Research in Cancer Nanotechnology Review Panel, July 2016 (Invited).  
NIH Musculoskeletal, Oral and Skin Sciences Special Emphasis Panel, June 2016 (Invited).  
NIH Musculoskeletal, Oral and Skin Sciences Special Emphasis Review Panel, February 2015.  
NIH NCI Innovative Research in Cancer Nanotechnology Special Emphasis Review Panel, February 2015.  
NIH Bioengineering Sciences and Technologies Panel Review, November 2015.  
NIH Small Business Oral, Dental & Craniofacial Sciences Review Panel, November 2015.  
NIH Bone, Cartilage, Tendon/Ligament Special Emphasis Panel, November 2015 (Invited).  
NIH Tissue Eng. & Targeted Drug Delivery Special Emphasis Panel, November 2015.  
NIH Tissue Eng. & Targeted Drug Delivery Special Emphasis Panel, July 2015 (Invited).  
NIH Cartilage and Tendon/Ligament Special Emphasis Panel, July 2015.

NIH Oral, Dental, Craniofacial Small-Business Review Panel, July 2015.  
 NIH – NCI Innovative Research in Cancer Nanotechnology review panel, March 2015.  
 NIH-NIBIB Bioengineering Sciences scientific review group, February 2015  
 NIH-NIBIB Review Panel, November 2014  
 NIH-NIAMS Review Panel, March 2014.  
 NIH-NIBIB Review Panel, February 2014.  
 NIH-NIAMS Review Panel, April 2013.  
 NIH-NIAMS Review Panel, March 2013.  
 NIH-NIAMSD Review Panel, Oct. 2012.  
 NIH-NSF New Biomed. Frontiers at Interf. of Life & Physical Sci. Review Panel, Oct. 2011.  
 NIBIB Career Awards (K mechanism) Review Panel, June 2011.  
 NIBIB LRP Review Panel, April 2011.  
 NIH-NSF New Biomed. Frontiers Interface Life & Physical Sci. Review Panel, Oct. 2010.  
 Musculoskeletal Tissue Engineering BRDG-SBIR Review Panel, Nov. 2009.  
 NIBIB Training/Career Awards Review Panel, Nov. 2009.

#### National Institute of Standards and Technology

Member of “Cell Viability Measurement in Tissue Engineering Scaffolds” Standard Group, January 2018.

#### Department of Defense

DoD CDMRP PRCRP Focused Program, November 2019.  
 Chairperson, Review Panel, DoD CDMRP PRMRP Tissue Regeneration-2 (Dis-TR-2) Program, June 2019.  
 DoD CDMRP PRMRP Tissue Regeneration-3 (TR-3) Program, April 2019.  
 DoD PRMRP Tissue Engineering Focused Program, November 2018.  
 DoD Nanomaterials for Bone Regeneration Focused Program, December 2017.  
 DoD PRORP Applied Research Award (ARA/EA) Surgical Care-2 Program, November 2017.  
 DoD Nanomaterials for Bone Regeneration Focused Program, December 2016.  
 DoD AMRMC Clinical and Rehabilitative Medicine Panel, October 2016.  
 DoD PRMRP Nanomaterials for Bone Regeneration Discovery Review Panel, September 2016.  
 DoD PRMRP Nanomaterials for Bone Regeneration Program Review Panel, December 2015.  
 DoD CDMRP, Army Medical Research & Material Command Review Panel, June 2015 (invited).  
 DoD CDMRP Orthopedic Research Program (PRORP) Review Panel, December 2014.  
 DoD DMRDP Defense Medical Research and Development Program Review Panel, August 2014.

#### American Association for the Advancement of Science

Washington State Life Discovery Fund 2009  
 Rhode Island Science and Technology Advisory Council 2010

Orthopedic Research & Education Foundation: New Investigator Grant Review Committee 2016

Kansas City Area Life Sciences Institute (KCALS) Nexus of Animal and Human Health Research Grants Review (2018, 2019)

NASA EPSCoR Research Program, State of West Virginia, Pre-Proposal Review and Evaluation (2019)

AO Foundation Peer-Review Panel (7/19/2010- present)

AO Panel Review, April 7, 2019

Czech Science Foundation 2016

Swiss National Science Foundation 2015 (invited)

UK Regenerative Medicine platform 2013  
 Poland National Science Center, OPUS Grants (2016)  
 French National Research Agency 2012  
 German Research Foundation (DFG, Deutsche Forschungsgemeinschaft) 2018  
 Kazakhstan National Centre for Science and Technology Evaluation (2014-present)  
 Qatar National Research Foundation (2011- present)  
 RUBRIQ Reviewer Network (2015 - Present)  
 Netherland Organization for Scientific Research (2006-present)  
 Petroleum Research Fund, ACS (2006-2008)  
 Austrian Research Fund (2012)  
 Netherlands Technology Foundation STW (2008-2011)  
 South Carolina Spinal Cord Injury Research Fund (2008-2010)  
 Canada Natural Sciences and Engineering Research Council (2014)  
 Dahlem Research Fellowship, Freie Universität Berlin (2017)

#### **VIII. Reviewer for scientific conferences**

Society for Biomaterials, Morphogenic Peptides & Biomater. in Tissue Regeneration, 2014.  
 Society for Biomaterials, Biomaterials synthesis, additive manufacturing/3D printing, and tissue engineering, 2019  
 Tissue Eng. & Regenerative Med. Int. Society, Biomimetic and Bioinspiration Track, 2012  
 Materials Research Society, 2012  
 Biomedical Engineering Society, Tissue Engineering Track, 2011  
 Society for Biomaterials, Drug Delivery in Tissue Engineering symposium, 2008  
 ASME International Conference on Manufacturing Science and Engineering, 2007  
 IEEE Engineering in Medicine and Biology Conference (EMBC), 2016

#### **IX. Reviewer for scientific journals**

Journal Applied Polymer Science	Journal Biomaterials Science-Polymer Edition
J. Biomedical Materials Research	J. Biomed Mater. Research Applied Biomater.
Annals of Biomedical Engineering	International Journal of Pharmaceutics
Biomaterials	Biomacromolecules
Biopolymers	Journal of Bioactive and Compatible Polymers
Macromolecular Bioscience	American Journal of Drug Delivery
Journal of Pharmacy & Pharmacology	Macromolecular Materials and Engineering
Polymer Composites	Polymer Letters
Acta Biomaterialia	Biomedical Microdevices
Macromolecular Chemistry and Physics	Nanotechnology
European J. Pharmaceut. Biopharmaceutics	Smart Materials and Structures
European Polymer Journal	Physics Letters
Stem Cells	Chemistry Today
Materials Chemistry and Physics	Journal of American Chemical Society

Journal of Controlled Release	Polymer
J. Industrial & Eng. Chemistry Research	Current Drug Safety
Journal of Materials Research	Biotechnology & Bioengineering
Chemical Product and Process Modeling	Industrial & Engineering Chemistry Research
International J. Molecular Sciences	Journal of Membrane Science
AIChE Journal	Analytical Biochemistry
Expert Opinion on Drug Delivery	Journal of Physics D-Applied Physics
J. Thermoplastic Composite Materials	Langmuir
Molecular Pharmaceutics	Pharmaceutical Research
Proceed. National Academy of Sciences	J. Tissue Engineering & Regenerative Medicine
Advanced Materials Letters	Mechanics of Materials
Journal of Biomechanics	Expert Opinion on Biological Therapy
Journal of Orthopedic Research	Journal of Creative Education
Journal of the Royal Society Interface	WIREs Nanomedicine & Nanobiotechnology
Nanomedicine	Integrative Biology
Journal of Visualized Experiments	Drug Discovery Today
Advanced Materials	PLoS ONE
Chemical Reviews	Advanced Functional Materials
ACS Neuroscience	ACS Nano
Nano Today	Scientific Reports
Science Advances	

### **UNIVERSITY SERVICE AND OUTREACH**

#### University

Member, Tenure and Promotion Committee, USC, 2017-Present  
 Member, Caravel Editorial Board, USC, 2015-2017  
 Member, Instructional Development Committee, USC, 2012-2014  
 Chair, University-Wide Instructional Development Committee, USC, 2011  
 Senator, Faculty Senate, University of South Carolina (USC), 2010-2014  
 Member, Intellectual Property Committee, Univ. South Carolina, 2011-2014  
 Member, university-wide faculty welfare committee, USC, 2007-2010  
 Member, Provost-chaired Biomedical Engineering Committee, USC, 2005-2006  
 Member, Chemical Engineering Undergraduate Committee, USC, 2008-2010  
 Member, Chemical Engineering Graduate Recruiting Committee, USC, 2008-2009  
 Member, Biomedical Engineering Faculty Search Committee, USC, 2006-2008  
 Faculty mentor, Theta Tau Colony, University of South Carolina, 2008-present

#### Community

Organizer, High-School Teacher Workshop, Impact of bionanotechnology on education, Annual Meeting of SC Academy of Science and Engineering, April 16, 2009  
 Mentor, Robotic team, First Robotics Tour, University of South Carolina, April 1, 2005  
 Judge, Annual Science and Engineering Fair, Columbia, SC, 2005-2010  
 Judge, Hammond High School, Science Fair, 2010

### **SCHOLARLY AND PROFESSIONAL PUBLICATIONS (>5760 citations, h-index 43, i10-index 100; 310 research articles on Google Scholar)**

#### **I. Books**

1. E. Jabbari, Editor, "Hyrogels in Tissue Engineering, MDPI (2018). ISBN (Pbk) 978-3-03897-121-4; ISBN (PDF) 978-3-03897-122-1.
2. E. Jabbari, A. Khademhosseini, D. Kim, L. Lee, and A. Ghaemmaghami, "Handbook of Biomimetics and Bioinspiration," World Scientific Publishers, Published March 15, 2014.
3. M. Ramalingam, E. Jabbari, S. Ramakrishna, and A. Khademhosseini Editors, "Micro and Nanotechnologies in Engineering Stem Cells and Tissues," Wiley-IEEE Press, Hoboken, New Jersey, 328 pages, Published June (2013).
4. E. Jabbari, A. Khademhosseini Editors, "Biologically-Responsive Hybrid Biomaterials," World Scientific Publishers, ISBN: 978-981-4295-67-3, 423 pages, Published March (2010).

## II. Encyclopedia entry

1. Sina Moeinzadeh and Esmail Jabbari, "Nanoparticles and applications in nanotechnology," in Section: Nanomaterials and Nanostructures, in Encyclopedia of Nanotechnology, Bharat Bhushan Ed., Springer, New York, NY, November 2017, pp. 335-361.
2. E. Jabbari, "Nanoengineered hydrogels for cell engineering," in Encyclopedia of Nanotechnology, Bharat Bhushan Ed., Springer, New York, NY, Chap. 404, Vol. 3, , pp. 1539-1543 (2012). DOI 10.1007/978-90-481-9751-4

## III. News Articles

1. Feature Article, E. Jabbari and K. Liszewski, "Modeling Virulent Cancer Stem Cells," in New Dimensions in 3D Cell Culture in Genetic Engineering News, July 26 issue (2016). [www.genengnews.com](http://www.genengnews.com)

## IV. Editorials

1. E. Jabbari, "Hydrogels for Cell Delivery," in Special Issue "Hydrogels in Tissue Engineering," Esmail Jabbari: Special Issue Editor, Gels 2018, 4, 58; Published July 2, 2018, doi: 10.3390/gels4030058.

## V. Book chapters

21. Seyed Mohammad Davachi, Behzad Shiroud Heidari, Victor Anthony Madormo, Tara Michelle DeSpirito, Esmail Jabbari, "Biocompatible Polymers for 3D printing," in 3D printing, Utkan Demirci: Editor-In-Chief, in Emerging Technologies for Biofabrication and Biomanufacturing Book Series, World Scientific Publishing, in Press (2021).
20. S. Moeinzadeh, E. Jabbari, "3D cell culture in micro-patterned hydrogels prepared by photomask, micro-needle or soft lithography techniques," in 3-D Cell Culture: Methods and Protocols, Zuzana Zuzana Koledova Ed., in Methods in Molecular Biology Book Series, Springer Publishing, Chapter 18, pp. 239-252 (2016).
19. S. R. Pajuom Shariati, S. Moeinzadeh, E. Jabbari, "Hydrogels for Cell Encapsulation and Bioprinting," in Bioprinting, Kursad Turksen Ed., in Stem Cells and Regenerative Medicine Book Series, Springer Publishing, Chapter 4, pp. 89-108 (2015).
18. S. Moeinzadeh and E. Jabbari, "Morphogenic peptides in regeneration of load bearing tissues," in Engineering Mineralized and Load Bearing Tissues, Luiz Bertassoni Ed., in Advances in Experimental Medicine and Biology Series 881, Springer Publishing, Part 3, Section 1, Chapter 6, pp. 95-110 (2015).



17. T. Karimi, Seyedsina Moeinzadeh, and E. Jabbari, "Growth factors for musculoskeletal tissue engineering," in *Regenerative Engineering Musculoskeletal Tissues and Interfaces*, Editors, Syam Nukavarapu, Joseph Freeman, Cato Laurencin, Woodhead Publishing, Part I, Chapter 3, 43-76 (2015).
16. E. Jabbari, "Nanoparticles for Stem Cell Engineering," in *Stem Cell Nanoengineering*, Hossein Baharvand and Nasser Aghdami Eds., Wiley-Blackwell Publishing, Part 3, Chapter 9, pp. 143-170 (2014).
15. E. Jabbari, "Bioinspired Nanomaterials for Bone Regeneration," in *Nanopatterning and nanoscale devices for biological applications*, Seila Selimovic Editor, CRC Press, Section III, Chapter 13, 329-342 (2014).
14. S. Moeinzadeh and E. Jabbari, "Nanostructure formation in hydrogels," in *Handbook of Nanomaterials Properties*, Editors: Bharat Bhushan, Dan Luo, Scott R. Schricker, Wolfgang Sigmund, Stefan Zauscher, Series on Springer Materials, Springer-Verlag, Berlin, Germany, 1464 pages, Publication Date: April 30, 2014, Chapter 9, pp. 285-297 (2014).
13. E. Jabbari, "Bio-inspired engineered matrix to regulate cancer stem cell niche," in *Handbook of Biomimetics and Bioinspiration*, Esmail Jabbari, Deok-Ho Kim, Luke P. Lee, and Amir Ghaemmaghami, Ali Khademhosseini Eds., World Scientific Publishers, New York, NY, Volume 3, Chapter 45, pp. 1257-1274 (2014).
12. Yunqing Kang, Esmail Jabbari, Yunzhi Yang, "Integrating top-down and bottom-up scaffolding tissue engineering approach for bone regeneration," in *Micro and Nanotechnologies in Engineering Stem Cells and Tissues*, M. Ramalingam, E. Jabbari, S. Ramakrishna, and A. Khademhosseini Eds., Wiley-IEEE, Hoboken, New Jersey, Chapter 6, pp. 142-151 (2013).
11. Esmail Jabbari and Murugan Ramalingam, "Auto-Inductive Scaffolds for Osteogenic Differentiation of Mesenchymal Stem Cells," in *Handbook of Biomaterials and Stem Cells in Regenerative Medicine*, by Murugan Ramalingam, Seeram Ramakrishna, Serena Best, Eds., CRC Press, Chapter 8, pp. 169-183. (2012).
10. Esmail Jabbari, "Engineering Bone Formation with Biologically Inspired Nanomaterials," in *NanoTechnology: Fabrication, Nano-Electronics, Bio-electronics and Nano-Photonics*, Kris Iniewski Ed., Taylor & Francis, Chapter 30, pp. 651-664 (2011).
9. A.S. Sarvestani and E. Jabbari, "Macro, Micro and Nano Mechanics of Multiphase Polymer Systems", in *Handbook of Multiphase Polymer Systems*, Editors Abderrahim Boudenne, Laurent Ibos, Yves Candau, Sabu Thomas, Wiley – Blackwell, Chapter 2, pp. 13-29 (2011).
8. E. Jabbari, "Photocrosslinking of biocompatible and degradable lactide-co-ethylene oxide-co-fumarate macromers", in *Basics and Applications of Photopolymerization Reactions*, in *Applied Polymer Science Series*, Editors Jean Pierre Fouassier and Xavier Allonas, Research Signpost, Volume 3, Chapter 5, pp. 67-76 (2010).
7. 6. A.S. Sarvestani and E. Jabbari, "Nonlinear viscoelastic behavior of rubbery bionanocomposites," in *Rubber Nanocomposites: Preparations, Properties and Applications*, Editors Sabut Thomas and Ranimol Stephen, Wiley & Sons, Hoboken, NJ, Chapter 13, pp. 331-351, (2009).
5. A.S. Sarvestani and E. Jabbari, "Rheological and Mechanical Properties of Biologically Inspired Nanocomposites," in *Progress in Biopolymer Research*, Editor Pablo C. Sánchez, Nova Publishers, Chapter 1, pp. 13-44 (2007).
4. E. Jabbari and A.S. Sarvestani, "Bioinspired Engineered Nanocomposites for Bone Tissue Engineering," in *Micro- and Nanoengineering of the Cell Microenvironment: Technologies and Applications*,

- Editors A. Khademhosseini, J. Borenstein, S. Takayama, M. Toner, Artech House Publishing, Boston, MA, Chapter 22, p. 461-482 (2007).
3. M.J. Moore, L. Lu, E. Jabbari, and M.J. Yaszemski, "Animal Models for Evaluation of Tissue Engineered Orthopedic Implants," In: *CRC's Biomedical Engineering Handbook (Volume: Tissue Engineering and Artificial Organs)*, Editors John P. Fisher, Antonios G. Mikos, and Joseph D. Bronzino, Taylor & Francis, Boca Raton, FL, 3ed Edition, Chapter 45, pp. 45.1-45.9 (2006).
  2. E. Jabbari L. Lu, and M.J. Yaszemski, "Synthesis and Characterization of Injectable and Biodegradable Composites for Orthopedic Applications," in *Handbook of Biodegradable Polymeric Materials and Their Applications*, Editors S. K. Mallapragada and B. Narasimhan, American Scientific Publishers, Stevenson Ranch, CA, Vol. 2, Chapter 11, pp. 239-270 (2004).
  1. E. Jabbari, L. Lu, B.L. Currier, A.G. Mikos, and M.J. Yaszemski, "Injectable Polymers and Hydrogels for Orthopedic and Dental Applications," in *Tissue Engineering in Musculoskeletal Clinical Practice*, Editor L.J. Sandell, American Academy of Orthopaedic Surgeons, Rosemont, IL, Chapter 32, pp. 331-340 (2004).

## VI. Refereed publications

129. Yousef Mohammadi<sup>1</sup>, Mohammad Reza Saeb, Alexander Penlidis, Esmail Jabbari, Florian J. Stadler, Philippe Zinck, and Eduardo Vivaldo-Lima, Towards olefin multi-block copolymers with tailored properties: a molecular perspective, *Macromolecular Theory Simulations*, in Press (2021).
128. Nadeem Siddiqui, Braja Kishori, Saranya Rao, Anjum Shaikh, Hemanth Sai, Swati Das, Esmail Jabbari, Electropsun polycaprolactone fibers in bone tissue engineering: a review, *Molecular Biotechnology*, in Press (2021).
127. Hessam Jafari, Mehdi Hassanpour, Ali Akbari, Jafar Rezie, Gholamreza Gohari, Gholamreza Mahdavinia, and Esmail Jabbari, Characterization of pH-sensitive chitosan/hydroxypropyl methylcellulose composite nanoparticles for delivery of melatonin in cancer therapy, *Materials Letters*, 282:128818 (2021).
126. Mehran Alavi, Erfan Jabari, and Esmail Jabbari, Functionalized carbon-based nanomaterials and quantum dots with antibacterial activity: A review, *Expert Review of Anti-infective Therapy*, 19(1):35-44 (2021) DOI: 10.1080/14787210.2020.1810569.
125. Jacob Anderson, Shailesh Shori, Esmail Jabbari, Harry J. Ploehn, Francis Gadala-Maria and Dimitrios Priftis, Correlating coating quality of coverage with rheology for mica-based paints, *Applied Rheology*, 30:119-129 (2020).
124. Sobhan Ghaeini-Hesaroeiye, Hossein Razmi Bagtash, Soheil Boddohi, Ebrahim Vasheghani-Farahani, Esmail Jabbari, Thermo-responsive nanogels based on different polymeric moieties for biomedical applications, *Gels*, 6(3):20 (2020) <https://doi.org/10.3390/gels6030020>.
123. Ali Akbari, Nassrollah Jabbari, Roholah Sharifi, Mahdi Ahmadi, Ali Vahhabi, Seyyed Javad Seyedzadeh, Muhammad Nawaz, Sławomir Szafert, Monireh Mahmoodi, Esmail Jabbari, Rahim Asghari and Jafar Rezaie, Free and Hydrogel Encapsulated Exosome-Based Therapies in Regenerative Medicine, *Life Sciences*, 249:117447 (2020).
122. Maryam Ijadi Bajestani, Safaa Kader, Mehri Monavarian, Seyed Mohammad Mousavi, Esmail Jabbari, Arezou Jafari, Material properties and cell compatibility of poly ( $\gamma$ -glutamic acid)-keratin hydrogels, *International Journal of Biological Macromolecules*, 142:790-802 (2020).
121. Christopher Isely, Michael A. Hendley, Kendall P. Murphy, Safaa Kader, Prakasam Annamalai, Esmail Jabbari, R. Michael Gower, Development of microparticles for controlled release of resveratrol to adipose tissue and the impact of drug loading on particle morphology and drug

- release, *International Journal of Pharmaceutics*, 568:118469 (2019). ISSN 0378-5173, <https://doi.org/10.1016/j.ijpharm.2019.118469>.
120. Safaa Kader, Mehri Monavarian, Danial Barati, Seyedsina Moeinzadeh, Thomas M. Makris, Esmail Jabbari, Plasmin-cleavable nanoparticles for on-demand release of morphogens in vascularized osteogenesis, *Biomacromolecules*, 20:8 2973-2988 (2019). [doi.org/10.1021/acs.biomac.9b00532](https://doi.org/10.1021/acs.biomac.9b00532)
119. Esmail Jabbari, Challenges for natural hydrogels in tissue engineering, in Special Issue: Challenges for Gel Materials in the 21<sup>st</sup> Century, *Gels*, 5:30 (2019). DOI:10.3390/gels5020030
118. Mojtaba Amini, Hadi Naslhajian, Ali Akbari, S. Morteza F. Farnia, Esmail Jabbari, Sanjeev Gautam, Keun Hwa Chae, A novel high-flux, thin-film composite desalination membrane via co-deposition of multifunctional POSS and polyoxometalate, *Polyhedron*, 168:138-145 (2019).
117. Mehri Monavarian, Safaa Kader, Seyedsina Moeinzadeh, Esmail Jabbari, Regenerative scar-free skin wound healing, *Tissue engineering, Part B: Reviews*, 25(4):294-311 (2019) doi: 10.1089/ten.TEB.2018.0350.
116. Yousef Mohammadi, Mohammad Reza Saeb, Alexander Penlidis, Esmail Jabbari, Florian J. Stadler, Philippe Zinck, Krzysztof Matyjaszewski, Intelligent machine learning: Tailor-making macromolecules, 11(4):579 (2019) <https://doi.org/10.3390/polym11040579>.
115. Danial Barati, Ozan Karaman, Seyedsina Moeinzadeh, Safaa Kader, Esmail Jabbari, Material and Regenerative Properties of an Osteon-Mimetic Cortical Bone-Like Scaffold, *Regenerative Biomaterials*, 6:2, 89-98 (2019) DOI: 10.1093/rb/rbz008.
114. Nasser Arsalani, Fahimeh kazeminava, Ali Akbari, Hamed Hamishehkar, Esmail Jabbari, Hossein Samadi Kafil, Synthesis of POSS nano-crosslinked PEG-based hybrid hydrogels for drug delivery and antibacterial activity, *Polymer International*, 68(4): DOI: 10.1002/pi.5748 (2018).
113. Ali Akbari, Nasser Arsalani, Bagher Eftekhari-Sis, Mojtaba Amini, Gholamreza Gohari and Esmail Jabbari, Cube-octameric silsesquioxane (POSS)-capped magnetic iron oxide nanoparticles exhibiting an efficient removal of methylene blue, *Frontiers of Chemical Science and Engineering*, 13:563–573 (2019).
112. Seyedsina Moeinzadeh, Mehri Monavarian, Safaa Kader, Esmail Jabbari, Sequential zonal chondrogenic differentiation of mesenchymal stem cells in cartilage matrices, *Tissue Engineering Part A*, 25(3-4): 234-247 (2019). doi: 10.1089/ten.TEA.2018.0083
111. Yousef Mohammadi, Mohammad Saeb, Alexander Penlidis, Esmail Jabbari, Philippe Zinck, Florian Stadler, Krzysztof Matyjaszewski, Intelligent Monte Carlo: A new paradigm for inverse polymerization engineering, *Macromolecular Theory and Simulations*, 27(3):1700106 DOI: 10.1002/mats.201700106 (2018). **(selected for Best of Macromolecular Journals 2019 Edition)**.
110. Mojtaba Amini, Ali Akbari, Abbas Tarassoli, and Esmail Jabbari, Transition metal oxide nanoparticles as efficient catalysts in oxidation reactions, *Nano-Structures & Nano-Objects*, 14:19-48 (2018).
109. Mehran Miroliaei, Peymaneh Shafaei, Akram Aminjafari, Danial Barati, Riley Meekins, Safaa Kader, Kostelnik J. Colton, Esmail Jabbari, Protection against advanced glycation end products and the mode of action of lemon balm on hemoglobin fructose-mediated glycation, *Medicinal Chemistry*, 7(10): 314-320 (2017). DOI: 10.4172/2161-0444.1000474
108. Hadi Shirali, Mehdi Rafizadeh, Faramarz Afshar Taromi, Esmail Jabbari, Fabrication of In-situ polymerized Poly(butylene succinate-co-ethylene terephthalate)/hydroxyapatite Nanocomposite to Fibrous Scaffolds for Enhancement of Osteogenesis, *Journal of Biomedical Materials Research*, 105(9):2622-2631 (2017). doi: 10.1002/jbm.a.36115.

107. Mehdi Kazemzadeh-Narbat, Jeroen Rouwkema, Nasim Annabi, Hao Cheng, Masoumeh Ghaderi, Byung-Hyun Cha, Mansi Aparnathi, Akbar Khalilpour, Batzaya Byambaa, Esmaiel Jabbari, Ali Tamayol, Ali Khademhosseini, Engineering Photocrosslinkable Bicomponent Hydrogel Constructs for Creating 3D Vascularized Bone, *Advanced Healthcare Materials*, 6 (10): 1601122 10.1002/adhm.201601122 (2017).
106. Seyedsina Moeinzadeh, Seyed Ramin Pajoum Shariati, Safaa Kader, Juan M. Melero-Martin, Esmaiel Jabbari, Devitalized stem cell microsheets for sustainable release of osteogenic and vasculogenic growth factors and regulation of anti-inflammatory immune response, *Advanced Biosystems*, 1(3):1600011 (2017).
105. S. Prakash Parthiban, Deepti Rana, Esmaiel Jabbari, Nadia Benkirane-Jessel, Murugan Ramalingam, Covalently immobilized VEGF-mimicking peptide with gelatin methacrylate enhances microvascularization of endothelial cells, *Acta Biomaterialia*, 51:330-340 (2017) doi: 10.1016/j.actbio.2017.01.046. Epub 2017 Jan 19
104. Danial Barati, Safaa Kader, Seyed Ramin Pajoum Shariati, Seyedsina Moeinzadeh, Roger H. Sawyer, Esmaiel Jabbari, Synthesis and characterization of photocrosslinkable keratin hydrogels for stem cell encapsulation, *Biomacromolecules*, 18(2): 398-412 (2017).
103. Ali Akbari, Nasser Aarsalani, Mojtaba Amini, Esmaiel Jabbari, Sanjeev Gautam, Keun Hwa Chae, A novel organic-Inorganic hybrid nanocomposite immobilized Pd catalyst for Heck reaction in aqueous media, *Catalysis Letters*, 147:1086-1094 (2017). doi:10.1007/s10562-016-1954-8.
102. Sogol Naghavi Sheikholeslami, Mehdi Rafizadeh, Faramarz Afshar Taromi, Hadi Shirali, Esmaiel Jabbari, Material properties of degradable poly(butylene succinate-co-fumarate) copolymer networks synthesized by polycondensation of pre-homopolyesters, *Polymer*, 98: 70-79 (2016).
101. Seyedsina Moeinzadeh, Seyed Ramin Pajoum Shariati, Esmaiel Jabbari, Comparative effect of physicommechanical and biomolecular cues on zone-specific chondrogenic differentiation of mesenchymal stem cells, *Biomaterials*, 92: 57-70 (2016).
100. Ali Akbari, Nasser Aarsalani, Mojtaba Amini, and Esmaiel Jabbari, Cube-octameric Silsesquioxane-mediated cargo copper Schiff base for efficient click reaction in aqueous media, *Journal of Molecular Catalysis A: Chemical*, 414: 47-54 (2016).
99. D. Barati, S.R. Pajoum Shariati, S. Moeinzadeh, J.M. Melero-Martin, A. Khademhosseini, E. Jabbari, Spatiotemporal release of BMP-2 and VEGF enhances osteogenic and vasculogenic differentiation of human mesenchymal stem cells and endothelial colony-forming cells co-encapsulated in a patterned hydrogel, *Journal of Controlled Release*, 223: 126-136 (2015).
98. S.R. Pajoum Shariati, S. Meinzadeh, E. Jabbari, Nanofiber Based Matrices for Chondrogenic Differentiation of Stem Cells, Special Issue: Role of Nanotechnology in Stem Cell Research, *Journal of Nanoscience and Nanotechnology*, 16: 8966-8977 (2016).
97. E. Jabbari, J. Leijten, Q. Xu, and A. Khademhosseini, The matrix reloaded: the evolution of regenerative hydrogels, *Materials Today*, doi:10.1016/j.mattod.2015.10.005 (2015).
96. E. Jabbari, S.K. Sarvestani, L. Daneshian, and S. Moeinzadeh, Optimum 3D matrix stiffness for maintenance of cancer stem cells is dependent on tissue origin of cancer cells, *PLOS One*, 10(7) (2015) e0132377, doi:10.1371/journal.pone.0132377. (top 10% of most cited papers in PLOS ONE)
95. N. Siddiqui, K. Pramanik, E. Jabbari, Osteogenic differentiation of human mesenchymal stem cells in freeze-gelled chitosan/nano  $\beta$ -tricalcium phosphate porous scaffolds crosslinked with genipin, *Materials Science and Engineering Part C*, 54 (2015) 76-83.

94. A. Gasparian, L. Daneshian, H. Ji, E. Jabbari (corresponding Author), and M. Shtutman (corresponding Author), "Purification of high quality RNA from synthetic, polyethylene glycol based hydrogels," *Analytical Biochemistry: Methods in the Biological Sciences*, 484 (2015) 1-3.
93. S. Moeinzadeh and E. Jabbari, "Gelation characteristics, physico-mechanical properties and degradation kinetics of micellar hydrogels," *European Polymer Journal*, 72:566-576 (2015).
92. D. Barati, J. Walters, S.R. Pajoum Shariati, S. Moeinzadeh, E. Jabbari, "Effect of organic acids on calcium phosphate nucleation and osteogenic differentiation of human mesenchymal stem cells on peptide functionalized nanofibers," *Langmuir*, 31:5130-5140 (2015).
91. T. Karimi, D. Barati, O. Karaman, S. Moeinzadeh, E. Jabbari, "Developmentally inspired combined mechanical and biochemical signaling approach on zonal lineage commitment of mesenchymal stem cells in articular cartilage regeneration," *Integrative Biology*, 7:112-117 (2015).
90. S. Moeinzadeh, D. Barati, S.K. Sarvestani, T. Karimi, E. Jabbari, "Experimental and computational investigation of the effect of hydrophobicity on aggregation and osteoinductive potential of bmp-2 derived peptide in a hydrogel matrix," *Tissue Engineering Part A*, 21(1-2):134-146 (2014).
89. D. Barati, S. Moeinzadeh, O. Karaman, E. Jabbari, Time dependence of material properties of polyethylene glycol hydrogels chain extended with short hydroxy acid segments, *Polymer*, 55(16):3894-3904 (2014).
88. M. Hasan, N. Belhaj, H. Benachour, M. Barberi-Heyob, C.F.J. Kahn, E. Jabbari, M. Linder, E. Arab-Tehrany, Liposome encapsulation of curcumin: physico-chemical characterizations and effects on MCF7 cancer cell proliferation, *International Journal of Pharmaceutics*, 461(1-2): 519-528 (2014).
87. S. Moeinzadeh, D. Barati, S.K. Sarvestani, O. Karaman, E. Jabbari, "Nanostructure formation and transition from surface to bulk degradation in polyethylene glycol gels chain-extended with short hydroxy acid segments," *Biomacromolecules*, 14(8): 2917-2928 (2013).
86. O. Karaman, A. Kumar, S. Moeinzadeh, X. He, T. Cui, E. Jabbari, "Effect of surface modification of nanofibers with glutamic acid peptide on calcium phosphate nucleation and osteogenic differentiation of marrow stromal cells," *Journal of Tissue Engineering and Regenerative Medicine*, 10: E132-146 (2016) PMID: 23897753
85. X. Yang, S.K. Sarvestani, S. Moeinzadeh, X. He, E. Jabbari, "Effect of cd44 binding peptide conjugated to an engineered inert matrix on maintenance of breast cancer stem cells and tumorsphere formation," *PLOS ONE*, 8(30): e59147 (2013).
84. A. Nussler, N. Tapia, and E. Jabbari, "Report of the 3rd Royan Summer School in Tehran," *Stem Cell Reviews and Reports*, 9(2): 119-120 (2013).
83. E. Jabbari, "Osteogenic peptides in bone regeneration," Special Issue: Bone Morphogenetic Proteins (BMPs) for Bone Regeneration, *Current Pharmaceutical design*, 19(19): 3391-3402 (2012).
82. Z. Jangravi, M. Alikhani, B. Arefnejad, M. Sharifi Tabar, S. Taleahmad, R. Karamzadeh, M. Jadalih, S.A. Mousavi, D. Ahmadi Rastegar, P. Parsamatin, H. Vakilian, S. Mirshahvaladi, M. Sabbaghian, A. Mohseni Meybodi, M. Mirzaei, M. Shahhoseini, M. Ebrahimi, A.A. Moosavi-Movahedi, P.A. Haynes, A. Goodchild, M.H. Nasr-Esfahani, E. Jabbari, H. Baharvand, M.A. Sedighi Gilani, H. Gourabi, G. Hosseini Salekdeh, "A fresh look at the male-specific region of the human Y chromosome," *Journal of Proteome Research*, in Press 12(1): 6-22 (2013).
81. E. Jabbari, X. Yang, S. Moeinzadeh, and X. He, "Drug release kinetics, cell uptake, and tumor toxicity of hybrid VVVVVVKK peptide-assembled polylactide nanoparticles," *European Journal of Pharmaceutics and Biopharmaceutics*, 84(1): 49-62 (2012).

80. X. Yang, S.K. Sarvestani, S. Moeinzadeh, X. He, and E. Jabbari, "Three-dimensional engineered matrix to study cancer stem cells and tumorsphere formation: Effect of matrix modulus," *Tissue Engineering*, 19(5-6): 669-684 (2012).
79. X. Yang, X. He, Z. Yang, and E. Jabbari, "Mammalian PER2 regulates AKT activation and DNA damage response," *Biochemistry and Cell Biology*, 90: 675-682 (2012).
78. S. Moeinzadeh, D. Barati, X. He, and E. Jabbari, Gelation characteristics and osteogenic differentiation of stromal cells in inert hydrolytically degradable micellar polyethylene glycol hydrogels, *Biomacromolecules*, 13: 2073-2086 (2012).
77. X. He, X. Yang, and E. Jabbari, Combined effect of osteopontin and BMP-2 derived peptides grafted to an adhesive hydrogel on osteogenic and vasculogenic differentiation of marrow stromal cells, *Langmuir*, 28: 5387-5397 (2012).
76. A.E. Mercado, X. Yang, X. He, E. Jabbari, Effect of grafting BMP2 derived peptide to nanoparticles on osteogenic and vasculogenic expression of stromal cells, *Journal of Tissue Engineering and Regenerative Medicine*, 8(1):15-28 (2014).
75. S. Moeinzadeh and E. Jabbari, Mesoscale simulation of the effect of lactide segment on nanostructure of star poly(ethylene glycol-co-lactide)-acrylate macromonomers in aqueous solution, *Journal of Physical Chemistry B*, 116(5): 1536-1543 (2012).
74. S. Moeinzadeh, S. Nouri Khorasani, J. Ma, X. He, E. Jabbari, Synthesis and gelation characteristics of photo-crosslinkable star Poly(ethylene oxide-co-lactide-glycolide acrylate) macromonomers, *Polymer*, 52: 3887-3896 (2011).
73. Wheeldon I., Farhadi A., Bick A.G., Jabbari E., Khademhosseini A., Nanoscale tissue engineering: spatial control over cell-materials interactions, *Nanotechnology*, 22(21):212001 (2011).
72. E. Jabbari, Bioconjugation of hydrogels for tissue engineering, in Tissue, Cell, and Pathway Engineering issue, *Current Opinion in Biotechnology*, 22: 655-660 (2011).
71. Ma J., He X., Jabbari E., Osteogenic differentiation of marrow stromal cells on random and aligned electrospun poly(l-lactide) nanofibers, *Annals of Biomedical Engineering*, 39(1): 14-25 (2011).
70. Mercado A. E., Jabbari E., The effect of encapsulation or grafting on release kinetics of recombinant human bone morphogenetic protein-2 from self-assembled poly(lactide-co-glycolide ethylene oxide fumarate) nanoparticles, *Microscopy Research and Technique*, 73: 824-833 (2010).
69. He X., Ma J., Jabbari E., Migration of marrow stromal cells in response to sustained release of stromal-derived factor-1 $\alpha$  from poly(lactide ethylene oxide fumarate) hydrogels, *International Journal of Pharmaceutics*, 390: 107-116 (2010).
68. Xu W., Ma J., Jabbari E., Material properties and osteogenic differentiation of marrow stromal cells on fiber-reinforced laminated hydrogel nanocomposites, *Acta Biomaterialia*, 6: 1992-2002 (2010).
67. Kaur G., Valarmathi M.T., Potts, J.D., Jabbari E., Sabo-Attwood, T., Wang Q., Regulation of osteogenic differentiation of rat bone marrow stromal cells on 2D nano-rod substrates, *Biomaterials*, 31(7): 1732-41 (2010).
66. Mercado A.E., Ma J., He X., Jabbari E., Release characteristics and osteogenic activity of recombinant human bone morphogenetic protein-2 grafted to novel self-assembled poly(lactide-co-glycolide fumarate) nanoparticles, *Journal of Controlled Release*, 140: 148-156 (2009).
65. Sarvestani A.S., Jabbari E., Modeling Cell Adhesion to a Substrate with Gradient in Ligand Density, *AICHE Journal*, 55(11): 2966-2972 (2009).

64. Sarvestani A.S., Jabbari E., Analysis of Cell Locomotion on Ligand Gradient Substrates, *Biotechnology & Bioengineering*, 103: 424-429 (2009).
63. Jabbari E., Targeted Delivery with Peptidomimetic Conjugated Self-Assembled Nanoparticles, *Pharmaceutical Research*, 26(3): 612-630 (2009).
62. Jabbari E., He X., Valarmathi M.T., Sarvestani A.S., Xu W., Material properties and bone marrow stromal cells response to in situ crosslinkable RGD-functionized lactide-co-glycolide scaffolds, *Journal of Biomedical Materials research Part A*, 89A(1): 124-137 (2009).
61. He X., Ma J., Jabbari E., The Effect of Grafting RGD and BMP Peptides to a Model Hydrogel Substrate on Osteogenic Differentiation of Bone Marrow Stromal Cells, *Langmuir*, 24(21): 12508-12516 (2008).
60. Mercado A.E., He X., Xu W., Jabbari E., Release characteristics of a model protein from self-assembled succinimide-terminated poly(lactide-co-glycolide ethylene oxide fumarate) nanoparticles, *Nanotechnology*, 19(32): 325609 August 13 (2008).
59. Sarvestani A.S., He X., Jabbari E., The role of filler-matrix interaction on viscoelastic response of biomimetic nanocomposite hydrogels. in special issue: Nanostructured materials for biomedical applications, *Journal of Nanomaterials*, 126803 (2008).
58. Ghatak S., Hascall V.C., Berger F.G., Pena M.M., David C., Jabbari E., He X., Dang Y., Markwald R.R., Misra S., Tissue specific shRNA delivery: A novel approach for gene therapy in cancer, *Connective Tissue Research*, 49(3): 265-269 (2008).
57. He X., Ma J., Mercado A.E., Xu W., Jabbari E., Cytotoxicity of paclitaxel in biodegradable self-assembled core-shell poly(lactide-co-glycolide ethylene oxide fumarate) nanoparticles, *Pharmaceutical Research*, 25(7): 1552-1562 (2008).
56. Sarvestani S.A., Jabbari E., Modeling kinetics of cell adhesion on substrates with ligand density gradient, *Journal of Biomechanics*, 41(4): 921-925 (2008).
55. Henderson J.A., He X., Jabbari E., Concurrent differentiation of marrow stromal cells to osteogenic and vasculogenic lineages, *Macromolecular Bioscience*, 8(6): 499-507 (2008).
54. Sarvestani A.S., Jabbari E., A model for the viscoelastic behavior of nanofilled hydrogel composites under oscillatory shear loading. *Polymer Composites*, 29: 326-336 (2008).
53. Jabbari E., He X., Synthesis and characterization of bioresorbable in situ crosslinkable ultra low molecular weight poly(lactide) macromer. *Journal of Materials Science: Materials in Medicine*, 19(1): 311-318 (2008).
52. Sarvestani A.S., He X., Jabbari E., Osteonectin-derived peptide increases the modulus of a bone-mimetic nanocomposite, *European Biophysics Journal: Biophysics Letter*, 37(2): 229-234 (2007).
51. Jabbari E., Bone regeneration on proteolytically-degradable peptide-reinforced hydrogel nanocomposite, *Chemistry Today (Chimica Oggi)*, 25(6): 32-35 (2007). INVITED ARTICLE
50. Sarvestani A.S., Xu W., He X., Jabbari E., Gelation and degradation characteristics of in-situ photo-crosslinked poly(l-lactide-co-ethylene oxide-co-fumarate) hydrogels, *Polymer*, 48: 7113-7120 (2007).
49. Jabbari E., Tavakoli J., Sarvestani A.S., Swelling characteristics of acrylic acid polyelectrolyte hydrogel in a D.C. electric field, *Smart Materials and Structures*, 16: 1614-1620 (2007).
48. Xu W., He X., Sarvestani A.S., Jabbari E., Effect of a low molecular weight crosslinkable macromer on electrospinning of poly(lactide-co-glycolide) fibers, *Journal of Biomaterials Science: Polymer Edition*, 18(11): 1369-1385 (2007).

47. Sarvestani A.S., He X., Jabbari E., Effect of composition on gelation kinetics of unfilled and nanoapatite-filled poly(lactide-ethylene oxide-fumarate) hydrogels, *Materials Letters*, 16: 5278-5281 (2007).
46. Sarvestani A.S., Jabbari E., Modeling the viscoelastic response of suspension of particles in polymer solution: the effect of polymer-particle interactions, *Macromolecular Theory & Simulations*, 16:378-385 (2007).
45. Mohammadi Y., Mirzadeh H., Moztaarzadeh F., Soleimani M., Jabbari E., Osteogenic differentiation of mesenchymal stem cells on novel three-dimensional poly(L-lactic acid)/chitosan/gelatin/ $\beta$ -tricalcium phosphate hybrid scaffolds, *Iranian Polymer Journal*, 16(1):57-69 (2007).
44. He X., Jabbari E., Material properties and cytocompatibility of injectable MMP degradable poly(lactide ethylene oxide fumarate) hydrogel as a carrier for marrow stromal cells, *Biomacromolecules*, 8:780-792 (2007).
43. Sarvestani A.S., He X., Jabbari E., The Effect of osteonectin-derived peptide on the viscoelasticity of hydrogel/apatite nanocomposite scaffolds, *Biopolymers*, 85(4):370-378 (2007).
42. Sarvestani A.S., He X., Jabbari E., Viscoelastic characterization and modeling of gelation kinetics of injectable in situ crosslinkable poly(lactide-ethylene oxide-fumarate) hydrogels, *Biomacromolecules*, 8(2):406-415 (2007).
41. Tavakoli J., Jabbari E., Khosroshahi M.E., and Boroujerdi M., Swelling characteristics of anionic acrylic acid hydrogel in an external electric field. *Iranian Polymer Journal*, 15(11): 891-900 (2006).
40. Jabbari E., He X., Synthesis of novel multi-functional matrix metalloproteinases degradable peptide crosslinkers, *Polymer Preprints*, 47(2):192-193 (2006).
39. Jabbari E., He X., Synthesis and material properties of functionalized lactide oligomers as in situ crosslinkable scaffolds for tissue regeneration, *Polymer Preprints*, 47(2):353-354 (2006).
38. Lee K.W., Wang S., Lu L., Jabbari E., Currier B.L., Yaszemski M.J., Fabrication and characterization of poly(propylene fumarate) scaffolds with controlled pore structures using 3-dimensional printing and injection molding, *Tissue Engineering*, 12(10):2801-11 (2006).
37. Mohammadi Y., Jabbari E., Monte Carlo simulation of degradation of porous poly(lactide) scaffolds: I. effect of porosity on pH, *Macromolecular Theory & Simulations*, 15:643-653 (2006).
36. Kheirandish S., Jabbari E., Effect of surface polarity on wettability and friction coefficient of silicone rubber/poly(acrylic acid) hydrogel composite, *Colloid and Polymer Science*, 284:1513-1518 (2006).
35. He X., Jabbari E., Solid-phase synthesis of reactive peptide crosslinker by selective deprotection, *Protein & Peptide Letters*, 13:715-718 (2006).
34. Sarvestani A.S., Jabbari E., Modeling and experimental investigation of rheological properties of injectable poly(lactide ethylene oxide fumarate)/hydroxyapatite nanocomposites, *Biomacromolecules*, 7:1573-1580 (2006).
33. Lu L., Zhu X., Pederson L.G., Jabbari E., Currier B.L., O'driscoll S., Yaszemski M.J., Effects of dynamic fluid pressure on chondrocytes cultured in biodegradable poly(glycolic acid) fibrous scaffolds, *Tissue Engineering*, 11:1852-1859 (2005).
32. de Ruitter G.C., Knight A.M., Moore M.J., Liang E., Gorgyi S., Lu L., Jabbari E., Wang S.F., Currier B.L., Marsh W.R., Yaszemski M.J., Spinner R.J., Windebank A.J., Biodegradable polymer scaffolds for spinal cord regeneration: I. Optimizing characteristics for biocompatibility, *Neurology*, 64(6):A357 (2005).



31. Jabbari E., Wang S., Lu L., Gruetzmacher J.A., Ameenuddin S., Hefferan T.E., Currier B.L., Windebank A.J., Yaszemski M.J., Synthesis, material properties and biocompatibility of a novel self-crosslinkable poly(caprolactone fumarate) as an injectable tissue engineering scaffold, *Biomacromolecules*, 6:2503-2511 (2005).
30. Jabbari E., Qian K.K., An Y., Poly(caprolactone)- based degradable and injectable scaffolds for bone regeneration, *MUSC Orthopedic Journal*, VIII: 47-49 (2005).
29. Jabbari E., Release characteristics of a model plasmid DNA from synthetic and biodegradable poly(ethylene glycol fumarate)/acrylamide hydrogel microspheres, *Journal of Microencapsulation*, 21(5):525-538 (2004).
28. Moore M.J., Jabbari E., Ritman E.L., Lu L., Currier B.L., Yaszemski M.J., Quantitative analysis of scaffold interconnectivity of biodegradable scaffolds with micro-computed tomography, *Journal of Biomedical Materials Research Part A*, 71A: 258-267 (2004).
27. Kempen D.H.R., Lu L., Zhu X., Kim C.W., Jabbari E., Dhert W.J.A., Currier B.L., Yaszemski M.J., Development of biodegradable poly(propylene fumarate)/ poly(lactic-co-glycolic acid) blend microspheres: II. Controlled drug release and microsphere degradation, *Journal of Biomedical Materials Research Part A*, 70A:293-302 (2004).
26. Kempen D.H.R., Lu L., Zhu X., Kim C.W., Jabbari E., Dhert W.J.A., Currier B.L., Yaszemski M.J., Development of biodegradable poly(propylene fumarate)/poly(lactic-co-glycolic acid) blend microspheres: I. Preparation and characterization, *Journal of Biomedical Materials Research Part A* 70A:283-292 (2004).
25. Temenoff J.S., Park H., Jabbari E., Sheffield T.L., LeBaron R.G., Ambrose C.G., Mikos A.G., In-vitro osteogenic differentiation of marrow stromal cells encapsulated in biodegradable hydrogels. *Journal of Biomedical Materials Research Part A*, 70A:235-244 (2004).
24. Temenoff J.S., Park H., Jabbari E., Conway D.E., Sheffield T.L., Ambrose C.G., Mikos A.G., Thermally cross-linked oligo(poly(ethylene glycol) fumarate) hydrogels support osteogenic differentiation of encapsulated marrow stromal cells in vitro, *Biomacromolecules*, 5:5-10 (2004).
23. Talac R., Friedman J.A., Moore M.J., Lu L. Jabbari E., Windebank A.J., Currier B.L., Yaszemski M.J., Animal models of spinal cord injury for evaluation of tissue engineering treatment strategies, *Biomaterials*, 25(9):1505-1510 (2004).
22. Jabbari E., Karbasi S., Swelling behavior and cell viability of dehydrothermally crosslinked poly(vinyl alcohol) hydrogel grafted with n-vinyl pyrrolidone or acrylic acid using  $\gamma$ -radiation, *Journal of Applied Polymer Science*, 91(5):2862-2868 (2004).
21. Ghafelebashi Zarand S.M., Pourmahdian S., Jabbari E., Afshar-Taromi F., Dabir B., Modeling of styrene/butadiene co-polymerization in emulsion polymerization with Monte Carlo simulation, *Chemical Engineering and Technology*, 26(9):969-974 (2003).
20. Jabbari E., Gruetzmacher J.A., Lu L., Currier B.L., Yaszemski M.J., Synthesis and characterization of nano hydroxyapatite grafted with biodegradable and crosslinkable fumaric/adipic acid macromer, *Polymer Preprints*, 44(2):184-185 (2003).
19. Jabbari E., Morphology and structure of microcapsules prepared by interfacial polycondensation of methylene bis(phenyl isocyanate) with hexamethylene diamine, *Journal of Microencapsulation*, 18(6):801-809 (2001).
18. Jabbari E., Characterization of microcapsules prepared by interfacial polycondensation of methylene bis(phenyl isocyanate) with hexamethylene diamine, *Iranian Polymer Journal*, 10(1):33-43 (2001).

17. Jabbari E., Monte Carlo simulation of tri-functional branching and tetra-functional crosslinking in emulsion polymerization of butadiene, *Polymer*, 42:4873-4884 (2001).
16. Jabbari E., Nozari S., Swelling behavior of acrylic acid hydrogels prepared by gamma radiation crosslinking of polyacrylic acid in aqueous solution, *European Polymer Journal*, 36:2685-2692 (2000).
15. Jabbari E., Khakpour M., Morphology of and release behavior from porous polyurethane microspheres, *Biomaterials*, 21:2073-2079 (2000).
14. Jabbari E., Nozari S., Synthesis of acrylic acid hydrogel by gamma irradiation crosslinking of polyacrylic acid in aqueous solution, *Iranian Polymer Journal*, 8(4):263-270 (1999).
13. Jabbari E., Peppas N.A., Measurement of adhesion and interfacial thickness of polymer-polymer interfaces with electron microscopy, *Iranian Polymer Journal*, 4(2):110-117 (1995).
12. Jabbari E., Peppas N.A., Comparison of interdiffusion at the PS/PVME and PS/PiBVE interfaces, *Polymer International*, 38:65-69 (1995).
11. Jabbari E., Peppas N.A., Matrix effects on interdiffusion at the polystyrene and poly(vinyl methyl ether) interface, *Macromolecules*, 28:6229-6237 (1995).
10. Jabbari E., Peppas N.A., Quantitative measurement of interdiffusion at polymer-polymer interfaces with TEM/EDS and EELS, *Journal of Applied Polymer Science*, 57:775-779 (1995).
9. Jabbari E., Peppas N.A., A Model for interdiffusion at interfaces of polymers with dissimilar physical properties, *Polymer*, 36(3):575-586 (1995).
8. Jabbari E., Peppas N.A., Molecular weight and polydispersity effects on interdiffusion at the interface between polystyrene and poly(vinyl methyl ether), *Journal of Materials Science*, 29:3969-3978 (1994).
7. Jabbari E., Peppas N.A., Polymer-polymer interdiffusion and adhesion, *Journal of Macromolecular Science - Reviews in Macromolecular Chemistry & Physics*, C34(2):205-241 (1994).
6. Jabbari E., Wisniewski N., Peppas N.A., Evidence of mucoadhesion by chain interpenetration at a poly(acrylic acid) / mucin interface using ATR-FTIR Spectroscopy, *Journal of Controlled Release*, 26:99-108 (1993).
5. Jabbari E., Peppas N.A., Temperature effects on interdiffusion at glassy / rubbery interfaces. *Journal of Adhesion*, 43:101-119 (1993).
4. Peppas N.A., Sahlin J.J., Jabbari E., Near-field FTIR and ATR-FTIR spectroscopies for the investigation of diffusional mechanisms, *Polymer Preprints*, 34(2):783-784 (1993).
3. Jabbari E., Peppas N.A., The use of ATR-FTIR to study interdiffusion in polystyrene and poly(vinyl methyl ether), *Macromolecules*, 26:2175-2186 (1993).
2. Jabbari E., Peppas N.A., Transport phenomena in polymers: Polymer/polymer interdiffusion, *Polymer News*, 17:43-47 (1992).
1. Jabbari E., Peppas N.A., Mapping the concentration profile at a poly(vinyl chloride) and poly(ethyl methacrylate) interface, *Polymer Bulletin*, 27:305-309 (1991).

## VII. List of refereed conference proceedings

111. P. Nejhada-Mokhtari, N. Arsalani, S. Mashkori, E. Jabbari, "Microwave-assisted Synthesis of Fluorescent Polymer Dots from Gelatin," Proceedings of the 7th International Conference on Nanostructures (ICNS7), Tehran, Iran, 2018.

110. E. Jabbari, "Developmentally Inspired Approach to Cartilage Tissue Engineering, Proceedings 11<sup>th</sup> International Conference on Medical Applications of Novel Biomaterials and Nanotechnology," *Advances in Science and Technology*, 102:31-36 (2016). DOI: 10.4028/www.scientific.net/AST.102.31
109. E. Jabbari, "Effect of Timed and Localized Release of BMP-2 and VEGF on Vascularized Osteogenesis in a 3D Co-Culture of Human Mesenchymal and Endothelial Stem Cells," *Frontiers in Bioengineering and Biotechnology*, Vol. 1, p. 623 (2016) DOI: 10.3389/FBIOE.2016.01.0087. [www.mywbc.org/lectures/view/623](http://www.mywbc.org/lectures/view/623)
108. D. Barati, S. Pajoum Shariati, S. Moeinzadeh, E. Jabbari, "Nanogels for dual delivery of bone morphogenetic proteins and vascular endothelial growth factor in bone regeneration," Vol. 21 (Suppl. 1) S-412 (2015). DOI: 10.1089/ten.tea.2015.5000.abstracts
107. L. Daneshian, E. Jabbari, "Determination of optimum matrix stiffness for maintenance of human colon cancer stem cells," Vol. 21 (Suppl. 1) S-222 (2015). DOI: 10.1089/ten.tea.2015.5000.abstracts
106. T. Karimi, D. Barati, O. Karaman, S. Moeinzadeh, E. Jabbari, "A biomimetic approach for engineering stratified organization of articular cartilage by recapitulating biochemical, biomechanical and geometrical factors involved in cartilage tissue development," Vol. 21 (Suppl. 1) S11-S12 (2015). DOI: 10.1089/ten.tea.2015.5000.abstracts
105. E. Jabbari, "Immune response and macrophage polarization on mineralized cell sheets seeded with human mesenchymal and endothelial progenitor cells," *Abstracts of the Drug Discovery and Therapy World Congress: Inflammation & Immunology Track (PO-26)*, Vol.1, P. 161 (2015).
104. E. Jabbari, "Synthesis of hydrolysable nanogels for controlled temporal delivery of vasculogenic factors in patterned cellular constructs," *Abstracts of the Drug Discovery and Therapy World Congress: Drug Metabolism Track (IL-196)*, Vol 1., P. 22 (2015).
103. D. Barati, S.R. Pajoum Shariati, S. Moeinzadeh, E. Jabbari, "Role of citric acid on apatite nucleation and osteogenic differentiation of human mesenchymal stem cells on aligned nanofibers," *Proceedings of the Society for Biomaterials*, Vol 1., p. 812 (2015).
102. E. Jabbari, "Developmentally Inspired Zone-Specific Chondrogenic Differentiation of Human Mesenchymal Stem Cells," *Proceedings of the Society for Biomaterials*, Vol 1., p. 267 (2015).
101. D. Barati, J.T. Easley, R.H. Palmer, C. Broomfield, K. McGilvray, E.J. Ehrhart, E. Jabbari, "Cortical bone mimetic matrix for regeneration of segmental bone defects," *Transactions Orthopedic Research Society*, 61:2506 (2015) (2015-A-2506-ORS).
100. T. Karimi, D. Barati, E. Jabbari, "Engineered cellular hydrogels for zonal regeneration of articular cartilage," *Proceedings of the Society for Biomaterials*, Vol. 1, P. 495 (2014).
99. E. Jabbari, S. Moeinzadeh, "Experimental and computational investigation of activity of osteogenic BMP-2 peptide in amphiphilic PEG hydrogels," *Proceedings of the Society for Biomaterials*, Vol. 1, p. 776 (2014).
98. S.K. Sarvestani, D. Barati, E. Jabbari, "Maintenance of Breast Cancer Stem cells in an Inert Matrix is Mediated by Mesenchymal Stem Cells in the Tumor Stroma," *Cancer Research Supplements*, 74 (19 Supplements) (2014) 169.
97. S. Moeinzadeh, D. Barati, O. Karaman, E. Jabbari, "Osteogenic Differentiation Of Marrow Stromal Cells In Hydrolytically Degradable PEG Based Hydrogels," *Proceedings of the XIXth International Biomedical Science and Technologies Symposium* (2013).
96. S. Moeinzadeh, E. Jabbari, "BMP2-derived peptide aggregation conjugated to amphiphilic PEG macromers in aqueous solution," *Proceeding TERMIS*, vol. 1, in press (2013).

95. S.K. Sarvestani, E. Jabbari, Inert patterned matrix for engineering cancer stem cell niche, *Proceeding TERMIS*, vol. 1, p. 234 (2013).
94. O. Karaman, S. Guven, R.M. Porter, C.H. Evans, U. Dermirci, E. Jabbari, Effect of matrix compressive modulus on zonal marker expression of stromal cells in chondrogenesis, *Proceeding TERMIS*, vol. 1, p. 162 (2013).
93. O. Karaman, E. Jabbari, Osteogenic differentiation of stromal cells in cortical-bone-mimetic microtubes, *Proceeding TERMIS*, vol. 1, p. 127 (2013).
92. S. Moeinzadeh, D. Barati, E. Jabbari, Sequential release of VEGF and BMP-2 proteins in PEG-based hydrogel micropatterns, *Proceeding TERMIS*, vol. 1, p. 101 (2013).
91. S.K. Sarvestani, X. Yang, E. Jabbari, An engineered inert matrix for in-vitro maintenance of cancer stem cells, *Proceeding Society for Biomaterials*, vol. 1, p. 653 (2013).
90. E. Jabbari, S.K. Sarvestani, "Engineered Model Matrix to Mimic Cancer Stem Cell Microenvironment: Effect of Integrin and Heparin Binding Peptides," *Cancer Research Supplements*, 73 (24 Supplement) (2013) P1-06-09.
89. X. Yang, S. Kamali, E. Jabbari, "Engineered Matrix To Study The Effect Of Microenvironment On Cancer Stem Cell Maintenance," *Cancer Research Supplements*, 73 (8 Supplement) (2013) 251.
88. O. Karaman, S. Moeinzadeh, E. Jabbari, "Glutamic Acid Grafted Nanofibers as a Biomimetic Template for Mineralization and Osteogenic Differentiation of Mesenchymal Stem Cells," *Supplements of Tissue Engineering and Regenerative Medicine Journal*, 6-S1 (2012) 200.
87. E. Jabbari, "Response Of Breast Tumor Cells To Hybrid Polymer-Peptide Self-Assembled Nanoparticles," N.A. Peppas, A.S. Hoffman, T. Kanamori and K. Tojo, editors, *Advances in Medical Engineering, Drug Delivery Systems and Therapeutic Systems*, AIChE, New York (2012, Abstract# 288288).
86. E. Jabbari, "Structure, Properties, And Stromal Cell Response Of Self-Assembled Micellar Star Poly(Ethylene Oxide-Co-Lactide) Hydrogels," N.A. Peppas, A.S. Hoffman, T. Kanamori and K. Tojo, editors, *Advances in Medical Engineering, Drug Delivery Systems and Therapeutic Systems*, AIChE, New York (2012, Abstract# 288289).
85. S. Moeinzadeh, E. Jabbari, Effect of degradable segment type and length on nanostructure formation of star polyethylene glycol macromonomers in aqueous solution, *Polym. Prepr.*, in Press (2012).
84. X. Yang, X. He, E. Jabbari, CD44 binding peptide attached to an engineered matrix prevents the formation of CSC tumorspheres, *Proc. Suppl. Am Assoc. Cancer Res.*, Abstract #492, p. 159 (2012).
83. E. Jabbari, A.E. Mercado, J. Ma, X. He, Effect of BMP-2 derived peptide grafted to nanoparticles on differentiation of stromal cells, *Mater. Res. Soc. Symp. Proc.*, in Press (2012).
82. S. Meinzadeh, E. Jabbari, Mesoscale simulation of the structure of star acrylated poly(ethylene glycol-co-lactide) hydrogels, *Mater. Res. Soc. Symp. Proc.*, in Press (2012).
81. E. Jabbari, Matrix modulus affects invasion rate of tumor cells through synthetic hydrogels, *Mater. Res. Soc. Symp. Proc.*, in Press (2012).
80. S. Moeinzadeh, D. Barati, X. He, E. Jabbari, Gelation characteristics and encapsulation of stromal cells in star acrylate-functionalized poly(ethylene glycol-co-lactide) macromonomers," *Mater. Res. Soc. Symp. Proc.*, in Press (2012).

79. A.E. Mercado, X. Yang, X. He, E. Jabbari, "Effect of BMP2 peptide grafted nanoparticles on osteogenic expression of stromal cells encapsulated in a hydrogel," *Trans. Tissue Eng. Reg. Med. Int. Soc.*, #0223 (2011).
78. S. Moeinzadeh, E. Jabbari, "Mesoscale Simulation of the Structure of Star Acrylated Poly(Ethylene Glycol-co-lactide) Hydrogels," *Mater. Res. Soc. Symp. Proc.*, in Press (2012).
77. S. Moeinzadeh, E. Jabbari, "Mesoscale Simulation of the Self-Assembly of Peptide-Conjugated Poly(L-lactide) Macromers," *Polym. Prepr.*, in Press (2011).
76. X. He, S. Moeinzadeh, E. Jabbari, "Synthesis and Characterization of Degradable and Crosslinkable Unsaturated Poly(ethylene oxide-b-lactide-co-glycolide) Macromers," *Polym. Prepr.*, in Press (2011).
75. X. He, X. Yang, E. Jabbari, "In vivo tumor toxicity of Doxorubicin encapsulated in peptide-assembled polylactide nanoparticles," *Trans. Soc. Biomater.* p. 707 (2011).
74. H. Ardalani, A.E. Mercado-Pagan, J. Ma, X. He, E. Jabbari, "Uptake and migration of tumor cells in response to hybrid polymer-peptide self-assembled nanoparticles," *Trans. Soc. Biomater.* p. 672 (2011).
73. J. Ma, X. He, E. Jabbari, "Synergistic Effect of rhBMP-2 and osteopontin Derived Peptides Grafted to a Hydrogel Substrate on Osteogenesis of Marrow Stromal Cells," *Trans. Orthop. Res. Soc.* 56:89 (2010).
72. E. Jabbari, "Bone-Mimetic Laminated Nano-Structures for Regeneration of Skeletal Tissues," 5<sup>th</sup> Forum on New Materials Part E, *Advances in Science and Technology*, P. Vincenzini, J.A. Jansen, K. Ishihara, T.J. Webster, Eds. DOI: 10.4028/www.scientific.net/AST.76.106, 106-113 (2010). *Advances in Sciences and Technology*, Vol. 76 (2010) pp. 106-113.
71. A.E. Mercado, J. Ma, E. Jabbari, "Sustained Release of rhBMP-2 Grafted to Self-Assembled Nanoparticles Enhances the Expression of Osteogenic Markers of Mesenchymal Stem Cells," *Trans. Orthop. Res. Soc.* 56:1217 (2010).
70. E. Jabbari, Role of Substrate Microstructure on Osteogenic Differentiation of Mesenchymal Stem Cells, *Trans. IEEE Med. Biol.*, 3543-3545 (2010).
69. E. Jabbari, Effect of Sustained Release of Bone Morphogenetic Protein on Osteogenic Expression of Mesenchymal Stem Cells, *Trans. IEEE Med. Biol.*, 3733-3735 (2010).
68. X. He, J. Ma, E. Jabbari, "Migration of Marrow Stromal Cells in Response to Sustained Release of Stromal-Derived Factor-1 $\alpha$  from Poly(lactide ethylene oxide fumarate) Hydrogels," *Mater. Res. Soc. Symp. Proc.* Vol. 1235, RR03-40 (2009).
67. A.E. Mercado-Pagán, E. Jabbari, "Synthesis and Characterization of Peptidomimetic Self-Assembled Biodegradable Nanoparticles," *Mater. Res. Soc. Symp. Proc.* Vol. 1238, UU05-04 (2009).
66. J. Ma, W. Xu, E. Jabbari, "Marrow Stromal Cell Response to Fiber-Reinforced Laminated Nanocomposites," *Mater. Res. Soc. Symp. Proc.* #675938 (2009).
65. A. Putnam, E. Jabbari, M.E. Byrne, "A Study of Novel Degradable Imprinted Networks," N.A. Peppas, A.S. Hoffman, T. Kanamori and K. Tojo, editors, *Advances in Medical Engineering, Drug Delivery Systems and Therapeutic Systems*, AIChE, New York (2009).
64. J. MA, W. Xu, E. Jabbari, "Fabrication and Stromal Cell Response to Laminated Fiber-Reinforced Nanocomposites," N.A. Peppas, A.S. Hoffman, T. Kanamori and K. Tojo, editors, *Advances in Medical Engineering, Drug Delivery Systems and Therapeutic Systems*, AIChE, New York (2009, Abstract ID# 170219).

63. A.E. Mercado, J. Ma, E. Jabbari, "Release Characteristics And Osteogenic Activity Of Rbmp-2 Grafted To Resorbable Nanoparticles," N.A. Peppas, A.S. Hoffman, T. Kanamori and K. Tojo, editors, *Advances in Medical Engineering, Drug Delivery Systems and Therapeutic Systems*, AIChE, New York (2009, Abstract ID# 170645).
62. X. He, J. Ma, E. Jabbari, "Synergistic Effects of RGD and BMP-2 Peptides Grafted to a Biodegradable Scaffold On Osteogenic Differentiation of Stromal Cells," N.A. Peppas, A.S. Hoffman, T. Kanamori and K. Tojo, editors, *Advances in Medical Engineering, Drug Delivery Systems and Therapeutic Systems*, AIChE, New York (2009, Abstract ID# 170626).
61. J. Wu, S. Khorasani, E. Jabbari, "Novel Star Multifunctional Polylactide-Co-Glycolides As Injectable In-Situ Crosslinkable Macromers," N.A. Peppas, A.S. Hoffman, T. Kanamori and K. Tojo, editors, *Advances in Medical Engineering, Drug Delivery Systems and Therapeutic Systems*, AIChE, New York (2009, Abstract ID# 170095).
60. A.E. Mercado, E. Jabbari, "Self-Assembled Peptide-Conjugated Polymer Nanoparticles For Tumor Targeting," N.A. Peppas, A.S. Hoffman, T. Kanamori and K. Tojo, editors, *Advances in Medical Engineering, Drug Delivery Systems and Therapeutic Systems*, AIChE, New York (2009, Abstract ID# 169822).
59. A. Mercado, E. Jabbari, Synthesis and Release Characteristics of rhBMP-2 protein grafted to Novel Self-Assembled Poly(Lactide-co-Glycolide Fumarate) Nanoparticles, *Polym. Prepr.*, #1299140 (2009).
58. X. He, J. Ma, E. Jabbari, Modulation of Osteogenic Differentiation of Stromal Cells by the BMP-2 Protein-Derived Peptide Grafted to a Hydrogel Substrate, *Polym. Prepr.*, #1298873 (2009).
57. E. Jabbari, Engineering Bone Formation with Peptidomimetic Hybrid Biomaterials, *Trans. IEEE Med. Biol.*, 1172-1175 (2009).
56. J. Ma, W. Xu, K.A. Carnevale, D.N. Rocheleau, E. Jabbari, In-vivo bone formation in RGD-conjugated crosslinked poly(lactide) scaffolds with well-defined pore geometry, *Trans. Soc. Biomaterials*, p. 667 (2009).
55. Ma, A.E. Mercado, X. He, E. Jabbari, Release characteristics and osteogenic activity of rhBMP-2 conjugated to self-assembled nanoparticles, *Trans. Soc. Biomaterials*, p. 100 (2009).
54. A.E. Mercado and E. Jabbari, Peptide-induced self-assembly of synthetic poly(lactide fumarate) macromer, *Trans. Soc. Biomaterials*, p. 118 (2009).
53. W. Xu, X. He, E. Jabbari, Synthesis of linear and star poly(lactide-co-glycolide fumarate) macromers as biodegradable crosslinkable scaffolds for tissue engineering, *Polym. Prepr. Vol. 236*, #278 (2008).
52. X. He, J. Ma, A.E. Mercado, W. Xu, E. Jabbari, Cytotoxicity of Paclitaxel in biodegradable self-assembled core-shell PLGEOF nanoparticles, *CRS Transactions*, Abstract # 622 (2008).
51. A.E. Mercado, X. He, E. Jabbari, Release characteristics of rhBMP-2 from self-assembled biodegradable PLEOF nanoparticles, *CRS Transactions*, Abstract #324 (2008).
50. J. Ma, W. Xu, X. He, A. Mercado, E. Jabbari, Morphology of rat bone marrow stromal cells on aligned electrospun biodegradable fibers. *Trans. Soc. Biomaterials*, p. 2660 (2008).
49. A.S. Sarvestani, A. Mercado, E. Jabbari, Quantification of membrane adhesion on ligand gradient substrates, *Trans. Soc. Biomaterials*, p. 2661 (2008).
48. A. Mercado, X. He, J. Ma, W. Xu, E. Jabbari, Biodegradable self-assembled nanoparticles for targeted delivery of paclitaxel to tumor cells, *Trans. Soc. Biomaterials*, p. 2662 (2008).
47. A.S. Sarvestani, E. Jabbari, Effect of ligand density gradient on the adhesion kinetics of biological membranes, *Mater. Res. Soc. Symp. Proc. Vol. 1063* (2007). DOI: <http://dx.doi.org/10.1557/PROC-1063-0001-10>

46. A.S. Sarvestani, E. Jabbari, The role of polymer-particle interactions on the viscoelastic properties of polymer nanocomposites, *Mater. Res. Soc. Symp. Proc.* Vol. 1056, HH08-29 (2007). DOI: <http://dx.doi.org/10.1557/PROC-1056-HH08-29>
45. E. Jabbari, D. Rocheleau, W. Xu, X. He, Fabrication of biomimetic scaffolds with well-defined pore geometry by fused deposition modeling, *Proceedings ASME International Conference on Manufacturing Science and Engineering*, 71-76 (2007). Paper No. MSEC2007-31011; DOI: 10.1115/MSEC2007-31011
44. M.T. Valarmathi, J.D. Potts, M.J. Yost, R.L. Goodwin, E. Jabbari, Proepicardial cells modulate the osteogenic potential of BMS cells in aligned collagen I scaffold, *Trans. Soc. Biomaterials*, p. 633 (2007).
43. M.T. Valarmathi, J.D. Potts, M.J. Yost, R.L. Goodwin, E. Jabbari, A novel three-dimensional culture system to study vasculogenesis and osteogenic differentiation of BMS cells, *Trans. Soc. Biomaterials*, p. 115 (2007).
42. E. Jabbari, W. Xu, X. He, Degradation characteristics of novel in-situ crosslinkable poly(lactide-co-glycolide-ethylene oxide-fumarate) copolymer networks, *Trans. Soc. Biomaterials*, p. 353 (2007).
41. E. Jabbari, A.S. Sarvestani, X. He, Response of marrow stromal cells to multi-functional peptide-reinforced cell-adhesive nanocomposite scaffolds, *Trans. Soc. Biomaterials*, p. 230 (2007).
40. E. Jabbari, X. He, A.S. Sarvestani, In-situ crosslinkable osteoinductive poly(lactide) scaffold for bone regeneration, *Euro. Cells Mater.* 13: S6 (2007).
39. E. Jabbari, Biomimetic hydrogel/apatite nanocomposite scaffolds for bone regeneration, *Mater. Res. Soc. Symp. Proc.* 897E: J07-03.1-03.6 (2006).
38. E. Jabbari, X. He, A.S. Sarvestani, Swelling and degradation characteristics of novel biodegradable in situ crosslinkable poly(lactide-ethylene oxide-fumarate) terpolymer networks, N.A. Peppas, A.S. Hoffman, T. Kanamori and K. Tojo, editors, *Advances in Medical Engineering, Drug Delivery Systems and Therapeutic Systems*, AIChE, New York, p. 110 (2006).
37. E. Jabbari, In situ crosslinkable bioresorbable poly(lactide fumarate) scaffolds for guided bone regeneration, *Trans. Soc. Biomaterials*, 491 (2006).
36. Hefferan TE, Jabbari E, Florschutz A, Mardones RM, Lu L, Currier BL, Yaszemski MJ. rhBMP-2 enhances bone formation in a biodegradable scaffold, *Proceedings of the American Society for Bone and Mineral Research in the Journal of Bone and Mineral Research*, 20(9):S108 (2005).
35. E. Jabbari, Synthesis and Characterization of Apatite Nanoparticles Grafted with Unsaturated Hydrophilic Macromers, in N.A. Peppas and J.Z. Hilt, eds., *Advances in Bionanotechnology*, pp. 90-91, AIChE, New York, NY (2005).
34. E. Jabbari and X. He, Aqueous based hydrogel/apatite nanocomposite scaffolds for guided bone regeneration, in N.A. Peppas and J.Z. Hilt, eds., *Advances in Bionanotechnology*, pp. 92-93, AIChE, New York, NY (2005).
33. E. Jabbari, L. Lu, J.A. Gruetzmacher, S. Ameenuddin, G.C. de Ruyter, M.J. Moore, B.L. Currier, R.J. Spinner, A.J. Windebank, M.J. Yaszemski, Material properties and biocompatibility of self-crosslinkable, poly(caprolactone fumarate) copolymer as a scaffold for guided tissue regeneration, in N.A. Peppas, K. Anseth, A.K. Dillow and C.E. Schmidt, eds., *Advances in Biomaterials, Bionanotechnology, Biomimetic Systems and Tissue Engineering*, pp. 245-247, AIChE, New York, NY (2004).
32. K.-W. Lee, E. Jabbari, L. Lu, B.L. Currier, J. Dunkers, M.Y. Chiang, J.A. Tesk, M. Cicerone, M.J. Yaszemski, Permeability of polymeric scaffolds with defined pore micro-architecture and

- interconnectivity fabricated by solid free-form fabrication, in N.A. Peppas, K. Anseth, A.K. Dillow and C.E. Schmidt, eds., *Advances in Biomaterials, Bionanotechnology, Biomimetic Systems and Tissue Engineering*, pp. 219-221, AIChE, New York, NY (2004).
31. E. Jabbari, A.V. Florschutz, L. Lu, N. Liu, L.G. Pedersen, D.H.R. Kempen, B.L. Currier, M.J. Yaszemski, PLGA Microspheres Embedded in Porous Biodegradable Scaffold as a Delivery Vehicle for Sustained Release of Recombinant Human Bone Morphogenetic Protein-2 (rhBMP-2), in N.A. Peppas, K. Anseth, A.K. Dillow and C.E. Schmidt, eds., *Advances in Biomaterials, Bionanotechnology, Biomimetic Systems and Tissue Engineering*, pp. 55-57, AIChE, New York, NY (2004).
  30. E. Jabbari, T.E. Hefferan, L. Lu, L.G. Pedersen, B.L. Currier, M.J. Yaszemski, In vitro migration and proliferation of human osteoblasts in injectable in situ crosslinkable poly(caprolactone fumarate) scaffolds, in N.A. Peppas, K. Anseth, A.K. Dillow and C.E. Schmidt, eds., *Advances in Biomaterials, Bionanotechnology, Biomimetic Systems and Tissue Engineering*, pp. 55-57, AIChE, New York, NY (2004).
  29. E. Jabbari, J.A. Gruetzmacher, L. Lu, B.L. Currier, M.J. Yaszemski, Effect of macromer grafted nano-hydroxyapatite on compressive mechanical properties of poly(propylene fumarate) scaffolds, *Trans. Soc. Biomaterials*, 986 (2004).
  28. M.J. Moore, E. Jabbari, E.L. Ritman, L. Lu, B.L. Currier, M.J. Yaszemski, Investigating scaffold interconnectivity with micro-CT and image analysis, *Trans. Soc. Biomaterials*, p. 1646 (2004).
  27. E. Jabbari, M.L. Ceridon, T.E. Hefferan, L.G. Pedersen, L. Lu, B.L. Currier, M.J. Yaszemski, Evaluation of cytocompatibility of a novel poly(caprolactone fumarate) injectable scaffold with human fetal osteoblast cells, *Trans. Soc. Biomaterials*, p. 1061 (2004).
  26. E. Jabbari, K.-W. Lee, A.C. Ellison, M.J. Moore, J.A. Tesk, M.J. Yaszemski, Fabrication of shape specific biodegradable porous polymeric scaffolds with controlled interconnectivity by solid free-form microprinting, *Trans. Soc. Biomaterials*, p. 1348 (2004).
  25. E. Jabbari, A.V. Florschutz, L.G. Petersen, N. Liu, L. Lu, B.L. Currier, M.J. Yaszemski, Release characteristics of recombinant human bone morphogenic protein-2 from PLGA microspheres embedded in a poly(propylene fumarate) porous scaffold, *Trans. Soc. Biomaterials*, p. 512 (2004).
  24. J.S. Temenoff, H. Park, E. Jabbari, T.L. Sheffield, R.G. LeBaron, C.G. Ambrose, A.G. Mikos, Swelling of fumarate based hydrogels affects osteogenic differentiation of embedded marrow stromal cells, *Trans. Soc. Biomaterials*, p. 899 (2004).
  23. E. Jabbari, J.A. Gruetzmacher, L. Lu, B.L. Currier, and M.J. Yaszemski, Development of a novel self-crosslinkable poly(caprolactone fumarate) as a biodegradable and injectable scaffold for bone tissue engineering, *Trans. IEEE Med. Biol.*, pp. 1219-1222, (2003).
  22. E. Jabbari, Encapsulation and mineralization of marrow stromal cells in synthetic biodegradable and in situ crosslinkable hydrogels, *Proceed. Int. Symp. Microencapsulation*, pp. 54-55 (2003).
  21. E. Jabbari, Encapsulation of a model double stranded plasmid dna from synthetic and biodegradable poly(ethylene glycol fumarate) hydrogel microspheres, *Proceed. Int. Symp. Microencapsulation*, pp. 56-57 (2003).
  20. Y. Mohammadi, A. Nezhad-Najaf, E. Jabbari, Hydrophobicity effects of crosslinking agent on swelling behavior of poly (acrylic acid) hydrogels in electrical fields, *ISPST Proceed.*, p. 346 (2003).
  19. S. Sharifi, Y. Mohammadi, E. Jabbari, Synthesis of poly (acrylic acid) nanoparticles as drug delivery carriers, *ISPST Proceed.*, p. 355 (2003).



18. K. Bamdad-Farrokh, T. Naeimi, Y. Mohammadi, E. Jabbari, Preparation and characterization of pH-responsive poly(methacrylic acid-g-ethylene glycol) nanogels, *ISPST Proceed.*, p. 359 (2003).
17. H.A. Argadine, E. Jabbari, R. Talac, B.L. Currier, Lichun Lu, M.J. Yaszemski, The assessment of interconnectivity of tissue engineering scaffolds using hydraulic permeability, *Trans. Soc. Biomaterials*, pp. 636-637 (2003).
16. E. Jabbari, Swelling behavior and cytotoxicity of poly(vinyl alcohol) hydrogel grafted with n-vinyl pyrrolidinone or acrylic acid, *Trans. Soc. Biomaterials*, p. 576 (2002).
15. E. Jabbari, S. Kheirandish, Increased fluid solid friction coefficient of silicone rubber poly(acrylic acid) composite due to change of polarity upon addition of hydrogel, *Proceed. Asian Symp. Biomed. Mater.*, #C6 (2001).
14. S. Karbasi, E. Jabbari, A. Alavi, Effect of grafting N-vinyl pyrrolidone or acrylic acid on cytotoxicity and water content of crosslinked poly(vinyl alcohol) as artificial cartilage, *Proceed. Asian Symp. Biomed. Mater.*, #H19 (2001).
13. S. Kheirandish, E. Jabbari, H.Mirzadeh, Variation of equilibrium water content of silicone rubber poly(acrylic acid) particulate composite with hydrogel content, *Proceed. Int'l Symp. Control. Rel. Bioact. Mater.*, #5130 (2001).
12. E. Jabbari, A. Tolu-Kouroshi, Effect of pH and extent of crosslinking on swelling pressure of anionic acrylic acid hydrogel, *Proceed. Int'l Symp. Control. Rel. Bioact. Mater.*, #5132 (2001).
11. E. Jabbari, Microstructure and release behavior of polyurea microcapsules prepared by the method of interfacial polycondensation, *Proceed. Int'l Symp. Control. Rel. Bioact. Mater.*, #616 (2001).
10. E. Jabbari, A. Arabi, Effect of mesh size of the network on mucoadhesion of polyacrylic acid hydrogel to the intestinal mucosa in simulated physiological conditions, *Proceed. Int'l Symp. Control. Rel. Bioact. Mater.*, #5131 (2001).
9. E. Jabbari, J. Tavakoli, F. Lahootifard, Release behavior of nitroglycerin from a micro-reservoir transdermal delivery device, *Proceed. Int'l Symp. Control. Rel. Bioact. Mater.*, pp. 958-959 (2000).
8. E. Jabbari, A. Jan Nesari, Encapsulation and controlled release of antifouling agent tributyl tin chloride by complex coacervation, *Proceed. Int'l Symp. Control. Rel. Bioact. Mater.*, pp. 1170-1171 (2000).
7. E. Jabbari, F. Farmanzad, H.-R. Daghyani, Finite element analysis of the effect of geometry on mechanical design of low modulus plastic orthopedic plates, *Proceed. Conf. Eur. Soc. Biomech.*, p. 374 (2000).
6. E. Jabbari, M. Khalili, Effect of strain rate on mucoadhesion of synthetic hydrogels to the surface of small intestine, *Proceed. Int'l Symp. Control. Rel. Bioact. Mater.*, pp. 313-314 (1999).
5. E. Jabbari, M. Etemadi, Effect of swelling on mucoadhesion of anionic acrylic acid hydrogel to the surface of small intestine, *Proceed. Int'l Symp. Control. Rel. Bioact. Mater.*, pp. 311-312 (1999).
4. E. Jabbari, M. Khakpour, Effect of chain extending agent on morphology of porous polyurethane microspheres, *Proceed. Int'l Symp. Control. Rel. Bioact. Mater.*, pp. 212-213 (1999).
3. E. Jabbari, Effect of mechanism of macromolecular motion on the rate of healing at the interface of dissimilar polymer bilayers, *Proceedings of International Seminar Polymer Science and Technology*, Tehran, Iran, pp. 44-50 (1997).
2. E. Jabbari, K. Arjomand-Hessabi, Monte Carlo simulation of branching in emulsion polymerization of dienes: I. Effect of initiator concentration, *Proceedings of International Seminar Polymer Science and Technology*, Tehran, Iran, pp. 123-131 (1997).

1. F. Lahootifard, E. Jabbari, Investigation of the release mechanism of nitroglycerin from a transdermal microreservoir system, *Proceedings of International Seminar Polymer Science and Technology*, Tehran, Iran, pp. 758-763 (1997).

## **PRESENTATIONS AT PROFESSIONAL MEETINGS**

### **I. Plenary Presentations**

4. Plenary Speaker, Polymers in Regenerative Engineering, Polymers 2020: New Trends in Polymer Science: Health of the Planet, Health of the People, Turin, Italy, June 3, 2020.
3. Plenary Speaker, Bionanotechnology, Mid-Atlantic Micro/Nano Alliance Summer 2018 Symposium – Collaborative Research Connections and Successes, National Academy of Sciences, Washington DC, June 1, 2018 (2:30 – 3:15 PM).
2. Honorary Guest Speaker for the Opening Ceremony, Nanomaterials in Regenerative Medicine and Cancer Therapy, 11<sup>th</sup> World Drug Delivery Summit: Frontiers Innovations in Drug Delivery Technology, Radisson North Baltimore, Baltimore, MD, USA, October 16, 2017. (11:00 – 11:30 AM).
1. Plenary Speaker, “3D Multi-Cellular Co-Culture Models for Tissue Engineering and Cancer Therapy”, 20<sup>th</sup> BIYOMUT Congress, Euphoria Aegean Resort & Spa Hotel, Seferihisar, Izmir, Turkey, November 3, 2016 (1:30 PM).

### **I. Keynote Presentations**

11. Keynote Speaker, Nanomaterials for Targeting Stem Cells, 2<sup>nd</sup> Edition of World Nanotechnology Conference, Crown Plaza Hotel, Baltimore, MD, USA, April 27, 2020 (9:30 AM).
10. Distinguished Invited Speaker, Nanomaterials in Regenerative Medicine and Cancer Therapy,” 8<sup>th</sup> International Conference on Nanostructures (ICNS8 2020), Sharif University of Technology, Tehran, Iran, April 20, 2020 (9:00 AM).
9. Keynote Speaker, Nanomaterials for targeting drugs to cancer stem cells,” 3<sup>rd</sup> Global Conference on Pharmaceutics and Drug Delivery Systems (PDDS 2019), Paris, France, June 24, 2019 (9:30 – 10:00 AM).
8. Keynote Speaker, Drug Screening and Targeting Against the Stem Subpopulation of Cancer Cells,” 2<sup>nd</sup> Global Conference on Pharmaceutics and Drug Delivery Systems, Rome, Italy, June 04, 2018 (9:00 – 10:00 AM).
7. Keynote Speaker, “3D micro-patterned co-culture of mesenchymal and endothelial stem cells for concurrent induction of vasculogenesis and osteogenesis” 10<sup>th</sup> World Congress and Expo on Cell & Stem Cell Research, JFK Airport Hilton, New York, NY, USA, March 19, 2018 (9:00 – 10:00 AM).
6. Keynote Speaker, Nanomaterials in Regenerative Medicine and Cancer Therapy, Nanomedicine in Cancer Therapy Track, Global Meet on Nanomedicine & Toxicology, New Orleans, USA, November 6, 2017 (2:00 – 2:45 PM).
5. Theme Keynote Speaker, “NanoBioTechnology Commercialization,” 39<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE EMBC), Jeju, Korea, Saturday, July 15, 2017 (13:20 PM – 14:10 PM).
4. Keynote Speaker, “Engineered Spatiotemporal Delivery of Morphogens for Skeletal Regeneration,” 2017 Global Conference on Pharmaceutics and Drug Delivery Systems, Valencia, Spain, Thursday, June 29, 2017 (9 AM).
3. Keynote Speaker, “Role of Macrophages in Nanoparticle-Mediated Drug Targeting to Cancer Stem Cells,” Session: Cancer Treatment with Nanoparticles, 2<sup>nd</sup> Annual Nano-Delivery: Nucleic Acids, Cancer Immunotherapy and Beyond, World Preclinical Congress, The Westin Copley Place, Boston, MA, Friday, June 16, 2017 (8:40 AM – 9:10 AM).

2. Keynote Speaker, "Enhancing Product Lifecycle via Targeted & Localized Nanoparticles for Modified Release Products," 3<sup>rd</sup> Annual Controlled and Modified Drug Release & 2<sup>nd</sup> Drug Delivery Strategy Conferences, Warwick Hotel, Philadelphia, PA, 9:45 – 10:30 AM, Tuesday, August 30, 2016, 9:00 – 9:45 AM.
1. Keynote Speaker, "Engineered Enrichment System for Cancer Stem Cells," 3<sup>rd</sup> 3D Models & Drug Screening Conference," Maritim Hotel Berlin, Berlin, Germany, 8:00 – 8:50 AM, May 11, 2016.

## II. Invited presentations

98. "Drug Delivery to Stem Cells in Regenerative Medicine," 5<sup>th</sup> Edition of Global conference on Pharmaceutics and Drug Delivery Systems (PDDS 2021), Rome, Italy, June 15 (10 AM).
97. "Nanomaterials for Morphogen Delivery in Skeletal Tissue Engineering" in Session FP-2: Tissue engineering and regenerative medicine, 13<sup>th</sup> International Conference on Medical Applications of Advanced Biomaterials and Nano-biotechnology, 9<sup>th</sup> Forum on New Materials, CIMTEC 2021, Montecatini Terme, Italy, Monday June 22, 2022, 15:00-15:30 PM (FP-2: IL-01).
96. "Nanomaterials in Medicine and Pharmacy", U Ghom, Iran, February 14, 2021 (VIRTUAL).
95. "Nanomaterials in Tissue Engineering and Cancer Therapy", International Conference on Recent Advances in Biotechnology, Biomolecules and Pharmacy (RABBP-2020) - 17 December 2020 (9 AM, VIRTUAL).
94. "Enhancing Small Molecule Oral Bioavailability Via Amorphous Nanoparticle Engineering", Global Drug Bioavailability Enhancement Summit, Thursday, December 10, 10:30 – 11:00 AM, 2020 (VIRTUAL).
93. "Tissue Engineering", Biomedical Engineering Society Undergraduate Society, Professional Lecture Series, University of Maryland, November 18, 2020, 6:00 PM (VIRTUAL).
92. "Plasmin Activated Release of Morphogenetic Proteins as a Sensor for Regeneration of Osseous Tissues," ICSS 2020 International Conference on Smart Sensors, 25<sup>th</sup> Symposium of Association of Chemical Sensors in Taiwan, 23<sup>rd</sup> Nano Engineering and Microsystem Technology Conference, National Sun Yat-sen University, Kaohsiung, Taiwan, October 19, 2020 (11 AM, VIRTUAL).
91. "Novel Bone Morphogenetic Protein Delivery Systems for Skeletal Tissue Regeneration," 16<sup>th</sup> Virtual Royan International Congress on Stem Cell Biology and Technology, Royan Institute for Stem Cell Biology and Technology, September 5, 2020 (2 PM, VIRTUAL).
90. "Advanced Delivery Systems for Morphogenetic Proteins and Peptides for Bone Tissue Regeneration" Digital Formulation & Drug Delivery Congress, Oxfröd Global Congress, August 27, 2020 (10 AM).
89. "Multicellular Scaffolds for Skeletal Tissue Engineering," Department of Biotechnology, K&L University, Vaddeswaram, Andhra Pradesh 522502, India, Friday, August 14, 2020, 7:00 PM (India Time) VIRTUAL.
88. "Nanomaterials for Drug Delivery in Cancer Therapy and Regenerative Medicine", 3<sup>rd</sup> Annual Formulation & Drug Delivery USA Congress, STREAM 3.2: NANO & RNA FORMULATION & DELIVERY, Formulation and Delivery Series US, San Diego, CA, USA, March 18, 2020 (16:00 – 6:30 PM, VIRTUAL).
87. "Hydrogels for Morphogen and Cell Delivery in Tissue Engineering, In honor of Dr. Nicholas A. Peppas Selection for the 2019 Sigma Xi Monie A. Ferst Award, Georgia Tech, Atlanta, GA, USA, Friday, November 8, 2019.

86. "Nanomaterials for Morphogen Delivery in Skeletal Tissue Regeneration," School of Chemical, Biological and Materials Engineering, Room A235, Norman OK, USA, Tuesday October 22, 2019 (3:00 – 4:00 PM).
85. "Nanomaterials in Skeletal Tissue Engineering and Cancer Therapy," Department of Chemical and Biological Engineering, University of Alabama, Lloyd Hall 133, Tuscaloosa, AL, USA, Thursday, September 12, 2019 (11:00 AM – 12:00 PM).
84. "Using 3D Tumor Models to Investigate the Role of Immune Cells on the CSC Niche," 7<sup>th</sup> Annual PREDiCT Tumor Models, The Revere Boston Common, Boston, MA, USA, July 18, 2019 (11:55 AM – 12:15 PM).
83. "Nanomaterials for Drug Delivery in Cancer Therapy and Regenerative Medicine," 2<sup>nd</sup> Annual Formulation & Drug Delivery Congress, Hilton San Diego Mission Valley, San Diego, CA, USA, March 18, 2019, 18:50 – 19:20 PM (Formulation & Delivery for Nanomedicine, Conf. Rm 1).
82. "Tissue Models for Bone and Cartilage Regeneration," Global Academic and Business Forum on Tissue Engineering and Regenerative Medicine (TERM-2018), Double Tree by Hilton Baltimore - BWI Airport, Linthicum Heights, MD, USA, October 29, 2018 (10:35 – 10:55 AM).
81. Zonal regeneration of articular cartilage, "Invited Session: Biologically Inspired Regenerative Systems (r5h4u), 40<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Honolulu Convention Center, Honolulu, HI, July 19, 2018, Room 323B, (10:45 – 11:00 AM, Paper ThBT16.4).
81. "NanoBioTechnology Commercialization," Session: Developing Open Standards Facilitates Technology Commercialization (Special Session WeAT21), 40<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Honolulu Convention Center, Honolulu, HI, July 18, 2018, Room 304Ab (8:40 – 9:00 AM).
80. "Novel Bioinspired Materials for Tissue Manufacturing," Advanced Regenerative Manufacturing Institute / BioFabUSA Spring Summit, Technology Center Auditorium, Manchester, NH, Thursday June 7, 2018 (2:40 – 3:00 PM).
79. "Photocrosslinkable Keratin Hydrogels for Cell Encapsulation," Session FP-1: Advances in biomaterials, FP – 12<sup>th</sup> International Conference on Medical Applications of Advanced Materials, 8<sup>th</sup> Forum on New Material, CIMTEC 2018, Perugia, Italy, June 10-14, 2018, 10:00 – 10:30 AM.
78. "Three-dimensional cell culture in micro-patterned hydrogels," Three-dimensional cell culture: Innovations in tissue scaffolds and biomimetic systems, EuroSciCon Workshop Series, Online, February 7, 2018 (10:30 – 11:00 AM).
77. "Protein Delivery and Drug Screening Measurement Systems for Regenerative Medicine and Cancer Therapy," National Institute of Standards and Technology, Gaithersburg, MD, USA, January 18, 2018 (9:00 – 10:00 AM).
76. "Stem Cell Therapy for Pain Management," Akhtar Hospital, Tehran, Iran, Sunday, December 31, 2017 (8:30 AM – 9:30 AM).
75. "Alternative Biomaterials for Targeted Drug Delivery," Department of Chemical Engineering, Ghom University, Engineering Conference Room, Ghom, Iran, Tuesday, December 25, 2017 (9:30 AM – 10:30 AM).
74. "Micro-/Nano-Engineering for Skeletal Tissue Regeneration and Cancer Therapy," Semnan University of Medical Sciences, Semnan, Iran, Monday, December 24, 2017 (10:30 AM – 11:30 AM).

73. "Tissue Models for Drug Screening Against Cancer Stem Cells," 3<sup>rd</sup> International Conference on Clinical Sciences and Drug Discovery, Sheraton Reston, Washington DC, USA, Friday November 10, 2017 (10:00 AM – 10:20 AM).
72. "Spheroid Cell Culture" in New Dimensions in 3-D Assays, The Scientist Webinar Series, October 17, 2017 (2:00 – 4:00 PM).
71. "Scaffolds with Growth Factors for Bone Regeneration, Bone Seminar Workshop, Center for Devices and Radiological Health (CDRH) Office of Device Evaluation (ODE), U.S. Food and Drug Administration, Silver Spring, Maryland, September 29, 2017 (10:00 – 11:00 AM).
70. "Exploring Innovative Collaboration Models to Accelerate Next Generation Product Development," Panel Discussion, 4<sup>th</sup> Annual Controlled and Modified Drug Release, 3<sup>rd</sup> Drug Delivery Strategy, and 2<sup>nd</sup> Peptide Drug Design & Delivery Summits, Sonesta Hotel, Rittenhouse Square, Philadelphia, PA, Wednesday, September 6, 2017 (11:45 AM – 12:30 PM).
69. "Breakthrough Innovations in the Next Generation of Controlled Delivery Systems," Next Generation Delivery Opportunities track, 4<sup>th</sup> Annual Controlled and Modified Drug Release, 3<sup>rd</sup> Drug Delivery Strategy, and 2<sup>nd</sup> Peptide Drug Design & Delivery Summits, Sonesta Hotel, Rittenhouse Square, Philadelphia, PA, Wednesday, September 6, 2017 (1:30 PM – 2:00 PM).
68. "A 3D Cancer Stem Cell Tissue Model for Drug Screening," 3D Tissue Models, Boston, MA, Monday August 28, 2017 (11:15 AM – 12:00 PM).
67. "Micro- and Nanotechnologies for Skeletal Tissue Regeneration," 5<sup>th</sup> Annual Workshop on Micro- and Nanotechnologies in Medicine, Nanotechnology and Tissue Engineering Session, Biomaterials Innovation Research Center, 65 Landsdowne, Brigham and Women's Hospital, Friday July 21, 2017, 4:30 – 5:15 PM.
66. "Three-Dimensional Cell Culture in Micropatterned Hydrogels," in Innovations in Tissue Scaffolds and Biomimetic Systems," EuroSciCon Virtual Online Event, February 7, 2017 (11:00 – 11:30 AM).
65. "Examining Nanoparticles as Drug Delivery Systems," 2<sup>nd</sup> Global Drug Bioavailability Enhancement Summit, Innovative Approaches for Maximizing Bioavailability, Accelerating Product Time-to-Market and Lifecycle Management for Small and Large Molecule Drugs, Westin New York at Times, Square, New York, NY, USA, Tuesday, January 25, 2017, 3:50 – 4:30 PM (Pearl Room).
64. "Regulatory Challenges in Commercialization of Novel Biologics for Tissue Regeneration," Bench to Market: Standards and Regulatory Considerations at the Healthcare Innovations on Point of Care Technologies Conference (NIH-IEEE HI-POCT'16), CasaMagna Marriott Resort, Cancun, Mexico, Thursday, 10<sup>th</sup> November 2016, 11:00 AM – 12:00 PM (Maya IV-V room).
63. "Biofunctional Nanomaterials in Regeneration of Skeletal Tissues," The Southeastern Regional Meeting of the American Chemical Society, Columbia, SC, October 23-27, 2016.
62. "Developmentally Inspired Approach to Tissue Regeneration of Articular Cartilage," Drug Metabolism Track, Global Biotechnology Congress and Drug Discovery & Therapy World Congress 2016, John B. Hynes Veterans Memorial Convention Center, Boston, MA, Wednesday, August 24, 2016, 4:25 – 4:35 PM (Lecture Hall 201, Level 2).
61. "Localized and Timed Delivery of Multiple Morphogens Couples Vascularization and Osteogenesis in Skeletal Tissue Regeneration," Drug Metabolism Track, Global Biotechnology Congress and Drug Discovery & Therapy World Congress 2016, John B. Hynes Veterans Memorial Convention Center, Boston, MA, Tuesday, August 23, 2016, 3:55 – 4:25 PM (Lecture Hall 201, Level 2).

60. "Role of Macrophages in Nanoparticle-Mediated Drug Targeting to Cancer Stem Cells," Track A: Preclinical Models Targeting the Tumor Microenvironment for Enhanced Predictability, 4<sup>th</sup> Annual Tumor Models, , Boston, MA, Wednesday, July 20, 2016, 15:00 – 15:30 PM.
59. "Engineered in vitro Culture System for Cancer Stem Cell Drug Screening," 5<sup>th</sup> Annual Murine Models, Cell Lines, Organoids, Gene Editing in Oncology and Immune-Oncology: Part 1: Preclinical Models in Oncology, Westin Boston Waterfront Hotel, Boston, MA, Thursday, June 16, 2016, 11:30 AM – 12 PM.
58. "Developmentally Inspired Approach to Cartilage Tissue Engineering," in Session Q-2- Multifunctional materials in tissue engineering and regenerative medicine, 11<sup>th</sup> International Conference on "Medical Applications of Novel Biomaterials and Nanotechnology" in 7<sup>th</sup> – Structure, CIMTEC 2016, Perugia, Italy, June 7, 2016, 10:00 – 10:30 AM.
57. "3D Gel Culture System for Enrichment of the Stem Cell Sub-population of Cancer Cells," Massachusetts Technology Transfer Center (MTTC), Boston, MA, Thursday December 10, 2015 (7<sup>th</sup> Floor, 28 State Street, 8 – 10 AM).
56. "3D Gel Culture System for Enrichment of the Stem Cell Sub-population of Cancer Cells," Strategic Alliances: Novartis Institutes for BioMedical Research, Cambridge, MA, Tuesday December 8, 2015 (3-4 PM).
55. "CORTIAMIC Technology," Defense Innovation Technology Acceleration Challenges, JW Marriott, Austin, TX, Wednesday December 2, 2015 (Griffin Hall, Showcase 2817).
54. "Engineered Culture Systems for Cancer Stem Cells," in Cancer-On-A-Chip: Engineering 3D Models of Tumor, in Complex Cellular Models Predictive of Human Response to Improve early Decision Making, 3<sup>rd</sup> Annual Screening and Functional Analysis of 3D Models Congress, Renaissance Waterfront Hotel, Boston, MA, Wednesday, November 11, 2015 (2:20 – 2:45 PM).
53. "Engineered Microenvironments for Bone and Cartilage Regeneration", School of Biological and Health Systems Engineering, Arizona State University, Tempe, AZ, Friday, September 18, 2015 (3:00 – 4:00 PM).
52. "Bionanotechnology in Engineering and Medicine," TC Symposium on Frontiers of Biomedical Engineering, 37<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society, MiCo – Milano Conference Center, Milan, Italy, Thursday August 27, 2015 (5 – 5:30 PM, room White 1).
51. "Nano-/Micro- Engineering in Cartilage Regeneration," 3<sup>rd</sup> Annual Workshop on Micro- and Nanotechnologies in Medicine, Tissue Engineering Session II, Biomaterials Innovation Research Center, 65 Landsdowne, Brigham and Women's Hospital, Friday July 31 , 2015, 4:30 – 5:15 PM.
50. "Synthesis of Hydrolysable Nanogels for Controlled Temporal Delivery of Vasculogenic Factors in Patterned Cellular Constructs," Drug Metabolism Track, Drug Discovery & Therapy World Congress 2015 and Global Biotechnology Congress 2015, John B. Hynes Veterans Memorial Convention Center, Boston, MA, Thursday, July 23, 2015, 4:00 – 4:30 PM (Lecture Hall 203, Level 2, chaired by: M. Linder and W.A. Zagahary).
49. "Drug Screening with a Model 3D Breast Cancer Stem Cell Culture System," Tumor Models Symposium, LeMeridien, Cambridge-MIT, Cambridge, MA, Wednesday, July 22, 2015, 3:40 PM – 4:10 PM.
48. "NSF-NCI Workshop on Integrative Additive Biomanufacturing and Tumor Engineering Workshop," Building 35A, Porter Neuroscience Research Center, NIH Campus, Bethesda, MD, April 1-2, 2015 (Invited but due to a time-conflict did not participate).

47. "Engineering Cancer Stem Cell Microenvironment," Department of Biomedical Engineering, Tuft University, Boston, MA, Tuesday October 14, 2014, 10:00 – 11:00 AM.
46. "Multiscale approach to skeletal tissue regeneration," 2<sup>nd</sup> Annual Workshop For Micro- And Nanotechnologies for Medicine: Emerging Frontiers And Applications, 65 Landsdowne, Department of Medicine, Brigham and Women's Hospital, Thursday, July 31, 2014, 11:00 AM – 12:00 PM.
45. "Role of Tissue Stiffness on the Maintenance of Breast Cancer Stem Cells," Invited Session Biomechanics I, 7<sup>th</sup> World Congress of Biomechanics, John B. Hynes Memorial Convention Center, Boston, MA, Tuesday, July 8, 2014, 11:00 AM - 12:30 PM (Abstract No 14-IS-1032-WCB).
44. "Cortical-bone-mimetic hierarchical composites," in Session FO-7 - Progress in Implant Prostheses, 10<sup>th</sup> International Conference on "Medical Applications of Novel Biomaterials and Nano-biotechnology" in 6<sup>th</sup> Forum on New Materials, CIMTEC 2014, Montecatini Terme, Italy, June 18, 2014, 17:20 PM – 17:50 PM (Presentation No IL02, Sirio Room, Palazzo Dei Congressi).
43. "Bioinspired approach to skeletal regeneration," Chemical, Biochemical, and Biotechnology Systems, National Science Foundation, Arlington, VA, Monday, June 9, 2014, 10:00 AM – 11:00 AM.
42. "Micro and nanotechnologies in engineering the cancer stem cell niche" NSF funded workshop on BioMEMS and Tissue Engineering, Department of Medicine, Brigham and Women's Hospital, Friday, August 2, 2013, 10:45 AM – 12:00 PM.
41. "Engineered Matrix, Microenvironment and Cancer Stem Cell Maintenance," Wyss Institute for Biologically Inspired Engineering, Harvard University, Boston, MA, Wednesday, July 17, 2013, 4:00 – 5:00 PM (Room 521).
40. "Engineered Matrix to Study Cancer Stem Cell Microenvironment," Department of Biomedical Technologies, Graduate School of Natural and Applied Sciences, Ege University, Izmir, Turkey, Friday June 21, 2013, 9:00 – 10:00 AM.
39. "Bioinspired Design of Materials for Bone Tissue Regeneration," Department of Chemical and Petroleum Engineering, University of Kansas, Lawrence, Kansas, Thursday, May 16, 2013, 9:00 – 10:00 AM, 2112 Learned Hall.
38. "Synergistic effect of osteopontin and BMP-2 derived peptides grafted to a hydrogel on osteogenic and vasculogenic differentiation of stromal cells," Biomaterial-Cell Interactions Minisymposium, Theme 7: Cellular and Tissue Engineering and Biomaterials, Annual International Conference of IEEE Engineering in Medicine and Biology Society (EMBC'12), San Diego, CA, Friday, August 31, 2012, 13:45-14:00 PM (paper# FrC18.2, Aqua 309).
37. "Engineered matrix to study the effect of microenvironment on maintenance of cancer stem cells and drug response," Northeastern University, Boston, MA, January 11, 2103 (11:45 AM to 1:15 PM).
36. "Adult mesenchymal stem cells in bone regeneration," The Third Royan International Summer School, Royan Stem Cell Institute, Tehran, July 18, 2012.
35. "Biomimetic approaches to engineering skeletal tissues," Department of Chemical Engineering, Sharif University of Technology, Tehran, July 15, 2012.
34. "In-situ crosslinkable osteoinductive poly(lactide) scaffold for bone regeneration," Berton Rahn Award Presentation, AO Foundation Board of Trustees Meeting, Congress Center, Davos, Switzerland, June 30, 2012.
33. "Biomimetic Approaches to Rational Design of Materials for Skeletal Tissues," Department of Chemical, Biological, and Pharmaceutical Engineering," New Jersey Institute of Technology, Newark, NJ, April 10, 2012 (1:00 – 2:00 PM).

32. "Nanoparticles for Protein Delivery: Improving Efficacy, Reducing Protein Diffusion, and reducing tissue overgrowth," Track 3: Nanomedicine, International Conference and Exhibition on Nanotechnology & Nanomedicine, Omaha, NE, March 12, 2012 (Marriott, Salon DE, 17:25 PM to 17:45 PM).
31. "Biomimetic Approaches to Engineering Skeletal Tissues," Department of Biomedical Engineering, The Case Western Reserve University, Cleveland, OH, March 6, 2012 (10:00 AM to 11:00 AM).
30. "Biomimetic Engineered Materials for Growth Factor Delivery and Tissue Regeneration," Department of Chemical Engineering, University of Illinois Chicago, Chicago, IL, September 29, 2011 (11:00 AM-12:00 PM).
29. "Ligand-Conjugated Self-Assembled Nanoparticles for Targeting Tumor Stem Cells," in Session J-5 - Targeted Delivery and Release Systems of Symposium J - Biomedical Applications of Smart Technologies, International Conferences Materials and Technologies, Montecatini, Italy, June 10-14 , 2012.
28. "Engineered Materials for Tissue Engineering and Growth Factor Delivery," Department of Bioengineering, The Pennsylvania State University, State College, PA, May 5, 2011 (12:45-13:15 PM).
27. "Biomimetic Engineered Constructs for Bone Regeneration," "Medical Education and Research Center, School of Medicine, Temple University, Philadelphia, PA, April 29, 2011 (12:00-13:00 PM).
26. "Biomimetic Engineered Constructs for Bone Regeneration," Department of Bioengineering, College of Engineering, Temple University, Philadelphia, PA, April 28, 2011 (12:30-13:30 PM).
25. "Macro, Micro and Nano Mechanics of Polymer Composite Systems," Multiphase Polymer and Polymer Composites: From Nanoscale to Macro Composites, Paris-Est University, Paris, France, June 7, 2011.
24. "Effect of 3D Microstructure on Osteogenic Expression of Mesenchymal Stem Cells," Controlling Microenvironment and Cell Fate session, Tissue Engineering and Regenerative Medicine International Society Conference, Orlando, FL, December 6, 2010 (11:15 – 11:30 AM, Walt Disney Hilton).
23. "Role of Substrate Microstructure on Osteogenic Differentiation of Mesenchymal Stem Cells," Tissue Mechanics Track, Annual International Conference of IEEE Engineering in Medicine and Biology Society (EMBC'10), Buenos Aires, Argentina, September 2, 2010, 6:00-6:15 PM (paper# ThE13.3).
22. "Effect of Sustained Release of Bone Morphogenetic Protein on Osteogenic Expression of Mesenchymal Stem Cells," Biomimetic materials, implantable biosensor and local drug delivery systems Track, Annual International Conference of IEEE Engineering in Medicine and Biology Society (EMBC'10), Buenos Aires, Argentina, September 3, 2010, 9:45-10:00 AM (paper# FrA09.2).
21. "Bone-Mimetic Laminated Nano-Structures for Regeneration of Skeletal Tissues," International Conference on Modern Materials and Technologies, 5th Forum on New Materials, 9th International Conference on Medical Applications of Novel Biomaterials and Nano-Biotechnology, Regenerative Medicine and Tissue Engineering session, Montecatini, Italy, June 17, 2010 (FL-4:IL11, paper# 11).
20. "Engineering Bone Formation with Peptidomimetic Hybrid Biomaterials," Biomaterial-Cell Interactions Session, Cellular & Tissue Engineering, & Biomaterials Track, Annual International Conference of IEEE Engineering in Medicine and Biology Society (EMBC'09), Minneapolis, MN, Thursday, September 3, 2009, 2:15 – 2:30 PM (paper# ThCT12.4).
19. "Bio-Inspired Materials for Bone Tissue Engineering", Department of Chemical and Biological Engineering, University of Alabama, Tuscaloosa, AL, Thursday, October 16, 2008 (11:00 AM – 12:00 PM).



18. "Bio-Inspired Materials: Peptide-Reinforced Nanocomposites and Self-Assembled Nanoparticles," Department of Chemical Engineering and Materials Science, University of California Irvine, Irvine, CA, Tuesday, April 22, 2008 (11:00 – 11:45 AM).
17. "Biomimetic Nanomaterials for Tissue Engineering and Tumor Delivery", Iran's First International Conference on Biomaterials," Biomaterials Research Center, University of Tehran, Tehran, Iran, Monday, November 12, 2007 (11:30-12:00 AM).
16. "In-Situ Crosslinkable Osteoinductive Poly(lactide) Scaffold for Bone", AO Symposium: "Biomaterials, Cell-, Tissue and Gene based Therapies: From Basic Research to Clinical Applications," University Hospital Lausanne, Lausanne, Switzerland, October 20, 2006 (9:25 AM).
15. "Bioinspired Nano-Composite Materials as Scaffolds for Bone Tissue Regeneration," Department of Chemical & Biomolecular Engineering, Georgia Tech, Atlanta, GA, September 20, 2006.
14. "Synthesis, Processing, and Applications of Biomimetic Nanocomposites in Tissue Engineering," Nanotechnology Seminar Series, Accelrys Corp., San Diego, CA, August 15, 2006.
13. "Biomimetic Osteoinductive In situ Crosslinkable Poly(lactide) for Bone Regeneration," 1<sup>st</sup> Marie Curie Cutting Edge InVENTS Conference on New Developments on Polymers for Tissue Engineering, Replacement, and Regeneration, Funchal, Madeira, Portugal, June 3, 2006 (4:00 PM).
12. "Bioresorbable Cell Responsive Materials for Tissue Regeneration," Department of Cell Biology and Anatomy, Medical University of South Carolina, Charleston, SC, February 22, 2006.
11. "Bone Regeneration in a Load-Bearing Defect with PLAF Scaffold," Calvert Research Institute, Cary, NC, December 14, 2005.
10. "Soft Tissue Biomaterials in Orthopaedics," Department of Orthopaedic Surgery, School of Medicine, University of South Carolina, Columbia, SC, April 26, 2005.
9. "Biomaterials for Musculoskeletal Tissue Engineering," Department of Orthopaedic Research, Medical University of South Carolina, Charleston, SC, October 1, 2004.
8. "Injectable Biomimetic Scaffolds for Regeneration of Skeletal Tissues," School of Chemical Engineering and Materials Science, University of Oklahoma, Norman, OK, August 27, 2004.
7. "Injectable Biomimetic Composites for Regeneration of Skeletal Tissues," Department of Biomedical Engineering, School of Medicine, Mayo Clinic, Rochester, MN, May 28, 2004.
6. "Injectable and Biomimetic Polymers as Scaffolds for Regeneration of Skeletal Tissues," Department of Chemical and Biomedical Engineering, Cleveland State University, Cleveland, OH, April 8, 2004.
5. "Injectable and Biomimetic Polymers as Scaffolds for Regeneration of Skeletal Tissues," Department of Chemical and Petroleum Engineering, University of Kansas, Lawrence, KS, March 18, 2004.
4. "Injectable and Biomimetic Polymers as Scaffolds for Regeneration of Skeletal Tissues," Department of Chemical Engineering, Auburn University, Auburn, AL, February 20, 2004.
3. "Injectable and Degradable Composite Biomaterials for Regeneration of Skeletal Tissues," Department of Chemical Engineering, University of South Carolina, Columbia, SC, January 15, 2004.
2. "Development of a Novel Degradable, Injectable, and Self-Crosslinkable Composite Biomaterial for Orthopedic Applications," National Science Foundation Sponsored Materials Chemistry Workshop, Tempe, Arizona, October 2003.
1. "Injectable Biomimetic Composites for Regeneration of Skeletal Tissues," Biomedical Engineering Seminar Series, Mayo Clinic, Rochester, Minnesota, May 28, 2004.

**III. Research presentations**

207. "Synthesis and Characterization of Photo-cross linkable Sericin Hydrogels for Stem Cell Encapsulation," Biomedical Engineering Society 2019 Annual Meeting, Philadelphia, PA, October 16-19, 2019 (Submission ID# 2086).
206. "Determining -OH Functional Group Effect on Quantum Dot Fluorescence," Discovery Day, Columbia Metropolitan Convention Center, University of South Carolina, Columbia, SC, April 20, 2017 (1:00 – 2:30 PM, Poster).
205. "Effect of Matrix Source and Cell Density on Engineering the Superficial Zone of Articular Cartilage," Tissue Engineering and Regenerative Medicine Annual Conference and Exhibition, Westin, Charlotte, NC, December 3-6, 2017 (Poster).
204. "Osteogenic Differentiation of Mesenchymal Stem Cells Encapsulated in Feather Keratin Hydrogel," Tissue Engineering and Regenerative Medicine Annual Conference and Exhibition, Westin, Charlotte, NC, December 3-6, 2017 (Poster).
203. "Synchronized Vascularization and Osteogenesis using Enzymatically Responsive Nanoparticles," Tissue Engineering and Regenerative Medicine Annual Conference and Exhibition, Westin, Charlotte, NC, December 3-6, 2017 (Poster).
202. "Macrophage Polarization on Cell Sheets Seeded with Devitalized Mesenchymal and Endothelial Progenitor Cells," 39<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Conference, International Conference Center, Jeju Island, Korea, Saturday July 15, 2017, 8:30 – 8:45 AM (Cho Room).
201. "Nanobiotechnology Commercialization," 39<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Conference, International Conference Center, Jeju Island, Korea, Saturday July 15, 2017, 13:20 – 14:10 PM (Zworykin Room, Paper SaAT6.3).
200. "Mesenchymal Stem Cells Mediate Maintenance of Breast Cancer Stem cells in 3D Culture," 4<sup>th</sup> Annual Tumor Models, The Colonnade Hotel, Boston, MA, July 20, 2016 (Poster).
199. "Effect of Timed and Localized Release of BMP-2 and VEGF on Vascularized Osteogenesis in a 3D Co-Culture of Human Mesenchymal and Endothelial Stem Cells," Biomaterials for pluripotent stem cell culture and differentiation Session, New Frontiers Symposium, 10<sup>th</sup> World Biomaterials Conference, Montreal, Quebec, Canada, Thursday, May 19, 2016, 14:00 – 15:00 PM (Palais des Congres de Montreal, Rm 518).
198. "Nanogel Formation By Self-Assembly of Polyethylene Glycol Macromers Sequentially Chain-Extended with Short Lactide and Glycolide Segments," Self-Assembled Biomaterials Session, Nanoscale Science and Engineering Forum, AIChE Annual Meeting, Salt Palace Convention Center, Salt Lake City, UT, Sunday November 8, 2015, 4:40 – 5:10 PM (Salt Palace Convention Center, Rm 253A).
197. "Zone Specific Chondrogenic Differentiation of Human Mesenchymal Stem Cells Using Developmentally Defined Differentiation Factors," Stem Cell Engineering Track, BMES 2015 Annual Meeting, Tampa Convention Center, Tampa, FL, October 7-10, 2015 (Submission ID# 2029).
196. "A Biomimetic Approach for Engineering Stratified Organization of Articular Cartilage by Recapitulating Biochemical, Biomechanical and Geometrical Factors Involved in Cartilage Tissue Development," 2015 4<sup>th</sup> TERMIS World Congress, Wednesday September 9, 2015, 10:30 – 12:00 AM (Boston Marriott Copley Place).

195. "Determination of Optimum Matrix Stiffness for Maintenance of Human Colon Cancer Stem Cells," 2015 4th TERMIS World Congress, Thursday September 10, 2015, 7:00 – 8:00 AM (Boston Marriott Copley Place).
194. "Nanogels For Dual Delivery Of Bone Morphogenetic Proteins And Vascular Endothelial Growth Factor In Bone Regeneration," 2015 4<sup>th</sup> TERMIS World Congress, Thursday September 10, 2015, 7:00 – 8:00 AM (Boston Marriott Copley Place).
193. "Immune Response And Macrophage Polarization On Mineralized Cell Sheets Seeded With Human Mesenchymal And Endothelial Progenitor Cells," Drug Discovery & Therapy World Congress 2015, John B. Hynes Memorial Convention Center, Boston, MA, Friday, July 24, 2015, 11:00 – 13:00 PM (DDTWC-P#27, Poster Exhibition Area).
192. "Role of Citric Acid on Apatite Nucleation and Osteogenic Differentiation of Human Mesenchymal Stem Cells on Aligned Nanofibers," Poster Presentations: Orthopedic Biomaterials, Society of Biomaterials Annual Meeting and Exposition, Charlotte Convention Center, Charlotte, NC, Wednesday April 15, 2015, 6:00 PM – 8:15 PM (Poster Hall, Presentation #812).
191. "Developmentally Inspired Zone-Specific Chondrogenic Differentiation of Human Mesenchymal Stem Cells," Concurrent Session 5: Materials and Matrices for Osteochondral Tissue Engineering, Society of Biomaterials Annual Meeting and Exposition, Charlotte Convention Center, Charlotte, NC, Thursday April 16, 2015, 4:30 PM – 4:45 PM (Room 213A, Oral Presentation #267).
190. "Cortical Bone Mimetic Matrix for Regeneration of Segmental Bone Defects," Session Biomaterials – Bone, Orthopedic Research Society 2015 Annual Meeting, MGM Grand Hotel, Las Vegas, NV, Sunday March 29, 4:45 – 5:25 PM (PS1-003, Poster# 0310).
189. "3D Micropatterning of Biological Structures using Holographic Optical Tweezers," Session: Tools and Platforms for Stem Cell Therapies, TERMIS Americas Annual Conference, Renaissance Hotel, Washington DC, Sunday December 16, 2014, 11:00 – 11:30 AM.
188. "Synergistic Effect of Tissue-Mimetic Stiffness and Growth Factors on Zone-Specific Chondrogenic Differentiation of Human Mesenchymal Stem Cells," Session: Stem and progenitor cell-based approaches to musculoskeletal tissue therapies, TERMIS Americas Annual Conference, Renaissance Hotel, Washington DC, Sunday December 14, 2014, 11:00 – 11:30 AM.
187. "In Vivo Evaluation of a Cortical-Bone-Mimetic Resorbable Matrix in a Load-Bearing Segmental Defect Model," Session: Implants and host response to biomaterials, TERMIS Americas Annual Conference, Renaissance Hotel, Washington DC, Sunday December 14, 2014, 1:00 – 2:00 PM.
186. "Engineered Cellular Hydrogels for Zonal Regeneration of Articular Cartilage," Annual Meeting of the Society for Biomaterials, Denver Colorado, April 16-19.
185. "Experimental and Computational Investigation of BMP-2 Peptide Activity in Amphiphilic Hydrogels," Annual Meeting of the Society for Biomaterials, Denver Colorado, April 16-19.
184. "Maintenance of breast cancer stem cells in an inert matrix is mediated by mesenchymal stem cells in the tumor stroma," Category: Tumor Biology 7, 2014 Annual Meeting of the American Association for Cancer Research, San Diego Convention Center, San Diego, CA, Sunday April 6, 2014, 1:00 PM – 5:00 PM (Hall A-E, Poster Section 7, Abstract No 7251).
183. "Engineered model matrix to mimic cancer stem cell microenvironment: effect of integrin and heparin binding peptides," Category: Tumor Cell and Molecular Biology: Microenvironment – Stromal-Epithelial Interactions, 2013 San Antonio Breast Cancer Symposium, Henry B. Gonzalez Convention Center, San Antonio, Texas, Wednesday, December 11, 2013, 4:45 – 6:45 PM (Exhibition Hall A-B, Poster Session I, Poster # P1-06-09, Abstract No 1241).

182. "Inert patterned matrix for engineering cancer stem cell niche," Tumor Environment and Cancer Biology (Lessons Learned) Session, TERMIS-Americas 2013 Annual Conference, Hyatt Regency, Atlanta, GA, Tuesday, November 12, 2013, 2:30 – 4:00 PM (Exhibition Hall, Poster #234).
181. "Effect of matrix compressive modulus on zonal marker expression of stromal cells in chondrogenesis," Mechanotransduction Session, TERMIS-Americas 2013 Annual Conference, Hyatt Regency, Atlanta, GA, Monday, November 11, 2013, 4:30 – 6:00 PM (Exhibition Hall, Poster #162).
180. "Osteogenic differentiation of stromal cells in cortical-bone-mimetic microtubes," Engineering of Matrix Composition Session, TERMIS-Americas 2013 Annual Conference, Hyatt Regency, Atlanta, GA, Monday, November 11, 2013, 4:30 – 6:00 PM (Exhibition Hall, Poster #127).
179. "Sequential release of VEGF and BMP-2 proteins in PEG-based hydrogel micropatterns," Drug Delivery Principles Session, TERMIS-Americas 2013 Annual Conference, Hyatt Regency, Atlanta, GA, Monday, November 11, 2013, 4:30 – 6:00 PM (Exhibition Hall, Poster #101).
178. "BMP2-derived peptide aggregation conjugated to amphiphilic PEG macromers in aqueous solution," Computation Modeling Session, TERMIS-Americas 2013 Annual Conference, Hyatt Regency, Atlanta, GA, Tuesday, November 12, 2013, 1:45 – 2:00 PM (Centennial 1 Hall, Oral).
177. "Differentiation and mineralization of marrow stromal cells in osteon-inspired microtubes," TermIstanbul-EU 2013, Biomaterials-OP2 Session, Istanbul, Turkey, Tuesday, June 18, 2013, 17:30 – 19:00 PM (Hall 4: Inonu Hall, Poster).
176. "An engineered inert matrix for in-vitro maintenance of cancer stem cells," Section: Engineering Instructive Cues Biomaterials, Society for Biomaterials Annual Meeting, Hynes Convention Center, Boston, MA, Thursday April 11, 2013, 1:00 PM to 5:00 PM (Abstract No 653, Exhibit Hall A, Poster).
175. "Engineered matrix to study the effect of microenvironment on cancer stem cell maintenance," Session ID: Tumor Biology 3, American Association for Cancer Research (AACR) Annual Meeting, Washington, DC, Sunday Apr 7, 2013 1:00 PM - 5:00 PM (Abstract No 251, Hall A-C, Poster Section 14).
174. "Structure, properties, and stromal cell response of self-assembled micellar star poly(ethylene oxide-co-lactide) hydrogels," Self-Assembled Biomaterials Session, Bionanotechnology Group, AIChE Annual Meeting, Pittsburg, PA, Thursday November 1, 2012, 12:30-12:50 PM (Pittsburg Convention Center, Rm 310).
173. "Response of breast tumor cells to hybrid polymer-peptide self-assembled nanoparticles," Self-Assembled, Bionanotechnology Group, AIChE Annual Meeting, Pittsburg, PA, Thursday November 1, 2012, 12:30-12:50 PM (Pittsburg Convention Center, Rm 310).
172. "Cell encapsulation in hydrolytically degradable polyethylene glycol gels," Stimuli Responsive Biomaterials, Society for Biomaterials Annual Meeting, New Orleans, LA, October 5, 2012, Friday (Poster, Abstract ID# 274, 3:30-4:15 PM, Acadia Room, New Orleans Marriott).
171. "Synergistic effect of osteopontin and bmp-2 derived peptides grafted to a hydrogel on osteogenic and vasculogenic differentiation of stromal cells," Cell-Biomaterial Interactions Minisymposium, Theme-7: Cellular and Tissue Engineering and Biomaterials, Annual Conference of IEEE Engineering in Medicine and Biology Society (EMBC'12), San Diego, CA, Hilton Bayfront, August 31, 2012 (Oral, Paper FrC18.2, Aqua 309).
170. "Effect of degradable segment type and length on nanostructure formation of star polyethylene glycol macromonomers in aqueous solution," Division of Polymer Chemistry, Computational Polymer Modeling, 244<sup>th</sup> American Chemical Society National Meeting, Philadelphia, PA, August 19-23, 2012 (Oral, Abstract ID# 15538).

169. "CD44 binding peptide attached to an engineered matrix prevents the formation of CSC tumorspheres," LBPO.TB04. Late-Breaking Research: Tumor Biology 4, American Association for Cancer Research Annual Meeting, Chicago, IL, Wednesday April 4, 2012 (POSTER, 8:00 AM – 12:00 PM, McCormick Place West, Hall F, Poster Session 38).
168. "Effect of BMP2 peptide grafted nanoparticles on osteogenic expression of stromal cells encapsulated in a hydrogel," Poster Session II, Tissue Engineering and Regenerative Medicine International Society (TERMIS) Annual Conference, Hilton Americas, Houston, TX, Tuesday, December 13, 2011 (POSTER, 4:30 PM, Grand Ballroom).
167. "Effect of CD44 binding peptide conjugated to an engineered hydrogel matrix on maintenance of 4T cancer stem cells," Cancer Session, Tissue Engineering and Regenerative Medicine International Society (TERMIS) Annual Conference, Hilton Americas, Houston, TX, Wednesday, December 14, 2011 (ORAL, 11:30 AM, Grand Ballroom EF).
166. "Mesoscale Simulation of the Structure of Star Acrylated Poly(Ethylene Glycol-co-Lactide) Hydrogels," Symposium LL: Synthetic and Biological Gels, Materials Research Society Meeting, Hynes Convention Center, Boston, MA, Tuesday, November 29, 2011 (ORAL, 11:15 AM, LL4.7, Room 101).
165. "Gelation Characteristics and Encapsulation of Stromal Cells in Star Acrylate-Functionalized Poly (Ethylene Glycol-co-Lactide) Macromonomers," Joint Symposium KK: Biomaterials for Tissue Regeneration and Symposium V: Multifunctional Polymer-based Materials, Materials Research Society Meeting, Hynes Convention Center, Boston, MA, Monday, November 28, 2011 (ORAL, 4:00 PM, KK2.8/V3.8; V3.8/KK2.8, Room 312).
164. "Effect of BMP-2 Derived Peptide Grafted to Nanoparticles on Differentiation of Stromal Cells," Symposium KK: Biomaterials for Tissue Regeneration, Materials Research Society Meeting, Hynes Convention Center, Boston, MA, Tuesday, November 29, 2011 (POSTER, 8:00 PM to 11:00 PM, KK6.34, Exhibit Hall).
163. "Matrix Modulus Affects Invasion Rate of Tumor Cells Through Synthetic Hydrogels," Symposium LL: Synthetic and Biological Gels, Materials Research Society Meeting, Hynes Convention Center, Boston, MA, Wednesday, November 30, 2011 (ORAL, 11:30 AM, LL7.8, Room 101).
162. "The Effect of Surface Modifications on Apatite Formation on Aligned PLGA Nanofibers," Undergraduate Research Track, Biomedical Engineering Society Annual Meeting, Hartford, CT, October 15, 2011 (Poster, 09:30AM to 01:00PM in Convention Center - Exhibit Hall).
161. "Effect of Glutamic Acidic Peptide Modification of Aligned Electrospun PLGA Nanofibers on Calcium-Phosphate Deposition," Tissue Engineering Track, Biomedical Engineering Society Annual Meeting, Hartford, CT, October 12, 2011 (Oral, Abstract ID# 1453).
160. "Synthesis and Characterization of Degradable and Crosslinkable Unsaturated Poly(ethylene oxide-b-lactide-co-glycolide) Macromers," Division of Polymer Chemistry, General Topics in the Design, Synthesis, and Characterization of Polymers session, 242nd American Chemical Society National Meeting, Denver, Co, August 28, 2011 (Oral, Abstract ID# 15256, 4:40-5:00 PM, Sheraton Denver, Room: Governor's Square 16).
159. "Mesoscale simulation of the self-assembly of peptide-conjugated poly(L-lactide) macromers," Division of Polymeric Materials: Science and Engineering, Dynamics of Nanostructured Polymers session, 242nd American Chemical Society National Meeting, Denver, Co, September 1, 2011 (Oral, Abstract ID# 10281, 11:15-11:45 AM, Sheraton Denver, Room: Governor's Square 12).

158. "In vivo tumor toxicity of Doxorubicin encapsulated in peptide-assembled polylactide nanoparticles," Cancer Drug Delivery, Society for Biomaterials Annual Meeting, Orlando, FL, April 14, 2011, Thursday, (Poster, Abstract ID# 707, 4:00-6:00 PM, Walt Disney Contemporary Resort).
157. "Uptake and migration of tumor cells in response to hybrid polymer-peptide self-assembled nanoparticles," Cancer Drug Delivery, Society for Biomaterials Annual Meeting, Orlando, FL, April 14, 2011, Thursday, (Poster, Abstract ID# 672, 4:00-6:00 PM, Walt Disney Contemporary Resort).
156. "rhBMP-2 Protein Grafted to Resorbable Nanoparticles Enhances Osteogenic Expression of Stromal Cells," Nanobiotechnology for Regenerative Medicine, Tissue Engineering and Regenerative Medicine International Society Conference, Orlando, FL, Monday December 6, 2010 (Poster, Abstract ID# 552, 4:30 – 6:00 PM, Walt Disney Hilton).
155. "A Model Microtubular Culture System to Study Osteogenesis and Bone Formation," Musculoskeletal Tissue Engineering session, Tissue Engineering and Regenerative Medicine International Society Conference, Orlando, FL, Tuesday December 7, 2010 (Poster, Abstract ID# 559, 4:30 – 6:00 PM, Walt Disney Hilton).
154. "Effect of BMP-2 and Osteopontin Protein-Derived Peptides Grafted to a Hydrogel Substrate on Osteogenesis of Stromal Cells," Functionalization of Cells and Biomaterials session, Tissue Engineering and Regenerative Medicine International Society Conference, Orlando, FL, Monday December 6, 2010 (Poster, Abstract ID# 565, 4:30 – 6:00 PM, Walt Disney Hilton).
153. "Effect of 3D Microstructure on Osteogenic Expression of Mesenchymal Stem Cells," Controlling Microenvironment and Cell Fate session, Tissue Engineering and Regenerative Medicine International Society Conference, Orlando, FL, Monday December 6, 2010 (Oral, Abstract ID# T2010-1532, 11:15 – 11:30 AM, Walt Disney Hilton).
152. "Conjugation of rhBMP-2 Derived Peptide to Self-Assembled Nanoparticles Enhances Osteogenic Differentiation of Mesenchymal Stem Cells," AIChE Annual Meeting, Nanotechnology for Biotechnology and Pharmaceuticals I, Nanoscale Science and Engineering Forum, Salt Lake city, UT, November 11, 2010, (Oral, Abstract ID# 204578, Thursday, 4:05 PM, Alpine Ballroom West, Hilton).
151. "Tumor Suppression Characteristics of Doxorubicin Encapsulated in Novel Peptidomimetic Nanoparticles," AIChE Annual Meeting, Self-Assembled Biomaterials, Nanoscale Science and Engineering Forum, Salt Lake city, UT, November 12, 2010, (Oral, Abstract ID# 204359, Friday, 10:10 AM, Canyon B, Hilton).
150. "Uptake of Fluorescently-Labeled Peptidomimetic Nanoparticles by Tumor Cells," AIChE Annual Meeting, Nanotechnology for In Vivo and In Vitro Imaging, Nanoscale Science and Engineering Forum, Salt Lake city, UT, November 9, 2010, (Oral, Abstract ID# 204379, Tuesday, 9:10 AM, Canyon B, Hilton).
149. "Role of Substrate Microstructure on Osteogenic Differentiation of Mesenchymal Stem Cells," Tissue Mechanics Track, Annual International Conference of IEEE Engineering in Medicine and Biology Society (EMBC'10), Buenos Aires, Argentina, 1-4 September 2010, Paper#1812.
148. "Effect of Sustained Release of Bone Morphogenetic Protein on Osteogenic Expression of Mesenchymal Stem Cells," Biomimetic materials, implantable biosensor and local drug delivery systems Track, Annual International Conference of IEEE Engineering in Medicine and Biology Society (EMBC'10), Buenos Aires, Argentina, 1-4 September 2010, Paper#1836.
147. "Migration of Stromal Cells in Response to Sustained Release of Stromal Derived Factor-1 $\alpha$ ," Hydrogelsession, 37th Annual Meeting of the Controlled Release Society, Oregon Convention Center, Portland, OR, USA, July 14, 2010 (11:30-11:45 AM).

146. "Sustained Release of Stromal Derived Factor-1 Enhances Migration of Marrow Stromal Cells," Nanomedicine II session, 37th Annual Meeting of the Controlled Release Society, Oregon Convention Center, Portland, OR, USA, July 14, 2010 (3:15-3:30 PM).
145. "Synergistic Effect of rhBMP-2 and osteopontin Derived Peptides Grafted to a Hydrogel Substrate on Osteogenesis of Marrow Stromal Cells," Spotlight Session 20: Stem Cell Differentiation, 56th Annual Meeting of the Orthopedic Research Society, New Orleans, LA, March 6, 2010 (2:45-3:00, #89).
144. "Sustained Release of rhBMP-2 Grafted to Self-Assembled Nanoparticles Enhances the Expression of Osteogenic Markers of Mesenchymal Stem Cells," Poster Session 34: Biomaterials, 56th Annual Meeting of the Orthopedic Research Society, New Orleans, LA, March 6, 2010 (6:00-6:30 PM, #1217).
143. "Synthesis and characterization of peptidomimetic self-assembled biodegradable nanoparticles," Materials Research Society Meeting, Symposium UU: Molecular Biomimetics and Materials Design, Boston, MA, Wednesday, December 2, 2009 (2:30 PM, UU5.4).
142. "Marrow stromal cell response to fiber-reinforced laminated nanocomposites," Materials Research Society Meeting, Symposium RR: Engineering Biomaterials for Regenerative Medicine, Boston, MA, Tuesday, December 1, 2009 (2:45 PM, RR5.5).
141. "Migration of stem cells in response to sustained release of stromal-derived factor 1- $\alpha$ ," Materials Research Society Meeting, Symposium RR: Engineering Biomaterials for Regenerative Medicine, Boston, MA, Monday, November 30, 2009 (8:00 PM, RR3.40).
140. "Release characteristics and osteogenic activity of rhbmp-2 grafted to resorbable nanoparticles," AIChE Annual Meeting, Nashville, TN, November 8-13, 2009, (08B19 Skeletal Tissue Engineering, Oral, Abstract ID# 170645).
139. "Synergistic Effects of RGD and BMP-2 Peptides Grafted to a Biodegradable Scaffold On Osteogenic Differentiation of Stromal Cells," AIChE Annual Meeting, Nashville, TN, November 8-13, 2009, (08B04 Cell-Material Interactions II, Oral, Abstract ID# 170626).
138. "Fabrication and stromal cell response to laminated fiber-reinforced nanocomposites," AIChE Annual Meeting, Nashville, TN, November 8-13, 2009, (08B14 Biomimetic Materials II, Oral, Abstract ID# 170219).
137. "Novel star multifunctional polylactide-co-glycolides as injectable in-situ crosslinkable macromers," AIChE Annual Meeting, Nashville, TN, November 8-13, 2009, (08B22 Injectable Biomaterials 22021, Oral, Abstract ID# 170095).
136. "Self-assembled peptide-conjugated polymer nanoparticles for tumor targeting," AIChE Annual Meeting, Nashville, TN, November 8-13, 2009, (22021 Self-Assembled Biomaterials II, Oral, Abstract ID# 169822).
135. "Synthesis and release characteristics of rhBMP-2 protein grafted to novel self-assembled poly(lactide-co-glycolide fumarate) nanoparticles," 238th National Meeting of the American Chemical Society, Washington, DC, August 16-20, 2009, (Paper ID: 1299140, Paper No. 387, Division of Polymeric Materials: Science & Engineering, Hybrid Smart Micro- and Nanoparticles session, August 19, Oral Presentation, 9:30 – 9:50 AM).
134. "Modulation of Osteogenic Differentiation of Stromal Cells by the BMP-2 Protein-Derived Peptide Grafted to a Hydrogel Substrate," 238th National Meeting of the American Chemical Society, Washington, DC, August 16-20, 2009, (Paper ID: 1298873, Paper No. 206, Division of Polymeric Materials: Science & Engineering, Biomaterials and Bioengineering session, August 17, Oral Presentation, 4:00 – 4:20 PM).
133. "Engineering Bone Formation with Peptidomimetic Hybrid Biomaterials," 31st Annual International IEEE EMBS Conference, Minneapolis, MN, September 2-6, 2009, (Oral Presentation September 3: 14:15 – 14:30 PM; ThCT12 Biomaterial-Cell Interactions track).

132. "Effect of alignment of electrospun fibers on osteogenic differentiation of marrow stromal cells", Society for Biomaterials Annual Meeting, San Antonio, TX, April 23-24, 2009, (Poster Presentation April 23: 5:15-6:00 PM; April 24: 3:30-4:15 PM).
131. "Release characteristics and osteogenic activity of rhBMP-2 conjugated to self-assembled nanoparticles", Society for Biomaterials Annual Meeting, San Antonio, TX, April 23, 2009, Thursday, (Oral Presentation Rapid Fire Session 1, #100, 3:15 – 4:15 PM).
130. "In-vivo bone formation in RGD-conjugated crosslinked poly (lactide) scaffolds with well-defined pore geometry", Society for Biomaterials Annual Meeting, San Antonio, TX, April 23-24, 2009, (Poster Presentation April 23: 5:15-6:00 PM; April 24: 3:30-4:15 PM).
129. "Peptide-induced self-assembly of synthetic poly(lactide fumarate) macromer", Society for Biomaterials Annual Meeting, San Antonio, TX, April 23, 2009, Thursday, (Oral Presentation Rapid Fire Session 3, #118, 4:15 – 5:15 PM).
128. "Mechanical characterization of electrospun laminated hydrogel/apatite nanocomposite", AIChE Annual Meeting, Philadelphia, PA, November 20, 2008, Thursday, (1:08 PM, session#656c, Biomaterials (08b) - Nanostructured Biomaterials (08B07)).
127. "Release characteristics of rhBMP-2 conjugated to self-assembled biodegradable nanoparticles", AIChE Annual Meeting, Philadelphia, PA, November 20, 2008, Thursday, (12:49 PM, session#656c, Biomaterials (08b) - Nanostructured Biomaterials (08B07)).
126. "Biodegradable nanoparticles conjugated with  $\alpha\beta3$  integrin-binding ligand for targeted tumor delivery", AIChE Annual Meeting, Philadelphia, PA, November 20, 2008, Thursday, (4:30 PM, session#714e, Bionanotechnology (22b) - Self-Assembled Biomaterials II (22B19)).
125. "Sustained in situ delivery of rhBMP-2 by conjugation to novel biodegradable nanoparticles," Society for Biomaterials 2008 Translational Biomaterial Research Symposium, Saturday, September 13, 2008 (paper# 276; 2:45-4:15 PM).
124. "Biodegradable self-assembled nanoparticles for targeted delivery of Paclitaxel to tumor cells," Society for Biomaterials 2008 Translational Biomaterial Research Symposium, Musculoskeletal Applications session, Saturday, September 13, 2008 (paper# 152; 3:35-4:30 PM).
123. "Modulation of osteogenic and vasculogenic differentiation of stromal cells in a collagen scaffold," Society for Biomaterials 2008 Translational Biomaterial Research Symposium, Friday, September 12, 2008 (paper# 275; 2:45-4:15 PM).
122. "BMP-2 peptide grafted to a degradable substrate enhances osteogenic differentiation of stromal cells," Society for Biomaterials 2008 Translational Biomaterial Research Symposium, Musculoskeletal Applications session, Saturday, September 13, 2008 (paper# 280; 2:30-4:00 PM).
121. "Release characteristics of rhBMP-2 from self-assembled biodegradable PLEOF nanoparticles," 35th Controlled Release Society Annual Meeting, New York, NY, Monday, July 14, 2008 (paper# 324; 14:00-15:00 PM).
120. "Cytotoxicity of Paclitaxel in biodegradable self-assembled core-shell PLGEOF nanoparticles," 35th Controlled Release Society Annual Meeting, New York, NY, Tuesday, July 15, 2008 (paper# 622; 13:00-14:00 PM).
119. "Quantification of membrane adhesion on ligand gradient substrates," 8th World Biomaterials Conference, Modeling session, Amsterdam, The Netherlands, May 31, 2008 (paper# 1830.00).
118. "Morphology of rat bone marrow stromal cells on aligned electrospun biodegradable fibers," Amsterdam, The Netherlands, May 29, 2008 (paper# 1829.00).



117. "Biodegradable self-assembled nanoparticles for targeted delivery of Paclitaxel to tumor cells," 8th World Biomaterials Conference, Micro/Nanoparticles for drug delivery session, Amsterdam, The Netherlands, June 1, 2008 (paper# 1827.00; 10:30-12:00).
116. "The role of polymer-particle interactions on the viscoelastic properties of polymer nanocomposites," Materials Research Society Meeting, Symposium HH: Nanophase and Nanocomposite Materials V, Boston, MA, Tuesday, November 27, 2007 (8:00 PM, HH8.29).
115. "Effect of ligand density gradient on the adhesion kinetics of biological membranes," Materials Research Society Meeting, Symposium OO: Solids at biological interfaces, Boston, MA, Monday, November 26, 2007 (11.45 AM, OO1.10).
114. "Synthesis of degradable nanotubes by tubulin template polymerization," AIChE Annual Meeting, Salt Lake City, UT, Thursday, November 8, 2007, Thursday (12:30 PM, session#599a, Nanostructured Biomaterials (08B12)).
113. "Release behavior of paclitaxel from self-assembled degradable nanoparticles," AIChE Annual Meeting, Salt Lake City, UT, November 8, 2007, Thursday (1:04 PM, session#606c, Topical 8: Bionanotechnology (T8)).
112. "Marrow stromal cell function on multi-functional peptide-reinforced nanocomposite scaffold," AIChE Annual Meeting, Salt Lake City, UT, Thursday, November 8, 2007, Thursday (2:36 PM, session#575h, Biomimetic Materials II (08B06)).
111. "Gelation, degradation, and marrow stromal cells function on photo-crosslinked pol(lactide-co-glycolide-co-ethylene oxide) hydrogels," AIChE Annual Meeting, Salt Lake City, UT, November 7, 2007, Wednesday (6:30-9:00 PM, session#515bg, #515 - Bioengineering Poster Session (15C05)).
110. "Fabrication of Functional Biodegradable Scaffolds with Well-Defined Pore Geometry," AIChE Annual Meeting, Salt Lake City, UT, November 8, 2007, Thursday, (9:39 AM, session#536d, Functional Biomaterials (08B13)).
109. "Concurrent osteogenic and vasculogenic differentiation of marrow stromal cells," AIChE Annual Meeting, Salt Lake City, UT, Tuesday, November 6, 2007, Tuesday, (1:50 PM session#266e, Tissue Engineering II (08B07)).
108. "Effect of an unsaturated amphiphilic macromer on electrospinning of aligned PLGA fibers," November 8, 2007, Thursday, (1:42 PM, session#599e, Nanostructured Biomaterials (08B12)).
107. "Concurrent Differentiation of Marrow Stromal Cells to Osteogenic and Vasculogenic Lineages in a 3-D culture system," 6th Combined Meeting of the Orthopaedic Research Societies, Honolulu, Hawaii, October, 23, 2007 (11:00 AM, Session 21 Tissue Engineering II (Bone and Tendon), Paper#184, Room 311).
106. "Fabrication of biomimetic scaffolds with well-defined pore geometry by fused deposition modeling," ASME International Conference on Manufacturing Science and Engineering, Georgia Institute of Technology, Atlanta, GA, October 18, 2007, Thursday (10:30 AM, MSEC2007-31011, Session: 2-2 Tissue Scaffold Fabrication).
105. "Multi-functional shape-specific biodegradable nanocomposite scaffolds for bone regeneration," Poster Session, Poster #16, South Carolina Bioengineering Summit, Medical University of South Carolina, Charleston, SC, June 14, 2007 (5:00-7:00 PM).
104. "Interdisciplinary bioengineering and biomedical research in ophthalmology," Poster Session, Poster #45, South Carolina Bioengineering Summit, Medical University of South Carolina, Charleston, SC, June 14, 2007 (5:00-7:00 PM).

103. "Development of a tissue engineering controls laboratory for research training," Poster Session, Poster #49, South Carolina Bioengineering Summit, Medical University of South Carolina, Charleston, SC, June 14, 2007 (5:00-7:00 PM).
102. "Degradation Characteristics of Novel In-Situ Crosslinkable Poly(Lactide-co-Glycolide-Ethylene Oxide-Fumarate) Copolymer Networks," Poster Session: Biomimetics and Nanoscience: Advances in Protein/Peptide-Based Biomaterials, Society for Biomaterials, 2007 Annual Meeting, Chicago, IL., April 19, 2007, Thursday, (5:15 PM, #353).
101. "Response of Marrow Stromal Cells to Multi-Functional Peptide-Reinforced Cell-Adhesive Nanocomposite Scaffolds," Session VI: Biomimetics and Nanoscience: Advances in Protein/Peptide-Based Biomaterials, Society for Biomaterials 2007 Annual Meeting, Chicago, IL., April 21, 2007, Saturday, (9:30-9:45 AM).
100. "A Novel Three-Dimensional Culture System to Study vasculogenesis and Osteogenic Differentiation of BMS Cells," Session III: Tissue Engineering, Society for Biomaterials 2007 Annual Meeting, Chicago, IL., April 20, 2007, Friday, (8:00-8:15 AM).
99. "Proepicardial Cells Modulate the Osteogenic Potential of BMS Cells in Aligned Collagen I Scaffold," Poster Session: Orthopaedic Biomaterials, Society for Biomaterials 2007 Annual Meeting, Chicago, IL., April 20, 2007, Friday, (3:00 PM, #633).
98. "Osteonectin-Derived Peptide Significantly Affects Modulus of Apatite/Hydrogel Composites," AIChE Annual Meeting, San Francisco, CA, November 16, 2006, Thursday, (1:00 PM, session#534b).
97. "Self-Assembly and Nanoparticle Formation of a Novel Bioresorbable and Crosslinkable Terpolymer," AIChE Annual Meeting, San Francisco, CA, November 15, 2006, Wednesday, (9:45 AM, #324f).
96. "Biomimetic Osteoinductive in Situ Crosslinkable Poly(Lactide) for Bone Regeneration," AIChE Annual Meeting, San Francisco, CA, November 15, 2006, Wednesday, (4:30 PM, #431d).
95. "Modeling and Measurement of Rheological Properties of Poly(Lactide Ethylene Oxide Fumarate)/Hydroxyapatite Nanocomposites," AIChE Annual Meeting, San Francisco, CA, November 17, 2006, Friday, (12:50 PM, #670b).
94. "Modeling and Gelation Kinetics of Injectable in Situ Crosslinkable Poly(Lactide-Ethylene Oxide-Fumarate) Hydrogel Networks," AIChE Annual Meeting, San Francisco, CA, November 14, 2006, Tuesday, (10:30 AM, #190g).
93. "In-Situ Crosslinkable Osteoinductive Poly(lactide) Scaffold for Bone," AO Symposium: Biomaterials, Cell-, Tissue and Gene based Therapies: From Basic Research to Clinical Applications, University Hospital Lausanne, Lausanne, Switzerland, October 20, 2006 (9:25 AM).
92. "Bioinspired Nano-Composite Materials as Scaffolds for Bone Tissue Regeneration," Department of Chemical & Biomolecular Engineering, Atlanta, GA, September 20, 2006.
91. "Synthesis of novel multi-functional matrix metalloproteinases degradable peptide crosslinkers," 7<sup>th</sup> International Biorelated Polymers Symposium, 232<sup>nd</sup> ACS National Meeting, San Francisco, CA, USA, Sept. 10-14, 2006 (Oral Paper#609; 3:00 PM, September 13, 2006).
90. "Synthesis and material properties of functionalized lactide oligomers as in situ crosslinkable scaffolds for tissue regeneration," 7<sup>th</sup> International Biorelated Polymers Symposium, 232<sup>nd</sup> ACS National Meeting, San Francisco, CA, USA, Sept. 10-14, 2006 (Oral Paper#295; 2:20 PM, September 11, 2006).

89. "Synthesis, Processing, and Applications of Biomimetic Nanocomposites in Tissue Engineering," Nanotechnology Seminar Series, Accelrys Corp., San Diego, CA, August 15, 2006.
88. "Biomimetic Osteoinductive In situ Crosslinkable Poly(lactide) for Bone Regeneration," 1<sup>st</sup> Marie Curie Cutting Edge InVENTS Conference on New Developments on Polymers for Tissue Engineering, Replacement, and Regeneration, Funchal, Madeira, Portugal, June 3, 2006 (4:00 PM).
87. "Enzymatically Degradable Hydrogel Nanocomposite for Bone Regeneration," NSTI Nanotech, Boston, MA, May 11, 2006, Thursday, 11:10 AM (TH25.03).
86. "In Situ Crosslinkable Bioresorbable Poly(Lactide Fumarate) Scaffolds for Guided Bone Regeneration," Society for Biomaterials Annual Meeting, Pittsburg, PA, April 26-29, 2006 (9:30 AM, Thursday April 27, 2006).
85. "Biomimetic Hydrogel/apatite Nanocomposite Scaffolds for Bone Regeneration," Materials Research Society (MRS) Fall Meeting, Boston, MA, November 30, 2005 (2:15 PM, session#J7.3).
84. "Synthesis and characterization of poly(l-lactide) networks as in-situ crosslinkable scaffolds for guided tissue regeneration," AIChE Annual Meeting, Cincinnati, OH, October 31, 2005 (12:50 PM, session#50b).
83. "Solid-phase synthesis of functionalized peptides as enzymatically degradable crosslinkers for fabrication of tissue engineering scaffolds," AIChE Annual Meeting, Cincinnati, OH, October 31, 2005 (1:10 PM, session#50c).
82. "Effect of lactide to ethylene glycol ratio on material properties of novel biodegradable poly(lactide-ethylene oxide-fumarate) terpolymer hydrogels," AIChE Annual Meeting, Cincinnati, OH, October 31, 2005 (4:45 PM, session#100f).
81. "Synthesis and characterization of apatite nanoparticles grafted with unsaturated hydrophilic macromers," AIChE Annual Meeting, Cincinnati, OH, November 1, 2005 (3:55 PM, session#256c).
80. "Aqueous based hydrogel/apatite nanocomposite scaffolds for guided bone regeneration," AIChE Annual Meeting, Cincinnati, OH, November 1, 2005 (4:15 PM, session#256d).
79. "Biodegradable hybrid scaffolds with interconnected networks for bone tissue engineering," XXXII Annual European Society for Artificial Organs (ESAO) Congress, Bologna, Italy, October 7, 2005 (16:00 PM).
78. "Biodegradable Hybrid Scaffolds with Interconnected Networks for Bone Tissue Engineering," 4th International Conference on Polymer Science and Technology (ISPST2005), Tehran, Iran, 27-29 September 2005.
77. "Chitosan/Gelatin/Beta-Tricalcium Phosphate Materials as Potential Tissue Engineered Orthopedic Substitutes," 4th International Conference on Polymer Science and Technology (ISPST2005), Tehran, Iran, 27-29 September 2005.
76. "Material Properties and Biocompatibility of Self-Crosslinkable, Poly(caprolactone fumarate) Copolymer as a Scaffold for Guided Tissue Regeneration," AIChE Annual Meeting, Austin, TX, November 12, 2005 (9:27 AM, session# 89e).
75. "Permeability of Polymeric Scaffolds with Defined Pore Micro-architecture and Interconnectivity fabricated by Solid Freeform Fabrication," AIChE Annual meeting, Austin, TX, November 11, 2005 (4:00 PM, session# 87c).
74. "PLGA Microspheres Embedded in Porous Biodegradable Scaffold as a Delivery Vehicle for Sustained Release of Recombinant Human Bone Morphogenetic Protein-2 (rhBMP-2)," AIChE Annual meeting, Austin, TX, November 9, 2005 (1:25 PM, session#68d).

73. "In Vitro Migration and Proliferation of Human Osteoblasts in Injectable in Situ Crosslinkable Poly(caprolactone fumarate) Scaffolds," AIChE Annual meeting, Austin, TX, November 9, 2005 (12:45 PM, session#68b).
72. "Monte Carlo simulation of the effect of water-soluble monomer in emulsion terpolymerization of styrene/butadiene/acrylic acid," AIChE Annual meeting, Austin, TX, November 10, 2005 (5:30 PM, session#337y).
71. "Effect of Macromer Grafted Nano-Hydroxyapatite on Compressive Mechanical Properties of Poly(Propylene Fumarate) Scaffolds," 7<sup>th</sup> World Biomaterials Congress, Sidney, Australia, 17-21, May 2004.
70. "Investigating Scaffold Interconnectivity with Micro-CT and Image Analysis," 7<sup>th</sup> World Biomaterials Congress, Sidney, Australia, 17-21, May 2004.
69. "Evaluation of The Cytocompatibility of a Novel Poly(Caprolactone Fumarate) Injectable Scaffold with Human Fetal Osteoblast Cells," 7<sup>th</sup> World Biomaterials Congress, Sidney, Australia, 17-21, May 2004.
68. "Fabrication of Shape Specific Biodegradable Porous Polymeric Scaffolds With Controlled Interconnectivity by Solid Free-Form Microprinting," 7<sup>th</sup> World Biomaterials Congress, Sidney, Australia, 17-21, May 2004.
67. "Release Characteristics of *Recombinant Human Bone Morphogenic Protein-2* from PLGA microspheres embedded in a Poly(Propylene Fumarate) Porous Scaffold," 7<sup>th</sup> World Biomaterials Congress, Sidney, Australia, 17-21, May 2004.
66. "Swelling of Fumarate Based Hydrogels Affects Osteogenic Differentiation of Embedded Marrow Stromal Cells," 7<sup>th</sup> World Biomaterials Congress, Sidney, Australia, 17-21, May 2004.
65. "Cell-Seeded, Bio-degradable Polymer Implants in the Quantitative Assessment of Regeneration after Spinal Cord Injury in Rats," 56<sup>th</sup> Annual Meeting of the American Academy of Neurology, San Francisco, CA, April 30 (April 24-May 1), 2004(S66.002).
64. "Development of an Injectable and in situ Crosslinkable Scaffold Based on Hydrogels as the Porogen for Guided Bone Regeneration," 6<sup>th</sup> Annual International Conference of the Tissue Engineering Society, Toronto, Canada, December 2003.
63. "Anatomically-Inspired Scaffolds to Promote Axon Regeneration in the Spinal Cord," 6<sup>th</sup> Annual International Conference of the Tissue Engineering Society, Toronto, Canada, December, 2003.
62. "Release Kinetics of Recombinant Human Bone Morphogenic Protein-2 (rhBMP-2) from Biodegradable Poly(DL-lactic-co-glycolic acid) Microspheres," Annual meeting of American Institute of Chemical Engineers, San Francisco, CA, November, 2003.
61. "A Novel Biocompatible and Self-Crosslinkable Poly(caprolactone fumarate) Copolymer with Controlled Degradation as a Scaffold for Guided Bone Regeneration," Annual meeting of American Institute of Chemical Engineers, San Francisco, CA, November, 2003.
60. "Development of a Novel Degradable, Injectable, and Self-Crosslinkable Composite Biomaterial for Orthopedic Applications," National Science Foundation Sponsored Materials Chemistry Workshop, Tempe, Arizona, October 2003.
59. "Hydrophobicity Effects of Crosslinking Agent on Swelling Behavior of Poly (acrylic acid) Hydrogels in Electrical Fields," 6<sup>th</sup> Seminar on Polymer Science and Technology (ISPST), Tehran, 12-15 May (2003).

58. "Synthesis of Poly (Acrylic Acid) Nanoparticles as Drug Delivery Carriers," 6<sup>th</sup> Seminar on Polymer Science and Technology (ISPST), Tehran, 12-15 May (2003).
57. "Preparation and Characterization of pH-Responsive Poly(Methacrylic Acid-g-Ethylene Glycol) Nanogels," 6<sup>th</sup> Seminar on Polymer Science and Technology (ISPST), Tehran, 12-15 May (2003).
56. "Bone Formation from Marrow Stromal Cells Encapsulated in Oligo(PEG fumarate) Hydrogels," Biomedical Engineering Society Annual Fall Meeting, Nashville, TN, October 2003.
55. "Monte Carlo Simulation of Particle Formation and Molecular Weight Distribution in Styrene/Butadiene Emulsion Copolymerization," 4<sup>th</sup> European Congress of Chemical Engineering, Granada, Spain, Sep. 21-25, 2003.
54. "Synthesis and Characterization of Nano Hydroxyapatite Grafted with Biodegradable and Crosslinkable Fumaric/ Adipic Acid Macromer," 226<sup>th</sup> ACS National Meeting, New York, NY, September 2003.
53. "Schwann Cell Seeded Biodegradable Polymer Implants Promote Axonal Regeneration in Spinal Cord Injury," Peripheral Nerve Society Biennial Meeting", Banff, Canada, July 2003.
52. "Development of a Novel Self-Crosslinkable Poly(caprolactone fumarate) as a Biodegradable and Injectable Scaffold for Bone Tissue Engineering," 25<sup>th</sup> IEEE Engineering in Medicine and Biology Conference, Cancun, Mexico, September 2003.
51. "Encapsulation and Mineralization of Marrow Stromal Cells in Synthetic Biodegradable and in Situ Crosslinkable Hydrogels," 14<sup>th</sup> International Symposium on Microencapsulation, Singapore, September 2003.
50. "Encapsulation of a Model Double Stranded Plasmid DNA from Synthetic and Biodegradable Poly(ethylene glycol fumarate) Hydrogel Microspheres," 14<sup>th</sup> International Symposium on Microencapsulation, Singapore, September 2003.
49. "The Assessment of Interconnectivity of Tissue Engineering Scaffolds Using Hydraulic Permeability," Annual Meeting of the Society for Biomaterials, Reno, Nevada, March 2003.
48. "Controlled Release of Plasmid DNA from Biodegradable Oligo(poly(ethylene glycol) fumarate) Hydrogel Microspheres," Annual meeting of the American Institute of Chemical Engineers, Indianapolis, IN, November 2002.
47. "Development of a Biodegradable Redox Initiated Oligo(poly(ethylene glycol) fumarate) Based Hydrogel as an Injectable in situ Crosslinkable Cell Carrier," Annual meeting of the American Institute of Chemical Engineers, Indianapolis, IN, November 2002.
46. "Morphology and Release Behavior of Polyurethane Microspheres Prepared by Solvent Extraction/ Interfacial Polycondensation," 29<sup>th</sup> International Symposium on Controlled Release of Bioactive Materials, Seoul, South Korea, June 2002.
45. "Effect of Crosslinking Agent on the Swelling Behavior of Anionic Acrylic Acid Hydrogels in an Externally Applied Electric Field," 29<sup>th</sup> International Symposium on Controlled Release of Bioactive Materials, Seoul, South Korea, June 2002.
44. "Swelling Behavior and Cytotoxicity of Poly(vinyl alcohol) Hydrogel Grafted with N-Vinyl Pyrrolidone or Acrylic acid," Annual Meeting of the Society for Biomaterials, Tampa, FL, March 2002.
43. "Effect of Grafting N-Ninyl Pyrrollidone or Acrylic Acid on Cytotoxicity and Water Content of Crosslinked Poly(vinyl alcohol) as Artificial Cartilage," 5<sup>th</sup> Asian Symposium on Biomedical Materials, Hong Kong, December 2001.

42. "Increased Fluid Solid Friction Coefficient of Silicone Rubber Poly(acrylic acid) Composite Due to Change of Polarity Upon Addition of Hydrogel," 5th Asian Symposium on Biomedical Materials, Hong Kong, December, 2001.
41. "Swelling and Cytotoxicity of Poly(vinyl alcohol) Based Hydrogel Composites," 10th National Biomedical Engineering Conference, Tehran, Iran, October 2001.
40. "Effect of Aluminum Oxide/ Silicon Oxide Ratio on Properties of Glass Ionomer Cements for Dental Applications," 10th National Biomedical Engineering Conference, Tehran, Iran, October 2001.
39. "Release Behavior of a Model Active Agent from Polyurethane Microspheres Based on Methylene Bisphenylisocyanate or Hexamethylene Diisocyanate and Castor Oil," 10th National Biomedical Engineering Conference, Tehran, Iran, October 2001.
38. "Increase in Surface Polarity of a Buffer-Rinsed Biocomposite with Time," 10th National Biomedical Engineering Conference, Tehran, Iran, October 2001.
37. "Effect of Mesh Size of the Network on Mucoadhesion of Poly(acrylic acid) Hydrogel to the Intestinal Mucous in Simulated Physiological Conditions," 28<sup>th</sup> International Symposium on Controlled Release of Bioactive Materials, San Diego, CA, June 2001.
36. "Microstructure and Release Behavior of Polyurea Microcapsules Prepared by the Method of Interfacial Polycondensation," 28<sup>th</sup> International Symposium on Controlled Release of Bioactive Materials, San Diego, CA, June 2001.
35. "Effect of pH and Extent of Crosslinking on Swelling Pressure of Anionic Acrylic Acid Hydrogel," 28<sup>th</sup> International Symposium on Controlled Release of Bioactive Materials, San Diego, CA, June 2001.
34. "Variation of Equilibrium Water Content of Silicone Rubber/ Poly(acrylic acid) Particular Composite with Hydrogel Content," 28<sup>th</sup> International Symposium on Controlled Release of Bioactive Materials, San Diego, CA, June 2001.
33. "Effect of PAA to Silicone Ratio on Wettability and Swelling Behavior of Polyacrylic Acid and Silicone Rubber Particulate Composite," 5th National Seminar on Polymer Science and Technology, Tehran, Iran, September 2000.
32. "Adsorption Kinetics of Lysozyme on Soft Hydrophilic Contact Lenses," 5th National Seminar on Polymer Science and Technology, Tehran, Iran, September 2000.
31. "Finite Element Analysis of the Effect of Geometry on Mechanical Design of Low Modulus Plastic Orthopedic Plates," 12th Conference of the European Society of Biomechanics, Dublin, Ireland, June 2000.
30. "Encapsulation and Controlled Release of Antifouling Agent Tributyl Tin Chloride by Complex Coacervation," 27th International Symposium on Controlled Release of Bioactive Materials, Paris, France, July 2000.
29. "Release Behavior of Nitroglycerin from a Micro-Reservoir Transdermal Delivery Device," 27th International Symposium on Controlled Release of Bioactive Materials, Paris, France, July 2000.
28. "Effect of Electric Field on Swelling of Anionic Acrylic Acid Hydrogels," 27th International Symposium on Controlled Release of Bioactive Materials, Paris, France, July 2000.
27. "Finite Element Modeling of Bone Fixed with Composite Plate," Proceedings of the Second Asian-Australian Conference on Composite Materials, Sidney, Australia, August 2000.

26. "Sustained Delivery of Nitroglycerin for Treatment of Angina Pectoris via the Transdermal Route," 9th National Conference on Biomedical Engineering, Tehran, Iran, February 2000.
25. "The Effect of Crosslinking Agent Concentration on Swelling Behavior of Anionic Acrylic Acid Hydrogel in an External Electric Field," 9th National Conference on Biomedical Engineering, Tehran, Iran, February 2000.
24. "Release Behavior of the Antifouling Agent Tributyl Tin Chloride from Microcapsules Prepared by the Method of Complex Coacervation," 1st National Conference on Novel Delivery Systems for Biologically Active Agents, Tehran, Iran, April 2000.
23. "Theoretical and Experimental Investigation of the Swelling Behavior of Acrylic Acid Hydrogel in an External Electric Field," 1st National Conference on Novel Delivery Systems for Biologically Active Agents, Tehran, Iran, April 2000.
22. "Design of a Sustained Transdermal Drug Delivery System for Nitroglycerin," 1st National Conference on Novel Delivery Systems for Biologically Active Agents, Tehran, Iran, April 2000.
21. "Measurement of Mucoadhesion of Chemically Crosslinked acrylic acid and Hydroxyethyl Methacrylate and Physically Crosslinked Polyvinyl alcohol Hydrogels to the Surface of Small Intestine," 1st National Conference on Novel Delivery Systems for Biologically Active Agents, Tehran, Iran, April 2000.
20. "Characterization of Microcapsules Synthesized by Interfacial Polycondensation of Polymethylene Phenyl Isocyanate and Hexamethylene Diamine," 1st National Conference on Novel Delivery Systems for Biologically Active Agents, Tehran, Iran, April 2000.
19. "Effect of Chain Extending Agent on Morphology of Porous Polyurethane Microspheres," 26th International Symposium on Controlled Release of Bioactive Materials, Boston, MA, June 1999.
18. "Effect of Swelling on Mucoadhesion of Anionic Acrylic Acid Hydrogel to the Surface of Small Intestine," 26th International Symposium on Controlled Release of Bioactive Materials, Boston, MA, June 1999.
17. "Effect of Strain Rate on Mucoadhesion of Synthetic Hydrogels to the Surface of Small Intestine," 26th International Symposium on Controlled Release of Bioactive Materials, Boston, MA, June 1999.
16. "Effect of Annealing on the Release of Pilocarpine from Polyvinyl alcohol Gels," 4th National Chemical Engineering Congress, Tehran, Iran, November 1999.
15. "Preparation of Aqueous Suspension of Polyurethane Microparticles by Suspension Condensation Polymerization," 4th National Chemical Engineering Congress, Tehran, Iran, November 1999.
14. "Controlled Delivery of Nitroglycerin Based on a Transdermal Delivery System," 4th National Chemical Engineering Congress, Tehran, Iran, November 1999.
13. "Sustained Ocular Delivery of Pilocarpine Hydrochloride Using Water Insoluble Poly Vinyl Alcohol Gels," 6th National Conference on Pharmaceutical Sciences, Isfahan, Iran, August 1998.
12. "The Effect of Crosslinking on Mucoadhesive Force Between Acrylic Acid Hydrogel and Small Intestine for Targeted Gastro-Intestinal Drug Delivery," 6th National Conference on Pharmaceutical Sciences, Isfahan, Iran, August 1998.
11. "Characterization of Microcapsules Prepared by Interfacial Polycondensation of Polymethylene phenyl isocyanate and Hexamethylene diamine," 2ed National Congress of Chemical Engineering, Tehran, Iran, November 1997.
10. "Microencapsulation and Controlled Delivery of Diazinon Using Interfacial Polymerization," 2ed National Congress of Chemical Engineering, Tehran, Iran, November 1997.

9. "Investigation of the Release Mechanism of Nitroglycerin from a Transdermal Microreservoir System," 5th National Conference on Pharmaceutical Sciences, Tehran, Iran, November 1997.
8. "Effect of Mechanism of Macromolecular Motion on the Rate of Healing at the Interface of Dissimilar Polymer Layers," 2ed International Seminar on Polymer Science and Technology, Tehran, Iran, November 1997.
7. "Application of Poly(acrylic acid) Bioadhesive in Targeted Delivery of Biologically Active Compounds," 8th Iranian Conference on Biomedical Engineering, Tehran, Iran, December 1996.
6. "Swelling Behavior of Acrylic Acid Hydrogels Crosslinked with Gamma Radiation for Sustained Enteric Drug Delivery," 8th National Conference on Biomedical Engineering, Tehran, Iran, December 1996.
5. "Measurement of Chain Interpenetration at a Mucoadhesive Interface Using Attenuated Total Reflection Infrared Spectroscopy," 1st National Congress of Chemical Engineering, Tehran, Iran, November 1994.
4. "Measurement of the Concentration Profile at a Poly(vinyl chloride) and Poly(methyl methacrylate) Interface with Analytical Electron Microscopy," Annual Meeting of the American Institute of Chemical Engineers, Miami, FL, November 1992.
3. "Use of ATR-FTIR Spectroscopy for the Investigation of Chain Interpenetration in Bioadhesion," Annual Meeting of the American Institute of Chemical Engineers, Miami, FL, November 1992.
2. "Interdiffusion in Compatible Polymer Pairs," American Physical Society Annual Conference, Indianapolis, IN, March 1992.
1. "Interfacial Adhesion of Poly(vinyl chloride) and Poly(ethyl methacrylate)," Adhesion Society Annual Conference, Hilton Head, SC, February 1992.

#### **FUNDED RESEARCH**

28. Type: Internal (PI: Maksymilian Chruszcz, Co-PI: Esmail Jabbari)  
Agency: USC Office of Vice President for Research (ASPIRE II Integration)  
Title: Spider Mite Silk Fibers as a Renewable Super-Material  
Date: 06/01/2020 Amount: \$100,000 Duration: 1 year
27. Type: External (PI: Taixing Cui, Co-PI: Esmail Jabbari)  
Agency: NIH/NIGMS Pilot Project  
Title: Targeting Vascular Stem Cells for the Treatment of Vein Graft Failure  
Date: 02/01/2020 Amount: \$75,000 Duration: 1 year
26. Type: External (PI: John Weidner, Co-PI: Esmail Jabbari)  
Agency: Boeing Corporation  
Title: PFI: AIR-TT: Biomimetic Composite for Segmental Bone Regeneration  
Date: 01/01/2016 Amount: Duration: 1.5 years
25. Type: External (PI: Esmail Jabbari)  
Agency: National Science Foundation  
Title: PFI: AIR-TT: Biomimetic Composite for Segmental Bone Regeneration  
Date: 04/01/2015 Amount: Duration: 1.5 years
24. Type: External (PI: Esmail Jabbari)  
Agency: National Science Foundation  
Title: Cancer stem cell mechanotransduction in engineered matrix  
Date: 07/01/2014 Amount: Duration: 3 years



24. Type: Internal (Co-PI: Esmail Jabbari; PI: Roger Sawyer, Biological Sciences)  
 Agency: USC Office of Vice President for Research (ASPIRE II Funding)  
 Title: From genome to novel materials: Developing the beta ( $\beta$ ) keratin monomer as a nanofiber for fabrication of new products with new properties  
 Date: May 16, 2014 Amount: Duration: 15 months
23. Type: Internal (PI: Esmail Jabbari)  
 Agency: USC Office of Vice President for Research (ASPIRE II Funding)  
 Title: Cancer initiating cell mechanotransduction in a model hydrogel culture system  
 Date: May 16, 2014 Amount: Duration: 15 months
22. Type: External (PI: Esmail Jabbari)  
 Agency: National Science Foundation I-Corps Program  
 Title: I-Corps: Biomimetic Degradable Load Bearing Osteoconductive Bone Graft  
 Date: October 1, 2013 Amount: Duration: 6 months
21. Type: External (PI: Esmail Jabbari)  
 Agency: National Institutes of Health R56  
 Title: Microengineered Osteoinductive and Vasculogenic Scaffold  
 Date: September 1, 2013 Amount: Duration: 2 years
20. Type: State Sponsored (PI: Esmail Jabbari)  
 Agency: The South Carolina Project for Organ Transplantation  
 Title: Engineering Hydrogel Matrix for Cell Printing  
 Date: September 1, 2012 Amount: Duration: 1 year
19. Type: External (PI: Esmail Jabbari)  
 Agency: National Science Foundation EAGER Grant  
 Title: Microengineered Osteon-Mimetic Composite  
 Date: September 1, 2010 Amount: Duration: 2 years
18. Type: External (PI: Esmail Jabbari)  
 Agency: AO (Arbeitsgemeinschaft Fur Osteosynthesefragen) Foundation  
 Title: Biodegradable Inductive Load-Bearing Bone Regeneration Scaffold  
 Date: August 1, 2010 Amount: Duration: 3 years
17. Type: External (PI: Esmail Jabbari)  
 Agency: National Science Foundation  
 Title: Engineered Nanoparticles for Tumor Targeting  
 Date: September 1, 2009 Amount: Duration: 3 years
16. Type: External (PI: Esmail Jabbari)  
 Agency: National Science Foundation Graduate Supplement  
 Title: Engineering Bone Formation in Multi-Functional Nanocomposite Scaffolds  
 Date: August 5, 2009 Amount: Duration: 1 year
15. Type: External (PI: Esmail Jabbari)  
 Agency: National Institutes of Health R03  
 Title: Biodegradable Self-Inductive Scaffold for Cranial Regeneration

- Date: March 25, 2009                      Amount:                      Duration: 2 years
14. Type: External (PI: Esmail Jabbari)  
 Agency: National Football League Charities  
 Title: Self-Healing Injectable Bone Graft  
 Date: May 6, 2008                      Amount:                      Duration: 1 year
13. Type: External (PI: Esmail Jabbari)  
 Agency: South Carolina Spinal Cord Injury Fund  
 Title: Biodegradable Scar-Inhibiting Implants for Guided Spinal Cord Regeneration  
 Date: January 15, 2008                      Amount:                      Duration: 2 years
12. Type: External (PI: Esmail Jabbari)  
 Agency: National Science Foundation  
 Title: Engineering Bone Formation in Multi-Functional Nanocomposite Scaffolds  
 Date: September 15, 2007                      Amount:                      Duration: 3 years
11. Type: External (PI: Esmail Jabbari)  
 Agency: Oral and Maxillofacial Surgery Foundation  
 Title: Role of BMP-2 peptide grafted poly(lactide) in cranial regeneration  
 Date: August 31, 2007                      Amount:                      Duration: 1 year
10. Type: State-Wide (PI: Esmail Jabbari)  
 Agency: South Carolina Idea Network of Biomedical Research Excellence (INBRE)  
 Title: PLGEOF Nanoparticles Conjugated with  $\alpha\beta 3$  integrin-binding ligand for Targeted Tumor Delivery  
 Date: May 31, 2007                      Amount:                      Duration: 1 year
9. Type: External (PI: Philip A. Voglewede    Co-PI: Esmail Jabbari)  
 Agency: National Science Foundation  
 Title: Continuous renewal of undergraduate education via an interdisciplinary, inquiry-based laboratory  
 Date: October 15, 2006                      Amount:                      Duration: 2 years
8. Type: External (PI: Esmail Jabbari)  
 Agency: Aircast Foundation  
 Title: Synergistic Effects of Microencapsulated BMP and RGD Peptide on Osteoinductivity of Injectable In-Situ Crosslinkable Poly(lactide) Scaffolds  
 Date: April 1, 2006                      Amount:                      Duration: 2 years
7. Type: External (PI: Esmail Jabbari)  
 Agency: AO Foundation  
 Title: In-Situ Crosslinkable Osteoinductive PLA Scaffold for Bone Regeneration  
 Date: September 1, 2005                      Amount:                      Duration: 2 years
6. Type: Internal (PI: Esmail Jabbari)  
 Agency: Research & Productive Scholarship Award, University of South Carolina  
 Title: Bimodally Degradable Hydrogels as Carrier for Stem cells in Cartilage Regen.  
 Date: February 3, 2005                      Amount:                      Duration: 1 year

5. Type: External (PI: Dr. Michael A. Yaszemski Co-Investigator: Esmail Jabbari)  
 Agency: National Institutes of Health R01  
 Title: Osteoinductive injectable degradable polymeric scaffold  
 Date: May 15, 2004 Amount: Duration: 5 years
4. Type: External (PI: Dr. Michael A. Yaszemski Co-Investigator: Esmail Jabbari)  
 Agency: National Institutes of Health R01  
 Title: Injectable osteoinductive biodegradable composites  
 Date: May 15, 2004 Amount: Duration: 5 years
3. Type: External (PI: Dr. Anthony J. Windebank Co-Investigator: Esmail Jabbari)  
 Agency: National Institutes of Health R01  
 Title: Biodegradable implants to promote axonal regeneration in spinal cord injury  
 Date: May 15, 2004 Amount: Duration: 5 years
2. Type: External (PI: Dr. Anthony J. Windebank Co-Investigator: Esmail Jabbari)  
 Agency: W.L. Gore & Associates  
 Title: Synthetic dural implants to promote axonal regeneration in spinal cord injury  
 Date: September 15, 2002 Amount: Duration: 1 year
1. Type: Internal, University of South Carolina (PI and Mentor: Esmail Jabbari)  
 Agency: Magellan Scholarship Fund & SURF Grants for Undergraduate Research, USC
  1. Targeted Delivery to Tumor Cells with Taxol-Entrapped Nanospheres (Kevin Yeh, \$3000, 2007)
  2. Functional Self-Assembled Poly(Lactide-co-Glycolide Fumarate) Nanoparticles (Ryan Cassaro, \$2500, 2009)
  3. Engineered Nanoparticles for Targeted Tumor Delivery (Sowjanya Kadali, \$3000, 2008)
  4. Multichannel Hydrogel for Neurogenic Differentiation of Marrow Stromal Cells (Sana Khaliq, \$2900, 2010)
  5. Effect of terminal charge on self-assembly of polymer-peptide nanoparticles (Romel Menacho, \$2500, 2010)
  6. cRGD ligand conjugated nanoparticles for receptor-mediated tumor targeting, SURF Fund (George R, Plasko, \$3000, 2011)
  7. Synthesis and characterization of peptide-conjugated PLEOF hydrogels for cell encapsulation, SURF Fund (Vadhar Kaushal, \$3000, 2011)
  8. Effect of A5G27 peptide binding to CD44 receptor on maintenance of breast cancer stem cells (Purva and Pooja Choudhari, Biomedical Engineering, \$3000, 2012)
  9. Micropatterned Hydrogels for Osteogenic and Vasculogenic Stem Cell Differentiation (George Plasko, Biomedical Engineering, \$2500, 2012)
  10. Synthesis of Macromer Based Biodegradable Hydrogels for Differentiation and Proliferation of Marrow Stromal Cells (John Sieracke, Biomedical Engineering, \$2000, 2012)
  11. Osteogenic and Vasculogenic Potential of Microtube Scaffolds Using a Perfusion Bioreactor (Joshua Walters, Biomedical Engineering, \$2500, 2013)
  12. Vasculogenic Induction of Endothelial Progenitor Cells via Extracellular Matrix Protein Derived Peptides in UV Crosslinked Hydrolytically Degradable Poly(Ethylene Glycol) Hydrogel (Ibrahim Askar, Biomedical Engineering, \$2500, 2013)
  13. Investigation into the Use of Sodium Citrate to Control the Deposition of Calcium Phosphate Crystals onto Electrospun Nanofibers for use in Bone Tissue Engineering (Joshua Walters, Biomedical Engineering, Magellan Mini Grant, \$500, 2014).

14. Investigation into the Use of Sodium Citrate to Control the Deposition of Calcium Phosphate Crystal on Electrospun Nanofibers for Bone Tissue Engineering (Joshua Walters, Biomedical Engineering, Magellan Capstone Scholars Grant, \$1000, 2104).
15. Synthesis of microtubular scaffolds of nanofibers for bone replacement (Ryan McCormick, Biomedical Engineering, SURF grant, #3000, 2014).
16. Modified nanofibers with CaP-nucleating organic acids (Shawn Patel, Biomedical Engineering, SURF grant, \$3000, 2014).
17. Fabrication of biomimetic nanofibers (Weston Grove, Biomedical Engineering, SURF grant, \$3000, 2014).
18. Influence of cyro-freezing on the viability of stem cells on cell sheets (Samuel Keeney, Biomedical Engineering, SURF grant, \$3000, 2014).
19. Effect of Various Peptides on Breast Cancer Stem Cells (Katherine Melink, Biomedical Engineering, Capstone Scholars Magellan Apprentice, \$1000, 2015).
20. The effect of peptides on breast cancer stem cells maintenance and tumorsphere formation within PEGDA hydrogel (Victoria A. Baldock, Biomedical Engineering, Science Undergraduate Research Fellowship, \$3000, July 2015 – June 2016).
21. The effect of peptides on breast cancer stem cells maintenance and tumorsphere formation within PEGDA hydrogel (Samuel J. Keeney, Biomedical Engineering, Science Undergraduate Research Fellowship, \$2000, July 2015 – June 2016).
22. The effect of organic acid additives on mineralization properties of aligned polymer nanofibers (Ryan C. McCormick, Biomedical Engineering, Science Undergraduate Research Fellowship, \$1500, July 2015 – June 2016).
23. Synthesis of lab-made peptides through manipulation of the Fmoc amino inhibitors (Reilly Carr, Biomedical Engineering, Science Undergraduate Research Fellowship, \$3000, September 2015 – August 2016).
24. Production of biodegradable hydrogel scaffolds with defined pore geometry by 3D printing (Janay M. Clytus, Biomedical Engineering, Summer Research, SC Alliance for Minority Participation, \$4000, May 2016 – August 2016).
25. Effects of hypoxia on breast cancer stem cell maintenance and tumorsphere formation (Victoria Baldock, Biomedical Engineering, Science Undergraduate Research Fellowship, \$1500, August 2016 –December 2016).
26. Effect of organic acids on calcium phosphate nucleation and osteogenic differentiation of human mesenchymal stem cells on peptide functionalized nanofiber (Marin Filipowski, Biomedical Engineering, Science Undergraduate Research Fellowship, \$1500, October 1, 2016 – June 30, 2017).
27. Hydrogels for Drug Delivery - Release Study of BSA (Caitlin Heiferty, Biomedical Engineering, Capstone Scholars Magellan Apprentice Award, \$1000, December 1, 2017 to November 30, 2018).
28. Degradation of Polymers in Marine Environments (Logan Radford, Biomedical Engineering, Mini-Grant Magellan Award, \$800, May 1, 2020 to December 31, 2020).
29. Treating Hypertension with Transdermally Absorbed Herbal Medicine From Biofunctional Fabrics (Jared Dawson, School of Public Health, Mini-Grant Magellan Award, \$1000, February 2021 to August 31, 2021).

## **RESEARCH SUPERVISION AND MENTORSHIP**

### **I. Recognition for student mentoring**

- 2017 James R. Durig Travel Award to Safaa Kader (PhD student) from the Chemistry Department to present his paper titled "Synchronized Vascularization-Osteogenesis using Enzymatically

- Responsive Nanoparticle” at the Annual Americas Conference of the Tissue Engineering & Regenerative Medicine Society in Charlotte, NC.
- 2017 First Place Written Paper Award to Faisal Lachab (High School Student from South Carolina Governor’s School for Science and Mathematics), “Rapid Prototyping of Compact Bone Osteons”, South Carolina Junior Academy of Science, March 25, 2017 (10 AM).
- 2015 Second Place Winner to Samuel Keeney (Undergraduate Biomedical Engineering Student), “Effects of IKLLI peptide on breast cancer stem cells maintenance and tumorsphere formation within PEGDA hydrogel,” Discovery Day, Biology & Biomedical Sciences A, University of South Carolina, April 24, 2015.
- 2014 International Spotlight, Seyedsina Moeinzadeh, University of South Carolina (highest recognition to an international student on the university)
- 2013 First Place Winner to John Sieracke (Undergraduate Biomedical Engineering Student), “Synthesis and characterization of hydrolytically degradable polyethylene glycol hydrogels for use in tissue engineering,” Discovery Day, Biology & Biomedical Sciences II Session, University of South Carolina, April 26, 2013.
- 2011 First Place Winner to Richard Doe (Undergraduate Student), “Synthesis and characterization of functional self-assembling nanoparticles,” Discovery Day, University of South Carolina, April 22, 2011.
- 2011 Excellence in Research Award to Junyu Ma (doctoral student), Department of Chemical Engineering, University of South Carolina, April 11, 2011.
- 2010 One of the finalists (Angel E. Mercado) for Bionanotechnology Graduate Student Research Award, 2010 AIChE Annual Meeting, Salt Lake City, UT, November 10, 2010, Grand Ballroom A, Hilton, 5:08 PM.
- 2010 Excellence in Research Award to Angel E. Mercado (doctoral student), Department of Chemical Engineering, University of South Carolina, March 17, 2010.
- 2010 Magellan Undergraduate Research award to Chemistry UG Sana Khaliq (Mentor E.Jabbari: *Development and Characterization of a Biodegradable Multichannel Hydrogel for Neurogenic Differentiation of Marrow Stromal Cells*) award by the USC Office of Vice President for Research.
- 2009 Magellan Undergraduate Research award to Biomed Eng UG Ryan Cassaro (Mentor E.Jabbari: *Functional Self-Assembled Poly(Lactide-co-Glycolide Fumarate) Nanoparticles as Carriers for Targeted Tumor Delivery*) award.
- 2008 Magellan Undergraduate Research award to Biomed Eng UG Sowjanya Kadali (Mentor E.Jabbari: *Engineered Nanoparticles for Targeted Tumor Delivery*) award.
- 2008 Student Travel Achievement Recognition (STAR) Award to Junyu Ma (doctoral student) by Society for Biomaterials, *BMP-2 Peptide Grafted to a Degradable Substrate Enhances Osteogenic Differentiation of Stromal Cells*, nominated by Orthopaedic Biomaterials Special Interest Group and awarded by the Education and Professional Development Committee of Society for Biomaterials, Translational Biomaterial Research Symposium, Atlanta, GA, Saturday Sep 13, 2008 2:30-4:00 PM.
- 2008 First place research award to Angel E. Mercado (doctoral student) at the Third Annual South East Alliance for Graduate Education and the Professoriate (SEAGEP), *Release Behavior of Paclitaxel from Self-Assembled Degradable Nanoparticles*, May 13, 2008, Univ. of Florida, Gainesville, FL.
- 2007 Graduate Research Fellowship award to Junyu Ma (doctoral student) by USC Graduate School.
- 2006 Magellan Undergraduate Research award to Chemical Eng UG Kevin Yeh (Mentor E.Jabbari: *Targetted Delivery to Tumor Cells with Taxol-Entrapped Nanospheres*) award.

**II. Visiting scholars**

1. Azadeh Sepahvandi, Visiting post-doctoral scientist, Amirkabir University, "Nanomaterials for targeting to cancer stem cells," December 2017 – present.
2. Ali Farzin, Visiting Doctoral Fellow, University of Isfahan, "Synthesis and characterization of magnetically susceptible hardystonite scaffolds for bone tissue engineering," May 2017 – October 2017.
3. Nasser Arsalani, Visiting Scholar, University of Tabriz, Synthesis of monodispersed silica nanoparticles for cancer drug delivery," May 2017 – October 2017.
4. Mehri Monavarian, Visiting Research Associate, Shiraz University of Medical Sciences, "Encapsulation of keratinocytes in keratin hydrogels for skin wound healing," October 1, 2016 – Present.
5. Noor Saeed Khan Khattak, Visiting Doctoral Fellow, National Center for Excellence in Physical Chemistry, University of Peshawar, "Synthesis and Characterization of keratin hydrogels reinforced with functionalized carbon nanotube," September 1, 2016 – February 1, 2017.
6. Murlidhar Pandey, Visiting Junior Undergraduate Scholar, Department of Biotechnology, National Institute of Technology Warangal, "Synthesis and characterization of chitosan matrices for encapsulation of mesenchymal stem cells," May 2016 - August 2016.
7. Mehran Miroliaei, Visiting Scholar, University of Isfahan, "Computational and experimental investigation of drug attachment and transportation in lipid binding proteins for in vivo controlled release of low molecular weight drugs," January 2016 – August 2016.
8. Ali Akbari, Visiting Research Associate, Tabriz University, "Polyhedral Oligomeric Silsesquioxane (POSS) nanohybrid polymers as a platform for targeted agent delivery in cancer therapy," September 2015 – March 2016.
9. Hadi Shirali, Visiting Research Associate, Amirkabir Institute of Technology, "Synthesis of poly(butylene succinate-co-ethylene terephthalate) nanofiber scaffolds", July 2015 - March 2016.
10. Sogol Naghavi Sheikholeslami, Visiting Research Associate, Amirkabir Institute of Technology, "Characterization of calcium phosphate nucleated poly(butylene succinate-co-ethylene terephthalate) nanofibers," July 2015 – March 2016.
11. Amir Salati, Visiting Research Associate, National Institute of Engineering and Biotechnology, "Synthesis of biologically inspired highly elastic polyethylene glycol hydrogels," August 2014 - July 2015.
12. Seyed-Ramin Pajoum-Shariati, Visiting Assistant Professor, Department of Chemical Engineering, Shahid Beheshti University, "Hierarchically structured biomaterials," February 2014 – December 2014.
13. Nadeem Siddiqui, Visiting Associate Researcher, National Institute of Technology, Rourkela, India, Synthesis and characterization of hydroxy acid chain-extended poly ethylene glycol and chitosan hydrogels," July 2013 - September 2013.
14. Tahereh Karimi, Visiting Scholar from Royan Research Institute, Shiraz, Iran, Effect of Mesenchymal stem cell-matrix interactions on intracellular signaling pathways leading to the expression of osteogenic genes and mineralization," April 2013 – August 2013.
15. Mohammad Sadeghi, visiting scholar from Freie Universitat Berlin, Berlin, Germany, "Synthesis of novel POSS crosslinked hydrogels for biomedical applications," January 2103 - April 2013.
16. Saied Nouri-Khorasani, visiting professor from Isfahan University of Technology, Isfahan, Iran, "Synthesis and processing of novel in-situ crosslinkable macromers as bone cement," January 2009- August 2009.

**III. Medical residents**

1. Carlos D. Kugler, 2005-2008, "Osteoinductive injectable poly(lactide fumarate) for healing of segmental bone defects," Department of Orthopedic Surgery, School of Medicine, University of South Carolina.

**IV. Post-doctoral research fellows**

8. Seyedsina Moeinzadeh, "Role of physical, chemical, and biochemical factors in zonal lineage commitments of human mesenchymal stem cells in articular cartilage regeneration," January 2015 – present.
7. Angel E. Mercado, "4T1 breast tumor cell response to self-assembled cell penetrating nanoparticles," August 2010 – 2011.
6. Xiaoming Yang, "Toxicity of V6K2-PLGA nanoparticles for tumor delivery," April 2010 – Present (part-time).
5. Valarmathi Mani Thiruvanamalai, "Differentiation and mineralization of bone marrow stromal cells on biomimetic scaffolds", May 15, 2006 – March 21, 2007.
4. Saeid Kheirandish, "Gelation kinetics of biodegradable in-situ crosslinkable PLEOF hydrogels", January 5, 2006 to February 23, 2006.
3. Ali S. Sarvestani, "Modeling and characterization of biodegradable polymer nano-composite scaffolds for tissue engineering applications", September 10, 2005 July 1, 2008.
2. Xuezhong He, "Synthesis and characterization of hydrogels with enzymatically degradable peptide sequences as scaffolds for regeneration of skeletal tissues", March 1, 2005 to Present.
1. K. Prasanna U. Perera, "Synthesis and Characterization of poly(lactic acid fumarate) as an injectable in situ crosslinkable scaffold for guided bone regeneration", December 10, 2004 to May 3, 2005.

**V. Doctoral students**

9. Ricky Dash, Zonal Layer-by-Layer Regeneration of Articular Cartilage, Department of Chemical Engineering, University of South Carolina, January 1, 2021.
8. Safaa Kader, "Enzymatically cleavable therapeutic nanostructures for growth factor delivery to stem cells," Chemistry and Biochemistry Department, University of South Carolina, May 2015 – Present.
7. Ozan Karaman, "Fabrication of 3D nanofiber scaffolds with cell-adhesive RGD peptide density gradient," Biomedical Engineering, University of South Carolina, August 2010 - June 2014. (graduated May 2014)
6. Samaneh Kamali, "Synthesis and characterization of nanofiber scaffolds with well-defined pore geometry for bone tissue engineering," August 2010 – June 2014. (graduated August 2014)
5. Danial Barati, "Osteogenic differentiation of mesenchymal stem cells in layered hydroxyapatite nanocomposites," August 2010 – December 2016.
4. Seyedsina Moeinzadeh, "Osteogenic and vasculogenic characterization of marrow stromal cells on crosslinked poly(lactide-co-ethylene oxide) scaffolds," August 2009 to December 2014. (graduated December 2014).
3. Junyu Ma, "Tissue engineered bone regeneration in biodegradable osteoinductive PLEOF hydrogel scaffolds," Chemical Engineering, University of South Carolina, August 2006 to April 2011 (graduated 4/6/2011).
2. Angel Mercado, "Functional self-assembled poly (l-lactide) nanoparticles for targeted delivery of bioactive agents," Chemical Engineering, University of South Carolina, August 2006 to June 2010 (graduated 6/29/2010).
1. Weijie Xu, "Development of fiber-reinforced laminated nanocomposites for bone regeneration," Chemical Engineering, University of South Carolina, June 2006 to June 2009 (graduated 6/8/2009).

**VI. Master students**University of South Carolina (USA)

4. Cody Buffkin, Effect of hypoxic conditions on the maintenance of cancer stem cells, Biomedical Engineering, University of South Carolina, August 2015 to Present.
3. Leily Daneshian, Engineered hydrogel culture system for studying cancer stem cell mechanotransduction, Biomedical Engineering, University of South Carolina, 2013-2015, graduated December 2015.
2. Ozan Karaman, "A novel technique for fabricating aligned nanofibers by using solution electrospinning," Biomedical Engineering, University of South Carolina, defended and graduated December 2009, graduated December 2009.
1. Jianping Wu, Synthesis and characterization of injectable star-shaped poly(lactide-co-glycolide-co-acrylate) macromers, Biomedical Engineering, defended and graduated November 2009, graduated December 2009.

Tehran Polytechnic (Tehran, Iran)

20. Ali Shabani, 1999-2002, "Synthesis and characterization of novel glass ionomer cements based on acrylic acid and cis-itaconic acid," Biomedical Engineering Department, Tehran Polytechnic.
19. Ashkan Tavasoli, 1998-2001, "Study of the effect of modulus, fiber orientation, and plate geometry for replacing conventional metallic orthopedic plates with composites using finite element method," Biomedical Engineering Department, Tehran Polytechnic.
18. Hamid Mahdavi, 1998-2001, "The effect of polyacrylic acid as a mucoadhesive on the release behavior of albumin from polyvinyl alcohol microparticles prepared by the freezing and thawing process," Biomedical Engineering Department, Tehran Polytechnic.
17. Saeed Karbasi, 1998-2001, "Investigation of mechanical properties and swelling behavior of a composite based on polyvinyl alcohol and polyacrylic acid with hydroxyapatite as an artificial cartilage," Biomedical Engineering Department, Tehran Polytechnic.
16. Ali A'rabi, 1998-2001, "Effect of pH and temperature on bioadhesion of ionic hydrogels to the surface of small intestine in similar biological conditions," Biomedical Engineering Department, Tehran Polytechnic.
15. Saeed Kheirandish, 1998-2001, "Investigation of the effect of hydrogel coating on flowability of biological fluids on silicone polymer surfaces," Biomedical Engineering Department, Tehran Polytechnic.
14. Farhad Farmanzad, 1997-2000, "Design on stress analysis of orthopedic composite fixation plates," Biomedical Engineering Department, Tehran Polytechnic.
13. Ali Sheikholmoluke, 1997-2000, "Theoretical and experimental investigation of protein adsorption on soft contact lens," Biomedical Engineering Department, Tehran Polytechnic.
12. Javad Tavakoli, 1997-2000, "Modeling and measurement of the extent of swelling and deswelling of biocompatible hydrogels in an external electric field," Biomedical Engineering Department, Tehran Polytechnic.
11. Alireza Sadeghi, 1996-1999, "Design and fabrication of an orthopedic plate based on polymeric composites," Biomedical Engineering Department, Tehran Polytechnic.



10. Mohammad Reza Abidian, 1996-1999, "Design of a centrifugally casting device for preparation of hydroxy ethyl methacrylate based soft contact lens," Biomedical Engineering Department, Tehran Polytechnic.
09. Alireza Tolu-Kuroshi, 1996-1999, "Measurement of swelling pressure and degree of swelling of acrylic acid and hydroxy ethyl methacrylate hydrogels in simulated stomach and small intestine environment," Biomedical Engineering Department, Tehran Polytechnic.
08. Mahmood Etemadi, 1996-1999, "Design of a bioadhesion measuring instrument and comparison of bioadhesiveness of poly acrylic acid with poly hydroxy ethyl methacrylate on small intestine," Biomedical Engineering Department, Tehran Polytechnic.
07. Mehrdad Khalili, 1996-1999, "Investigating the effect of strain rate on bioadhesion of acrylic acid hydrogel and small intestine surface," Biomedical Engineering Department, Tehran Polytechnic.
06. Ali JanNesari, 1996-1999, "Study the release of toxic agents in antifouling coatings by means of microencapsulation," Polymer Engineering Department, Tehran Polytechnic.
05. Maziar Khakpour, 1996-1999, "morphology of polyurethane particles prepared by suspension condensation polymerization," Polymer Engineering Department, Tehran Polytechnic.
04. Keyvan Arjomand-Hesabi, 1996-1999, "Monte carlo simulation of branching in emulsion polymerization of dienes," Polymer Engineering Department, Tehran Azad University.
03. Farzad Lahootifard, 1996-1999, "Investigation of the release mechanism of nitroglycerin from a transdermal microreservoir system," Polymer Engineering Department, Tehran Azad University.
02. Haleh Tabatabai, 1996-1999, "Investigation of release mechanism of urea from a natural rubber matrix," Polymer Engineering Department, Tehran Azad University.
01. Hosein Nobari, 1995-1998, "Controlled release of bioactive compounds using starch coating," Polymer Engineering Department, Tehran Polytechnic.

## **VII. Undergraduate students**

74. Nolan Foreman, Mathematical modeling of the growth of human pluripotent cells," Department of Biomedical Engineering, University of South Carolina, Spring 2021 – Summer 2021.
73. Lachab Faisal, Synthetic Bone Engineering: A Comparative Analysis of the Rapid Prototyping of Compact Bone Osteons, Department of Biomedical Engineering, University of South Carolina, Spring 2021 – Summer 2021.
72. Jared Dawson, Assessing Transdermal Absorption of Plant Extracts Embedded in Fabrics, School of Public Health, University of South Carolina, Fall 2020 – Present.
71. Andrew Lofurno, "Structure and properties of Keratin-based biomaterials," Biomedical Engineering, University of South Carolina, October 2019 – Present.
70. Logan Radford, "Accelerated measurement of degradation kinetic of environmentally-friendly plastics," Biomedical Engineering, University of South Carolina, September 2019 – Present.
69. Ashlea R. Brown, "Synthesis and Characterization of Sericin Hydrogels for cell encapsulation," Biomedical Engineering, University of South Carolina, January 2019 – Present.
68. Graham Hulsey, "Synthesis off photo-crosslinkable sericin hydrogels for cell encapsulation," Biomedical Engineering Department, University of South Carolina, September 2018 to May 2019.
67. Charles Morton, "Decellularized digested matrices for culture and expansion of chondrocytes in articular cartilage regeneration," Chemical Engineering, University of South Carolina, January 2019 – Present.

66. Holly Richardson, "Decellularized matrices for culture and expansion of articular cartilage chondrocytes," Biomedical Engineering, University of South Carolina, January 2019 – Present.
65. Caitlin Heilferty, "Synthesis and characterization of Paclitaxel-conjugated POSS nanoparticles with uniform size and distribution, Biomedical Engineering, University of South Carolina, August 2017 – Present.
64. Reilly Carr, "Synthesis of POSS nanoparticles with uniform size and narrow distribution," Biomedical Engineering, University of South Carolina, August 2017 – Present.
63. Blake Martin, "Synthesis of keratin based quantum dots", Biomedical Engineering, University of South Carolina , August 20, 2017 – Present.
62. Jeffrey Rogers, "Synthesis of keratin hydrogels from Turkey feather, Biomedical Engineering, University of South Carolina, January 2, 2017 – Present.
61. Redha BuKhamsin, "Cell responsive nanogels for the delivery of differentiation factors', Biomedical Engineering, University of South Carolina, January 2, 2017 – Present.
60. Marin Filipowski, "Effect of organic acids on calcium phosphate nucleation and osteogenic differentiation of human mesenchymal stem cells on peptide functionalized nanofiber," Biomedical Engineering, University of South Carolina, October 1, 2016 – Present.
59. Abigail Hoenes, "Effect of hypoxia on the growth of breast cancer stem cells," Biomedical Engineering, University of South Carolina, September 2016 - Present.
58. Jacob Anderson, 3D printing of bioresorbable hydrogels, Biomedical Engineering, University of South Carolina, May 2016 - Present.
57. Taylor Johnson, Effect of rosmarinic acid on viability of cancer stem cells, Biomedical Engineering, University of South Carolina, May 2016 – Present.
56. Elizabeth McCourt, Effect of VEGF-BMP2 gradients in a patterned matrix on vasculogenic differentiation of MSC-ECFC co-cultures, Biomedical Engineering, University of South Carolina, April 2016 – Present.
55. Helen Carr, "Effect of VEGF-BMP2 gradients in a patterned hydrogel on osteogenic differentiation of MSC-ECFC co-cultures, Biomedical Engineering, University of South Carolina, April 2016 – Present.
54. Riley Meekins, "Effect of rosmarinic acid on fructose-mediated glycation of hemoglobin," Biomedical Engineering, University of South Carolina, March 2016 – Present.
53. Janay Clytus, "3D Printing of biodegradable hydrogel scaffolds by printing-triple molding," Biomedical Engineering, University of South Carolina, January 2016 – Present.
52. Julianna L. Madigan, "Biomimetic hydrogels for concurrent vascularization and osteogenesis," Biomedical Engineering, University of South Carolina, January 2016 – Present.
51. William Tierney, "Cartilage regeneration based on digested animal cartilage," Biomedical Engineering, University of South Carolina, January 2016 – Present.
50. Colton Kostelnik, Nanogel based growth factor delivery for bone tissue engineering, Biomedical Engineering, University of South Carolina, January 2016 – Present.
49. Jakub Ratkowski, Effect of cell density on articular cartilage regeneration, Biomedical Engineering, University of South Carolina, January 2016 – Present.
48. Delany Thomas, Patterned hydrogels with gradients in osteogenic and vasculogenic growth factors for vascularized osteogenesis, Biomedical Engineering, University of South Carolina, November 2015 – Present.

47. Madeline Riese, Engineered composite hydrogels for coupling osteogenesis and vasculogenesis, Biomedical Engineering, University of South Carolina, November 2015 – Present.
46. Elizabeth Richardson, “Co-culture systems for induction of vascularized osteogenesis,” Biomedical Engineering, University of South Carolina, November 2015 – Present.
45. Elizabeth Hammond, “Synthesis of endoprotease-degradable nanogels for the delivery of bone morphogenetic proteins,” Biomedical Engineering, University of South Carolina, September 2105 – Present.
44. Oyindamola Awe, “Isolation of  $\beta$ -keratin from turkey feather,” Biomedical Engineering, University of South Carolina, January 2015 – Present.
43. Ryan Rubin, “Effect of chelating proteins on calcium phosphate deposition on aligned resorbable nanofibers,” Biomedical Engineering, University of South Carolina, January 2015 – Present.
42. Katie Melink, “Effect of matrix elastic modulus on the growth of cancer stem cells encapsulated in an engineered hydrogel,” Biomedical Engineering, University of South Carolina, January 2015 – Present.
41. Brian Madden, “Processing and commercialization of load-bearing resorbable biomimetic scaffolds for bone regeneration,” Biomedical Engineering, University of South Carolina, January 2015 – Present.
40. Victoria Baldock, “Effect of hypoxic conditions on the growth of breast cancer stem cells,” Biomedical Engineering, University of South Carolina, January 2015 – Present.
39. Ryan Barrs, Measurement and testing of impact strength of cortical-bone-like microtubular matrix,” Biomedical Engineering, University of South Carolina, January 2015 – Present.
38. Joel Keefe, “Fabrication of multi-layer fiber-laden hydrogels to simulate the zonal structure of articular cartilage,” Exercise Science, University of South Carolina, September 2014 – present.
37. Samuel Keeney, “The Effect of peptides on breast cancer stem cells maintenance and tumorsphere formation within PEGDA hydrogel,” Biomedical Engineering, University of South Carolina, September 2014 – present.
36. Weston Grove, “Effect of tartaric acid on the size and shape of calcium phosphate crystals nucleated on aligned nanofibers,” Biomedical Engineering, University of South Carolina, May 15, 2014 to present.
35. Ryan McCormick, “The effect of organic acid additives on mineralization properties of aligned polymer nanofibers, University of South Carolina, May 15, 2014 – present.
34. Adam Richardson, “Effect of tartaric acid on the extent of mineralization on aligned peptide-conjugated nanofibers,” Biomedical Engineering, University of South Carolina, March 1, 2014 – present.
33. Walter Brandsema, “Effect of ascorbic acid (vitamin C) on size of calcium phosphate crystals grown on aligned nanofibers,” University of South Carolina, February 1, 2014 – present.
32. Shawn Patel, “Fabrication of bio-inspired osteon-like structures,” Biomedical Engineering,” University of South Carolina, February 2103 – present.
31. Cody Buffkin, “Synthesis and characterization of hydroxy acid chain-extended polyethylene glycol hydrogels,” Department Biomedical Engineering, University of South Carolina, June 1, 2012 - present.
30. Shubham Patel, “Effect of Citrate on nucleation calcium phosphate crystals on poly(L-lactide) nanofibers,” Biomedical Engineering, University of South Carolina, October 1, 2013 – May 2014.

29. William C. Welsh, Research Assistant, "Effect of engineered hydrogel stiffness on chondrogenic differentiation of human mesenchymal stem cells," Department of Chemical Engineering, University of South Carolina, May 15, 2013 to August 15, 2014.
28. Paige Harris, "Effect of conjugated CD44 binding peptide on maintenance of cancer stem maintenance encapsulated in polyethylene glycol hydrogel," Biomedical Engineering Department, University of South Carolina, January 2013 – May 2014.
27. Joshua Walters, "Differentiation and maturation of marrow stromal cells seeded in an osteon-mimetic scaffold in a perfusion cell culture system," Biomedical Engineering Department, University of South Carolina, November 2012 – August 2014.
26. Ibrahim Askar, "Osteogenic differentiation of marrow stromal cells in cortical-bone-like microtubular structures," Biomedical Engineering Department, University of South Carolina, January 2013 – May 2014.
25. John Sieracke, "Generation of 3D macroporous aligned electrospun fibers," Biomedical Engineering Department, University of South Carolina, February 2012 – May 2013.
24. Olivia Tran, "Synthesis and gelation of star poly(dioxanone-ethylene glycol) acrylate macromonomers," Biomedical Engineering Department, University of South Carolina, September 2011 – May 2012.
23. Purva Choudhari, "Effect of fibronectin derived integrin binding peptide on maintenance of 4T1 tumor stem cells in a 3D matrix," Biomedical Engineering Department, University of South Carolina, August 2011- May 2013.
22. Pooja Choudhari, "Effect of CD44 binding peptide on maintenance of 4T1 tumor stem cells in a 3D matrix," Biomedical Engineering Department, University of South Carolina, August 2011- May 2013.
21. Kaushal Vadhar, "Derivatization of PLGEOF macromer for tissue engineering applications," Biomedical Engineering Department, University of South Carolina, August 2011- May 2012.
20. George Plasko, "Synthesis and analysis of peptide-polymer nanoparticles," Biomedical Engineering Department, University of South Carolina, September 2010 – May 2013.
19. Ethan Hart, "Self-assembled tumor penetrating nanoparticles," Biomedical Engineering Department, University of South Carolina, November 2010 – May 2011.
18. Alek Wagner, "Macroporous nanofiber scaffolds with well-defined pore geometry," Biomedical Engineering Department, University of South Carolina, October 2010 – May 2011.
17. Richard Doe, "Integrin-binding nanoparticles for targeted tumor delivery," Biomedical Engineering Department, University of South Carolina, May 2010 – May 2012. (minority student)
16. Ankur Kumar, "Synthesis and characterization of nanofiber scaffolds with well-defined macropore geometry. Integrin binding nanoparticles for targeted tumor delivery," Chemical Engineering Department, University of South Carolina, April 2010 to May 2012.
15. Romel Menacho-Melgar, "Peptidomimetic self-assembled poly(L-lactide) nanoparticles for targeted delivery of antitumor agents," Biomedical Engineering Department, University of South Carolina, September 2009 – May 2011.
14. Joseph Jordan III, "Synthesis and assembly of bi-conjugated CV6K2-PLGF Macromer," Biomedical Engineering, University of South Carolina, September 1 2009 – May 2010.
13. Sana Khaliq, "Role of marrow-derived mesenchymal stem cells in spinal cord regeneration", Chemistry Department, University of South Carolina, May 2009 – May 2011.

12. Ryan Cassaro, "Functional self-assembled poly(lactide-co-glycolide fumarate) nanoparticles as carriers for targeted tumor delivery", Biomedical Engineering, University of South Carolina, November 2008 – May 2010.
11. Sowjanya Kadali, "Enzymatically activated tumor delivery, USC Biomedical Engineering, September 2008 to May 2011.
10. Kevin Yeh, "Targeted delivery to tumor cells with taxol-entrapped nanospheres", USC Chemical Engineering, August 2006 - May 1, 2008.
9. David Farr, "Isolation and characterization of bone marrow stromal cells", USC Medical School, May 15, 2006 - August 1, 2006.
8. Isaiah Davis, "Cell viability of poly(lactide-ethylene oxide-fumarate) terpolymers", USC Chemical Engineering, January 5, 2006 to May 1, 2008. (minority student)
7. Caitlin Molloy, "In vitro Comparison of marrow stromal cells with umbilical cord stem cells on vascularization and mineralization of tissue engineered scaffolds", USC Chemical Engineering, October 1, 2005 to May 1, 2006.
6. Steven Sheibani, "Taxol-entrapped self-assembled nanospheres as a delivery system to aid in the treatment of cancer", USC Chemical Engineering, September 1, 2005 to May 1, 2006.
5. Jacob Riis, "Isolation and characterization of multi-lineage progenitor cells from the bone marrow of rat", USC Medical School, January 2006 to May 2007.
4. Alan A. Henderson, "Isolation and characterization of stromal cells from the bone marrow of rat", Medical College of Charleston, May 2005 to August, 2005.
3. Jessica Jaeger, "Cytocompatibility of injectable poly(l-lactide-co-ethylene oxide-co-fumarate) hydrogel for encapsulation of marrow stromal cells", USC Biology, May 2005 to August 2005.
2. Deanna Canay Norris, "Preparation and degradation characteristics of thin poly(lactic acid fumarate) films by spin casting", USC Chemical Engineering, October 2004 to May 2005. (minority student)
1. Paul Andrew Pepin, "Synthesis and characterization of poly(lactic acid fumarate)", USC Chemical Engineering, January 2005 to May 2005.

#### **VIII. Summer Research Experience for Undergraduates (REU)**

21. Candace Ballentine, Effect of hypoxia on cancer stem cells, Clemson University-University of South Carolina, May 25, 2016 – July 31, 2016.
20. Jamie Crawford, Bioprinting mesenchymal stem cells with polyethylene glycol based inks, Furman University – University of South Carolina, May 31, 2015 – August 31, 2015.
19. William C. Molair, "Synthesis and characterization of keratin-based hydrogels, "Biomedical Engineering Department, University of South Carolina, May 15, 2015 – August 15, 2015.
18. Stephen Fediw, "Nanofiber electrospinning of keratin isolated from chicken feather," Biomedical Engineering Department, University of South Carolina, May 15, 2015 – August 15, 2015.
17. Jill der Outer, "Characterization of keratin isolated from chicken feather," Biomedical Engineering Department, University of South Carolina, May 15, 2015 – August 15, 2015.
16. Gaurav Bhat, Visiting Research Assistant from Duke University, "Cell encapsulation and printability of hydroxy acid chain-extended polyethylene glycol hydrogels for organ printing," May 15, 2013 to August 15, 2013.

15. Sarah White, "Effect of CD44 peptide on maintenance of breast cancer stem cells in a 3D in vitro culture system," Department Chemical Engineering, University of South Carolina, June 1, 2012 to August 1, 2012.
14. Leah Pruzinsky, "Targeted Delivery of Chemotherapy Drugs to Tumor Cells," Department of Biomedical Engineering, University of Connecticut, June 1, 2011 to August 1, 2011.
13. Matthew Getzin, "Engineering bone formation in multi-functional nanocomposite scaffolds," Chemical Engineering Department, University of South Carolina, June 1, 2010 - August 1, 2010.
12. Sharon Keren, "Synthesis and self-assembly of mono-conjugated CV6K2-PLGF macromer," Biomedical Engineering, University of South Carolina, June 1 2009 - August 1 2009.
11. Mohammad Chowdry, "Fabrication of multi-channel scaffolds for spinal cord regeneration," Medical University of South Carolina, June 1, 2009 to August 1, 2009.
10. Sudeep Sunthakar, "Synthesis of star Lactide-glycolide-co-acrylate macromer," North Carolina State University, June 1, 2009 to August 1, 2009.
9. Idalys Reyes Hernandez, "Release characteristics of Doxorubicin from peptidomimetic nanoparticles," University of Puerto Rico, Mayaguez campus, June 1, 2009 to August 1, 2009. (minority student)
8. Elizabeth Savage, "Targeted Tumor Delivery", Clemson University Chemical Engineering, June 1, 2008 to August 1, 2008.
7. Jamario C. White, "Shape-Specific Nano Composites", South Carolina State University Engineering, May 1, 2008 to August 1, 2008. (minority student)
6. Jeremy Greeter, "Mechanical Properties of Bionanocomposites for Bone regeneration", University of Florida Mechanical Engineering, May 1, 2007 to August 1, 2007.
5. Rocco Panella, "Biomimetic Nano Composites for Bone regeneration", Penn State University Chemical Engineering, NSF REU Student, May 1, 2007 to August 1, 2007.
4. Jordan S. Carter, "Fabrication of Biomimetic Degradable Crosslinked Nano-Fibers by Electrospinning", Lehigh University Chemical Engineering, NSF REU Student, May 1, 2006 to August 1, 2006.
3. Efe Sahinoglu, "Self-Assembly and targeted Delivery of PLEOF Nanoparticle Formation To Tumor Cells", Auburn University Chemical Engineering, NSF REU Student, May 1, 2006 to August 1, 2006.
2. Carrie A. Farberow, "Bimodally degradable hydrogels as a carrier for stem cells in cartilage regeneration", University of Oklahoma Chemical Engineering, summer 2005 REU students, May 1, 2005 to August 1, 2005.
1. Michael Pettinella, "Biomimetic nano composites for bone regeneration", University of Villanova Chemical Engineering, summer 2005 REU student, May 1, 2005 to August 1, 2005.

#### **VIII. Senior Design Projects for Undergraduate Students**

1. C. Milner, C. Molten, P. Purohit, S. Thomas, "Bioresorbable rib fixation system," Biomedical Engineering Department, University of South Carolina, January 8 – April 29, 2015.

#### **IX. Summer Research Experience for High-School Student (REU)**

7. Jason Occilien, Synthesis of monodisperse silica nanoparticles for targeted cancer drug delivery, South Carolina Governor's School for Science and Mathematics, June 1 – July 31, 2017.
6. Faisal Lachab, Rapid prototyping of compact bone osteons, South Carolina Governor's School for Science and Mathematics, June 1 – July 31, 2016.

5. Amanda Steel, Effect of Hypoxia on maintenance and expression profile of MDA-MB-231 human breast cancer stem cells, South Carolina Governor's School for Science and Mathematics, June 1 - July 31, 2015.
4. Prem Chockalingam, "Synthesis of vasculoinductive hydrogels," Hammond School, Columbia, South Carolina, June 10, 2014 to July 31, 2014.
3. Ayan Dasgupta, "Synthesis of enzymatically degradable nanogels in regenerative medicine," Hammond School, Columbia, South Carolina, June 1, 2014 to July 31, 2014.
2. Sarah Lee, Synthesis and testing of biomass-based carbon aerogels as super-capacitors, Spring Valley High School, Columbia, South Carolina, June 1, 2013 to July 31, 2013.
1. Peter McWilliams, "Synthesis of glutamic acid functionalized PLGA nanofibers," Hammond School, May 15 2012 to August 1, 2012.

### **TEACHING**

3. Department of Chemical and Biomedical Engineering, University of South Carolina (2004-Present)
  - Graduate Courses:
    - Advanced Tissue Engineering (ECHE 789J)
  - Undergraduate Courses
    - Mass Transfer (ECHE 322)
    - Chemical Engineering Process Principles (ECHE 300)
    - Transport in Biological Systems (BMEN 354)
    - Tissue Engineering (BMEN 572)
    - Introduction to Biomaterials (BMEN 271)
2. Department of Biomedical Engineering, School of Medicine, Mayo Clinic (2003-4)
  - Graduate Courses:
    - Introduction to Biomedical Engineering (BME 5000)
    - Concepts in Biomedical Engineering (BME 6750)
1. Department of Bioengineering, Rice University (2001-2)
  - Graduate Courses:
    - Hydrogels and their applications in biomedical engineering (BIOE 532)

### **PATENTS**

1. Esmail Jabbari, Digested Decellularized Tissue as Microcarrier for Cell Culture and Expansion, July 3, 2018.
2. Esmail Jabbari: Composition for In Situ Zonal Regeneration of Articular Cartilage, Docket#: USC-557-P (1259), March 5, 2017.
3. Esmail Jabbari: Engineered matrix for enriching malignant cancer stem cells, University of South Carolina, Docket# 01067 PPA 01, Filed 10/23/2013, U.S. Appl. No: 61/962057, US patent allowed, US patent issued 3-12-2019, Patent No. 10,227,566.
4. Esmail Jabbari: Nanostructure formation in polyethylene glycol hydrogels chain extended with short hydroxy acid segments, University of South Carolina, Docket # 01012 PPA 02, Filed 4/24/2013; serial no. 61/854,439.
5. Esmail Jabbari, Three-dimensional matrix for cancer stem cells, University of South Carolina, Application No: 14/527,028, Filing date: 10/29/2014, Ref. No: USC-457 (1067), Patent No. 10494610.

6. Esmail Jabbari, Bone tissue mimetic biomaterials, University of South Carolina, Application No: 14/260,442, Filed April 24, 2014, Ref. No: USC-407 (1013), Patent No: 9,314,549 B2.
7. Esmail Jabbari, Biom mineralization promoting materials, University of South Carolina, Application No: 14/260442, Filed 04/24/2014, Ref. No: USC-407 (1013), Patent No: 9,808,555 B2.
8. 2. Esmail Jabbari: Gelation characteristics and osteogenic differentiation of stromal cells in inert hydrolytically degradable micellar polyethylene glycol hydrogels, University of South Carolina, Docket # 01012 PPA 01, Filed 4/24/2013; serial no. 61/854,438.
9. Esmail Jabbari: Effect of surface modification of nanofibers with glutamic acid peptide on calcium phosphate nucleation and osteogenic differentiation of marrow stromal cells, University of South Carolina, Docket # 01013 PPA 01, Filed 4/24/2013; serial no. 61/854,441.
10. Esmail Jabbari: Osteogenic differentiation of marrow stromal cells (MSCs) in cortical-bonelike microtubular structures. University of South Carolina, Docket # 01013 PPA 02, Filed 4/24/2013; serial no. 61/854,437.
11. Esmail Jabbari: Peptidomimetic Resorbable Peptide-Polymer Hybrid Polyester Nanoparticles. University Of South Carolina Dec, 23 2010: US 20100322979.
12. Esmail Jabbari: Fabrication of Biomimetic Scaffolds with Well-Defined Pore Geometry by Fused Deposition Modeling. University Of South Carolina Apr, 8 2010: US 20100084784.
13. Esmail Jabbari: Fiber-Reinforced Laminated Hydrogel / Hydroxyapatite Nanocomposites. University Of South Carolina Sep, 6 2012: US 20120226295.
14. Esmail Jabbari: Electrospun Fibrous Three-Dimensional Scaffolds with Well-Defined Pore Geometry. University Of South Carolina Dec, 30 2010: US 20100327494.
15. Esmail Jabbari, Self-Assembled Biodegradable Nanoparticles for Medical and Biological Applications, University Of South Carolina Filed October 8, 2009, Issued Apr, 8 2010, US 20100086607.
16. Esmail Jabbari, Macrophage enrichment of cancer stem cells, University of South Carolina, Application No: 16/057,882, Filed August 8, 2018, Ref. No: USC-559 (1261), Publication No: US 2019/0048321 A1.
17. Esmail Jabbari, Enzymatically-cleavable self-assembled nanoparticles for morphogen delivery, University of South Carolina, Application No: 16/811,023, Filed March 6, 2020, Ref. No: USC-622 (1350), Publication No: US 2020/0360295 A1.
18. Esmail Jabbari, Drug delivery system and method for targeting cancer stem cells, University of South Carolina, Application No: 16/057,954, Filed August 8, 2018, Ref. No: USC-563 (1267), Patent No: 10894019.
19. Esmail Jabbari, Drug conjugated nanogels in microcapsule for delayed sustained protein delivery, University of South Carolina, Ref. No: USC-554 (1255), Application No: 15/897,347, Filed February 15, 2018, Received Notice Allowance.
20. Esmail Jabbari, Keratin allyl thioether three-dimensional cell culture system, University of South Carolina, Ref. No: USC-549 (1250), Application No: 15/814,584, Filed November 16, 2017, Received Notice Allowance.
21. Esmail Jabbari, Keratin based hydrogels, University of South Carolina, Application No: 15/814,617, Filed: November 16, 2017, Ref. No: USC-527 (1216), Patent No: 10723774, Issue Date: July 28, 2020.
22. Esmail Jabbari, Bioresorbable composition for repairing skeletal tissue. University of South Carolina, Filed July 12, 2006, Issued April, 30 2009: US 20090110732.



23. Michael J Yaszemski, Bradford L Currier, Esmail Jabbari, Lichun Lu: Hydroxyapatite grafted fumarate based macromers for biodegradable composites. Mayo Foundation for Medical Education and Research Jan, 5 2010: US 7642300.
24. Esmail Jabbari, Michael J Yaszemski, Bradford L Currier, Lichun Lu: Hydrogel Porogens for Fabricating Biodegradable Scaffolds. Mayo Foundation for Medical Education and Research, Filed 8/27/2004, US 20080206308.
25. Michael J Yaszemski, Bradford L Currier, Esmail Jabbari, Lichun Lu: Self-crosslinkable poly(caprolactone fumarate). Mayo Foundation for Medical Education and Research, Filed 6/29/2004, US 20070043202.
26. Michael J Yaszemski, Bradford L Currier, Esmail Jabbari, Lichun Lu: Hydroxyapatite grafted fumarate based macromers for biodegradable composites. Mayo Foundation for Medical Education and Research Oct, Filed 6/29/2004, Issued 1/5/2010, US Patent# 7642300.
27. Michael J Yaszemski, Bradford L Currier, Lichun Lu, Xun Zhu, Esmail Jabbari: Blend, cross-linkable poly(propylene fumarate) for immobilization and controlled drug delivery. Mayo Foundation for Medical Education and Research, Filed 4/25/2003, Issued 4/26/2005, US Patent# 6884432.