DAVID JAMES MOONEY
CURRICULUM VITAE

I. EDUCATION

1987 B.S., University of Wisconsin - Madison
1992 Ph.D., Massachusetts Institute of Technology

II. ACADEMIC POSITIONS

1992-94 Post-doctoral Fellow, Harvard Medical School
1994-98 Assistant Professor, University of Michigan
Department of Biologic & Materials Sciences, Chemical Engineering, and Biomedical Engineering
1998-01 Associate Professor, University of Michigan
2001-04 Professor, University of Michigan
2004-09 Gordon McKay Professor of Bioengineering, Harvard University, School of Engineering and Applied Sciences
2008-11 Associate Dean for Biological and Chemical Engineering and Applied Sciences, School of Engineering and Applied Sciences, Harvard University
2009- Robert P. Pinkas Family Professor of Bioengineering, School of Engineering and Applied Sciences, Harvard University
2009- Core Member, Wyss Institute for Biologically Inspired Engineering at Harvard University
2010- Adjunct Investigator, Diabetes Endocrinology Research Center, Joslin Diabetes Center

III. HONORS AND AWARDS

2018**:** Mid-Career Award, Materials Research Society
2017: National Academy of Inventors (NAI)
2016: Mercator Fellow (DFG; Charite Hospital Berlin)
2015: International ICMS Chair in Biology, Eindhoven University
2014: Capers and Marion McDonald Award for Excellence in Mentoring and Advising (Harvard University)
2013: Institute of Medicine of the National Academies (IOM)
2013: Everett Mendelsohn Excellence in Mentoring Award (Harvard Graduate Student Council)
2012: Phi Beta Kappa Prize for Excellence in Teaching (Harvard College)
2012: International Fellow Award, TERMIS (Tissue Engineering & Regenerative Medicine Intl Society)
2012: Petit Institute Distinguished Lecture (Georgia Institute of Technology)
2012: Two Genes Memorial Lecture (Northwestern University)
2011: 33rd ranked Material Scientist in the World (Essential Science Indicators^{SM} from Thomson Reuters, January 1, 2000 – October 31, 2010.)
2011: Einstein Visiting Fellow, Einstein Foundation-Berlin (Germany)
2011: Senior Scientist Award, Tissue Engineering & Regenerative Medicine Society (TERMIS)
2011: Ford Lecture, Case Western University
2010: National Academy of Engineering (NAE)
2010: Plenary Lecture POLY/PMSE Awards Banquet (American Chemical Society)
2009: Nature Biotechnology SciCafe Award for Outstanding Research Achievement
2008: Clemson Award, Society for Biomaterials

2007: International Assoc. Dental Research Isaac Schour Memorial Award.
2007: Harry G. Fair Lecturer, University of Oklahoma
2007: William J. Giess Award: IADR/AADR
2006: Distinguished Lecturer, Institute for Medicine & Engineering, University of Pennsylvania
2005: William J. Giess Award: IADR/AADR
2004: MERIT Award NIH/NIDCR
2004: Hunter Visiting Professor and Lecturer, Clemson University
2003: William J. Giess Award, International and American Association for Dental Research
2003: Faculty Recognition Award (University of Michigan)
2002: Fellow, American Institute of Medical and Biological Engineering
2001: Outstanding manuscript, Journal of Dental Education
1999: U. Michigan Dental School Excellence in Research
1998: U. Michigan Chemical Eng. Dept. Excellence in Research
1996: National Institutes of Health FIRST Award
1995: National Science Foundation CAREER Award

IV. PROFESSIONAL SOCIETY MEMBERSHIP AND SERVICE

- Vice-Chair and Chair, Section 2 (Bioengineering), National Academy of Engineering (2017-2020)
- Committees at NAE/NAM: National Academies' Panel Meeting at the Army Research Laboratory; The National Academies of Sciences, Engineering, and Medicine new Intelligence Science and Technology Experts Group (ISTEG); Committee on Human Rights at the Academies. (2016-2018)
- Chair, College of Fellows, American Institute for Biological and Medical Engineering (AIMBE) (2013)
- Program Development Committee, Materials Research Society (2011-)
- Member: Tissue Engineering and Regenerative Medicine Intl. Society, Materials Research Society, Biomedical Engineering Society, American Association for Dental Research, Society for Biomaterials, American Institute of Chemical Engineers, North American Vascular Biology Organization
- Editorial Boards, Tissue Engineering (1995-2010) (Executive Editorial Board 2006-2010), J. Dental Res. (1999-2002; 2006-2009), Pharmaceutical Research (2005-), J. Biomed. Mater. Res. (2007-) (Assistant Editor 2009-), Biotechnology Progress (2007-), Biomacromolecules (2015-)
- Industrial Scientific Advisory Boards: Reprogenesis (1994-2000), Selective Genetics (1998-2000), Desmos (1999), Artecel (2000-2002), Dentigenix (2002-2006), Gel-Del (2002-), Neural Interventions (2004-2006), Dow Corning Corp. (2004-2016), BD Corp. (2005-2007), InCytu (2007-2010), Samyang Corp. (2008-), Connective Orthopedics (2008-2011), Organova (2008-2013), Synthes (2011-2014), Miromatrix Medical Inc. (2011-2018), AgNovos (2016-), 3D Biolabs (2018-), IVIVA Medical (2018-)
- Academic External Advisory Boards: Stichting BioMedical Materials (2009-2012), Department of Biomedical Engineering at Tufts University (2010-), Department of Biomedical Engineering at Carnegie Mellon University (2011-), Whitaker College, MIT (2010-2016), Department of Chemical and Biomolecular Engineering at University of Wisconsin (2015-), Center for Biomaterials, KIST (2015-), Rongxiang Xu, MD Center for Regenerative Therapeutics at BIDMC (2017-)

- Vice-Chair and Chair, American Institute of Chemical Engineering Area 8b (Biomaterials 1994-1998)
- Chair, American Institute of Chemical Engineering Area 15d/e (Engineering fundamental in life sciences) (2003-04)
- Director, Materials Engineering and Sciences Division – American Institute of Chemical Engineers (1999–2002)
- Founding member, Scientific Director (1996-2000), and Board of Governors (2000-2010) Tissue Engineering and Regenerative Medicine Society (TERMIS)
- Chair of Program Committee for 2000 Tissue Engineering Society International Meeting (December 2000; Orlando, FL)
- Editorial advisory board, R.G. Landes and Academic Press: Tissue engineering intelligence unit (1995-)
- Organized Symposia at the following national meetings: *Biomaterials* at the Annual AIChE meeting (1996); *Cells at Interfaces* at the spring 1997 National ACS Meeting: *Bioartificial Tissues* at the Summer Bioengineering Conference (1997); *Biomaterials, Carriers for drug delivery and tissue engineering*. Topical Conference held at Annual AIChE meeting (1997); *Biomaterials regulating cell function and tissue development*. MRS Spring Meeting (1998). Organizer for Functional Tissue Engineering workshop (Sept. 2000; Tampa FL). *Immunoengineering Roundtable Discission: Gaps, Challenges and a Path Forward,* SFB Annual Meeting (2018)
- Vice-Chair and Chair: Gordon conference on Signal Transduction through Engineered Extracellular Matrices (2002, 2004)
- Co-chair, Keystone Symposium on Stem Cells (2003).
- Scientific Advisory Board, Conferences on Orthodontic Advances in Science and Technology (2003-2004).
- Meeting Chair, 2007 Fall Meeting of the Material Research Society.

V. PUBLICATIONS

A. Published articles in scientific journals (reverse order)

1. Peer-reviewed research articles

1. Darnell M, O'Neil A, Mao A, Gu L, Rubin LL, Mooney DJ. Material microenvironmental properties couple to induce distinct transcriptional programs in mammalian stem cells. **Proc Natl Acad Sci** U S A. 2018 Aug 17. pii: 201802568. doi:10.1073/pnas.1802568115.
2. Wang H, Mooney DJ. Biomaterial-assisted targeted modulation of immune cells in cancer treatment. **Nat Mater**. 2018 Sep;17(9):761-772. doi: 10.1038/s41563-018-0147-9.
3. Lueckgen A, Garske DS, Ellinghaus A, Desai RM, Stafford AG, Mooney DJ, Duda GN, Cipitria A. Hydrolytically-degradable click-crosslinked alginate hydrogels. **Biomaterials**. 2018 Oct;181:189-198. doi: 10.1016
4. Kwee BJ, Budina E, Najibi AJ, Mooney DJ. CD4 T-cells regulate angiogenesis and myogenesis. **Biomaterials**. 2018 Sep;178:109-121. doi: 10.1016
5. Brudno Y, Pezone MJ, Snyder TK, Uzun O, Moody CT, Aizenberg M, Mooney DJ. Replenishable drug depot to combat post-resection cancer recurrence. **Biomaterials**. 2018 Sep;178:373-382. doi: 10.1016
6. Horvath MA, Varela CE, Dolan EB, Whyte W, Monahan DS, Payne CJ, Wamala IA, Vasilyev NV, Pigula FA, Mooney DJ, Walsh CJ, Duffy GP, Roche ET. Towards

Alternative Approaches for Coupling of a Soft Robotic Sleeve to the Heart. **Ann Biomed Eng.** 2018 May 15. doi: 10.1007

7. van der Valk DC, van der Ven CFT, Blaser MC, Grolman JM, Wu PJ, Fenton OS, Lee LH, Tibbitt MW, Andresen JL, Wen JR, Ha AH, Buffolo F, van Mil A, Bouten CVC, Body SC, Mooney DJ, Sluijter JPG, Aikawa M, Hjortnaes J, Langer R, Aikawa E. Engineering a 3D-Bioprinted Model of Human Heart Valve Disease Using Nanoindentation-Based Biomechanics. **Nanomaterials** (Basel). 2018 May 3;8(5). pii: E296. doi: 10.3390/nano8050296.
8. Li J, Weber E, Guth-Gundel S, Schuleit M, Kuttler A, Halleux C, Accart N, Doelemeyer A, Basler A, Tigani B, Wuersch K, Fornaro M, Kneissel M, Stafford A, Freedman BR, Mooney DJ., Tough Composite Hydrogels with High Loading and Local Release of Biological Drugs, **Adv Healthc Mater**. 2018 May;7(9):e1701393. doi: 10.1002/adhm.201701393. PMCID: PMC Journal-in process
9. Vidovic-Zdrilic I, Vining KH, Vijaykumar A, Kalajzic I, Mooney DJ, Mina M., FGF2 Enhances Odontoblast Differentiation by αSMA+ Progenitors In Vivo, **J Dent Res**. 2018 Apr 1:22034518769827. doi: 10.1177/0022034518769827.
10. Chen Y, Cordero JM, Wang H, Franke D, Achorn OB, Freyria FS, Coropceanu I, Wei H, Chen O, Mooney DJ, Bawendi MG., A Ligand System for the Flexible Functionalization of Quantum Dots via Click Chemistry, **Angew Chem Int Ed Engl**. 2018 Apr 16;57(17):4652-4656. doi: 10.1002/anie.201801113.
11. Alonso-Nocelo M, Raimondo TM, Vining KH, López-López R, de la Fuente M, Mooney DJ., Matrix stiffness and tumor-associated macrophages modulate epithelial to mesenchymal transition of human adenocarcinoma cells, **Biofabrication**. 2018 Mar 28;10(3):035004. doi: 10.1088/1758-5090/aaafbc. PMCID: PMC5904839
12. Leiendecker MT, Licht CJ, Borghs J, Mooney DJ, Zimmermann M, Böker A., Physical Polyurethane Hydrogels via Charge Shielding through Acids or Salts, **Macromol Rapid Commun.** 2018 Apr;39(7):e1700711. doi: 10.1002/marc.201700711.
13. Li AW, Sobral MC, Badrinath S, Choi Y, Graveline A, Stafford AG, Weaver JC, Dellacherie MO, Shih TY, Ali OA, Kim J, Wucherpfennig KW, Mooney DJ., A facile approach to enhance antigen response for personalized cancer vaccination, **Nat Mater.** 2018 Mar 5. doi: 10.1038/s41563-018-0028-2.
14. Zhang L, Chen K, Zhang H, Pang B, Choi CH, Mao AS, Liao H, Utech S, Mooney DJ, Wang H, Weitz DA., Microfluidic Templated Multicompartment Microgels for 3D Encapsulation and Pairing of Single Cells, **Small.** 2018 Mar;14(9). doi: 10.1002/smll.201702955.
15. Shih TY, Blacklow SO, Li AW, Freedman BR, Bencherif S, Koshy ST, Darnell MC, Mooney DJ., Injectable, Tough Alginate Cryogels as Cancer Vaccines, **Adv Healthc Mater.** 2018 Feb 14. doi: 10.1002/adhm.201701469.
16. Vining KH, Scherba JC, Bever AM, Alexander MR, Celiz AD, Mooney DJ. Synthetic Light-Curable Polymeric Materials Provide a Supportive Niche for Dental Pulp Stem Cells. **Adv Mater.** 2018 Jan;30(4). doi: 10.1002/adma.201704486. PMCID: PMC5788014
17. Darnell M, Mooney DJ. Leveraging advances in biology to design biomaterials **Nat Mater.** 2017 Nov 24;16(12):1178-1185. doi: 10.1038/nmat4991. PMCID: in process
18. Ayala P, Dai E, Hawes M, Liu L, Chaudhuri O, Haller CA, Mooney DJ, Chaikof EL. Evaluation of a bioengineered construct for tissue engineering applications. **J Biomed Mater Res B Appl Biomater.** 2017 Nov 11. doi: 10.1002/jbm.b.34042. PMCID: in process

19. Koshy ST, Zhang DKY, Grolman JM, Stafford AG, Mooney DJ. Injectable nanocomposite cryogels for versatile protein drug delivery. **Acta Biomater.** 2018 Jan;65:36-43. doi: 10.1016/j.actbio.2017.11.024. PMCID: PMC5716876
20. Guo M, Pegoraro AF, Mao A, Zhou EH, Arany PR, Han Y, Burnette DT, Jensen MH, Kasza KE, Moore JR, Mackintosh FC, Fredberg JJ, Mooney DJ, Lippincott-Schwartz J, Weitz DA. Cell volume change through water efflux impacts cell stiffness and stem cell fate. **Proc Natl Acad Sci U S A**. 2017 Oct 10;114(41):E8618-E8627. doi: 10.1073/pnas.1705179114. PMCID: PMC5642688
21. Lee HP, Gu L, Mooney DJ, Levenston ME, Chaudhuri O. Mechanical confinement regulates cartilage matrix formation by chondrocytes. **Nat Mater.** 2017 Dec;16(12):1243-1251. doi: 10.1038/nmat4993.. PMCID: PMC5701824
22. Anderson EM, Silva EA, Hao Y, Martinick KD, Vermillion SA, Stafford AG, Doherty EG, Wang L, Doherty EJ, Grossman PM, Mooney DJ. VEGF and IGF Delivered from Alginate Hydrogels Promote Stable Perfusion Recovery in Ischemic Hind Limbs of Aged Mice and Young Rabbits. **J Vasc Res**. 2017;54(5):288-298. doi: 10.1159/000479869. PMCID: PMC5642984
23. Bauer A, Gu L, Kwee B, Li WA, Dellacherie M, Celiz AD, Mooney DJ. Hydrogel substrate stress-relaxation regulates the spreading and proliferation of mouse myoblasts. **Acta Biomater.** 2017 Oct 15;62:82-90. doi: 10.1016/j.actbio.2017.08.041. PMCID: PMC5641979
24. Li J, Celiz AD, Yang J, Yang Q, Wamala I, Whyte W, Seo BR, Vasilyev NV, Vlassak JJ, Suo Z, Mooney DJ. Tough adhesives for diverse wet surfaces. **Science**. 2017 Jul 28;357(6349):378-381. doi: 10.1126/science.aah6362. PMCID: PMC5905340
25. Cipitria A, Boettcher K, Schoenhals S, Garske DS, Schmidt-Bleek K, Ellinghaus A, Dienelt A, Peters A, Mehta M, Madl CM, Huebsch N, Mooney DJ, Duda GN. In-situ tissue regeneration through SDF-1α driven cell recruitment and stiffness-mediated bone regeneration in a critical-sized segmental femoral defect. **Acta Biomater.** 2017 Sep 15;60:50-63. doi: 10.1016/j.actbio.2017.07.032.
26. Cezar CA, Arany P, Vermillion SA, Seo BR, Vandenburgh HH, Mooney DJ. Timed Delivery of Therapy Enhances Functional Muscle Regeneration. **Adv Healthc Mater.** 2017 Oct;6(19). doi: 10.1002/adhm.201700202. PMCID: PMC5641972
27. Joly P, Schaus T, Sass A, Dienelt A, Cheung AS, Duda GN, Mooney DJ. Biophysical induction of cell release for minimally manipulative cell enrichment strategies. **PLoS One**. 2017 Jun 30;12(6):e0180568. doi: 10.1371/journal.pone.0180568. PMCID: PMC5493423
28. Qazi TH, Mooney DJ, Duda GN, Geissler S. Biomaterials that promote cell-cell interactions enhance the paracrine function of MSCs. **Biomaterials**. 2017 Sep;140:103-114. doi: 10.1016/j.biomaterials.2017.06.019.
29. Hu Y, Mao AS, Desai RM, Wang H, Weitz DA, Mooney DJ. Controlled self-assembly of alginate microgels by rapidly binding molecule pairs. **Lab Chip**. 2017 Jul 11;17(14):2481-2490. doi: 10.1039/c7lc00500h.
30. Ponnuswamy N, Bastings MMC, Nathwani B, Ryu JH, Chou LYT, Vinther M, Li WA, Anastassacos FM, Mooney DJ, Shih WM. Oligolysine-based coating protects DNA nanostructures from low-salt denaturation and nuclease degradation. **Nat Commun.** 2017 May 31;8:15654. doi: 10.1038/ncomms15654. PMCID: PMC5460023
31. Alvarez MM, Aizenberg J, Analoui M, Andrews AM, Bisker G, Boyden ES, Kamm RD, Karp JM, Mooney DJ, Oklu R, Peer D, Stolzoff M, Strano MS, Trujillo-de Santiago G, Webster TJ, Weiss PS, Khademhosseini A. Emerging Trends in Micro- and Nanoscale

Technologies in Medicine: From Basic Discoveries to Translation. **ACS Nano**. 2017 Jun 27;11(6):5195-5214. doi: 10.1021/acsnano.7b01493.
32. Thelin MA, Kissler S, Vigneault F, Watters AL, White D, Koshy ST, Vermillion SA, Mooney DJ, Serwold T, Ali OA. In Vivo Enrichment of Diabetogenic T Cells. **Diabetes**. 2017 Aug;66(8):2220-2229. doi: 10.2337/db16-0946. PMCID: PMC5521861
33. Lienemann PS, Rossow T, Mao AS, Vallmajo-Martin Q, Ehrbar M, Mooney DJ. Single cell-laden protease-sensitive microniches for long-term culture in 3D. **Lab Chip**. 2017 Feb 14;17(4):727-737. doi: 10.1039/c6lc01444e.
34. Verbeke CS, Gordo S, Schubert DA, Lewin SA, Desai RM, Dobbins J, Wucherpfennig KW, Mooney DJ. Multicomponent Injectable Hydrogels for Antigen-Specific Tolerogenic Immune Modulation. **Adv Healthc Mater**. 2017 PMCID: PMC5518671
35. Roche ET, Horvath MA, Wamala I, Alazmani A, Song S-E, Whyte W, Machaidze Z, Payne CJ, Weaver JC, Fishbein G, et al. Soft robotic sleeve supports heart function. **Sci Transl Med.** 2017;9 (373).
36. Zhang L, Cai LH, Lienemann PS, Rossow T, Polenz I, Vallmajo-Martin Q, Ehrbar M, Na H, Mooney DJ, Weitz DA. One-Step Microfluidic Fabrication of Polyelectrolyte Microcapsules in Aqueous Conditions for Protein Release. **Angew Chem Int Ed Engl.** 2016 Oct 17;55(43):13470-13474. doi: 10.1002/anie.201606960. PMID: 27717141
37. Shin JW, Mooney DJ. Extracellular matrix stiffness causes systematic variations in proliferation and chemosensitivity in myeloid leukemias. **Proc Natl Acad Sci U S A.** 2016 Oct 25;113(43):12126-12131. PMCID: PMC5086998
38. Mao AS, Shin JW, Utech S, Wang H, Uzun O, Li W, Cooper M, Hu Y, Zhang L, Weitz DA, Mooney DJ. Deterministic encapsulation of single cells in thin tunable microgels for niche modelling and therapeutic delivery. **Nat Mater.** 2016 Oct 31. doi: 10.1038/nmat4781. PMID: 27798621
39. Gerami-Naini B, Smith A, Maione AG, Kashpur O, Carpinito G, Veves A, Mooney DJ, Garlick JA. Generation of Induced Pluripotent Stem Cells from Diabetic Foot Ulcer Fibroblasts Using a Nonintegrative Sendai Virus. **Cell Reprogram**. 2016 Aug;18(4):214-23. doi: 10.1089/cell.2015.0087. PMCID: PMC4964760
40. Park J, Ku SK, Seo D, Hur K, Jeon H, Shvartsman D, Seok HK, Mooney DJ, Lee K. Label-free bacterial detection using polydiacetylene liposomes. **Chem Commun** (Camb). 2016 Aug 16;52(68):10346-9. doi: 10.1039/c6cc03116a.
41. Pumberger M, Qazi TH, Ehrentraut MC, Textor M, Kueper J, Stoltenburg-Didinger G, Winkler T, von Roth P, Reinke S, Borselli C, Perka C, Mooney DJ, Duda GN, Geißler S. Synthetic niche to modulate regenerative potential of MSCs and enhance skeletal muscle regeneration. Biomaterials. 2016 Aug;99:95-108. doi: 10.1016/**j.biomaterials**. 2016.05.009. PMID: 27235995
42. Mao AS, Shin JW, Mooney DJ. Effects of substrate stiffness and cell-cell contact on mesenchymal stem cell differentiation. **Biomaterials.** 2016 Aug;98:184-91. doi:10.1016/j.biomaterials.2016.05.004. PMCID: PMC4906313
43. Branco da Cunha C, Klumpers DD, Koshy ST, Weaver JC, Chaudhuri O, Seruca R, Carneiro F, Granja PL, Mooney DJ. CD44 alternative splicing in gastric cancer cells is regulated by culture dimensionality and matrix stiffness. **Biomaterials.** 2016 Aug;98:152-62. doi: 10.1016/j.biomaterials.
44. Maione AG, Smith A, Kashpur O, Yanez V, Knight E, Mooney DJ, Veves A, Tomic-Canic M, Garlick JA. Altered ECM deposition by diabetic foot ulcer-derived fibroblasts implicates fibronectin in chronic wound repair. **Wound Repair Regen**. 2016 Jul;24(4):630-43. doi: 10.1111/wrr.12437.

45. Choi CH, Wang H, Lee H, Kim JH, Zhang L, Mao A, Mooney DJ, Weitz DA. Onestep generation of cell-laden microgels using double emulsion drops with a sacrificial ultra-thin oil shell. **Lab Chip**. 2016 Apr 26;16(9):1549-55. doi: 10.1039/c6lc00261g
46. Cheung AS, Koshy ST, Stafford AG, Bastings MM, Mooney DJ. Adjuvant-Loaded Subcellular Vesicles Derived From Disrupted Cancer Cells for Cancer Vaccination. **Small.** 2016 May;12(17):2321-33. doi: 10.1002/smll.201600061. PMCID: PMC5074529
47. Rosenfeld D, Landau S, Shandalov Y, Raindel N, Freiman A, Shor E, Blinder Y, Vandenburgh HH, Mooney DJ, Levenberg S. Morphogenesis of 3D vascular networks is regulated by tensile forces. **Proc Natl Acad Sci U S A.** 2016 Mar 22;113(12):3215-20. doi: 10.1073/pnas.1522273113. PMCID: PMC4812755
48. Cezar CA, Roche ET, Vandenburgh HH, Duda GN, Walsh CJ, Mooney DJ. Biologic-free mechanically induced muscle regeneration. **Proc Natl Acad Sci U S A.** 2016 Feb 9;113(6):1534-9. doi: 10.1073/pnas.1517517113.
49. Koshy ST, Desai RM, Joly P, Li J, Bagrodia RK, Lewin SA, Joshi NS, Mooney DJ. Click-Crosslinked Injectable Gelatin Hydrogels. **Adv Healthc Mater.** 2016 Jan 25. doi: 10.1002/adhm.201500757.
50. Li WA, Lu BY, Gu L, Choi Y, Kim J, Mooney DJ. The effect of surface modification of mesoporous silica micro-rod scaffold on immune cell activation and infiltration. **Biomaterials.** 2016 Mar;83: 249-56. doi: 10.1016/j.biomaterials.2016.01.026.PMCID: PMC4754159.
51. Shin JW, Mooney DJ. Improving Stem Cell Therapeutics with Mechanobiology. **Cell Stem Cell.** 2016 Jan 7;18(1):16-9. doi: 10.1016/j.stem.2015.12.007. PMID: 26748752.
52. Gu L, Mooney DJ. Biomaterials and emerging anticancer therapeutics: engineering the microenvironment. **Nat Rev Cancer.** 2016 Jan;16(1):56-66. doi: 10.1038/nrc.2015.3. PMCID: PMC4790726
53. Ali OA, Lewin SA, Dranoff G, Mooney DJ. Vaccines Combined with Immune Checkpoint Antibodies Promote Cytotoxic T-cell Activity and Tumor Eradication. **Cancer Immunol Res.** 2016 Feb;4(2):95-100. doi: 10.1158/2326-6066.CIR-14-0126. PMCID: PMC474022.
54. Blinder YJ, Freiman A, Raindel N, Mooney DJ, Levenberg S. Vasculogenic dynamics in 3D engineered tissue constructs. **Sci Rep.** 2015 Dec 9;5:17840. doi: 10.1038/srep17840.PMCID: PMC4673462.
55. Verbeke CS, Mooney DJ. Injectable, Pore-Forming Hydrogels for In Vivo Enrichment of Immature Dendritic Cells. **Adv Healthc Mater.** 2015 Dec;4(17):2677-87. doi: 10.1002/adhm.201500618. PMCID: PMC4715727.
56. Chaudhuri O, Gu L, Klumpers D, Darnell M, Bencherif SA, Weaver JC, Huebsch N, Lee HP, Lippens E, Duda GN, Mooney DJ. Hydrogels with tunable stress relaxation regulate stem cell fate and activity. **Nat Mater.** 2015 Nov 30. doi: 10.1038/nmat4489.
57. Kennedy S, Hu J, Kearney C, Skaat H, Gu L, Gentili M, Vandenburgh H, Mooney D. Sequential release of nanoparticle payloads from ultrasonically burstable capsules **Biomaterials.** 2016 Jan;75:91-101. doi: 10.1016/j.biomaterials.2015.10.008. PMCID: PMC47685712.
58. Roche ET, Fabozzo A, Lee Y, Polygerinos P, Friehs I, Schuster L, Whyte W, Casar Berazaluce AM, Bueno A, Lang N, Pereira MJ, Feins E, Wasserman S, O'Cearbhaill ED, Vasilyev NV, Mooney DJ, Karp JM, Del Nido PJ, Walsh CJ. A light-reflecting balloon catheter for atraumatic tissue defect repair.**Sci Transl Med.** 2015 Sep 23;7(306):306ra149. doi:10.1126/scitranslmed.aaa2406.

59. Huebsch N, Lippens E, Lee K, Mehta M, Koshy ST, Darnell MC, Desai RM, Madl CM, Xu M, Zhao X, Chaudhuri O, Verbeke C, Kim WS, Alim K, Mammoto A, Ingber DE, Duda GN, Mooney DJ. Matrix elasticity of void-forming hydrogels controls transplanted-stem-cell-mediated bone formation. **Nature Mater**. 2015 Sep 14. doi:10.1038/nmat4407. PMCID: PMC4654683.
60. Ayala P, Caves J, Dai E, Siraj L, Liu L, Chaudhuri O, Haller CA, Mooney DJ, Chaikof EL. Engineered composite fascia for stem cell therapy in tissue repair applications. **Acta Biomater**. 2015 Aug 15. pii: S1742-7061(15)30056-8. doi: 10.1016/j.actbio.2015.08.012. PMCID: PMC4584209.
61. Bencherif SA, Warren Sands R, Ali OA, Li WA, Lewin SA, Braschler TM, Shih TY, Verbeke CS, Bhatta D, Dranoff G, Mooney DJ. Injectable cryogel-based whole-cell cancer vaccines. **Nature Commun**. 2015 Aug 12;6:7556. doi: 10.1038/ncomms8556.
62. Anderson EM, Mooney DJ. The Combination of Vascular Endothelial Growth Factor and Stromal Cell-Derived Factor Induces Superior Angiogenic Sprouting by Outgrowth Endothelial Cells. **J Vasc Res**. 2015;52(1):62-9.
63. Kearney CJ, Skaat H, Kennedy SM, Hu J, Darnell M, Raimondo TM, Mooney DJ. Switchable Release of Entrapped Nanoparticles from Alginate Hydrogels. **Adv Healthc Mater**. 2015 Jun 5. doi: 10.1002/adhm.201500254. PMCID: PMC4685946.
64. Utech S, Prodanovic R, Mao AS, Ostafe R, Mooney DJ, Weitz DA. Microfluidic Generation of Monodisperse, Structurally Homogeneous Alginate Microgels for Cell Encapsulation and 3D Cell Culture. **Adv Healthc Mater**. 2015 Jun 3. doi: 10.1002/adhm.201500021. PMCID:PMC4529809
65. Tellechea A, Silva EA, Min J, Leal EC, Auster ME, Pradhan-Nabzdyk L, Shih W, Mooney DJ, Veves A. Alginate and DNA Gels Are Suitable Delivery Systems for Diabetic Wound Healing. **Int J Low Extrem Wounds**. 2015 Jun 1. pii: 1534734615580018.
66. Mehta M, Madl CM, Lee S, Duda GN, Mooney DJ. The collagen I mimetic peptide DGEA enhances an osteogenic phenotype in mesenchymal stem cells when presented from cell-encapsulating hydrogels. **J Biomed Mater Res A**. 2015 May 8. doi: 10.1002/jbm.a.35497. PMCID: PMC4589437.
67. Huang GX, Arany PR, Mooney DJ. Modeling and Validation of Multilayer Poly(Lactide-Co-Glycolide) Scaffolds for In Vitro Directed Differentiation of Juxtaposed Cartilage and Bone. **Tissue Eng Part A**. 2015 Jun 3. PMCID: PMC4529069.
68. Braschler T, Wu S, Wildhaber F, Bencherif SA, Mooney DJ. Soft nanofluidics governing minority ion exclusion in charged hydrogels. **Soft Matter**. 2015 May 28;11(20):4081-90. doi: 10.1039/c5sm00705d.
69. Klumpers DD, Smit TH, Mooney DJ. The effect of growth-mimicking continuous strain on the early stages of skeletal development in micromass culture. **PLoS One**. 2015 Apr 27;10(4):e0124948. doi: 10.1371/journal.pone.0124948..PMCID: PMC4411057.
70. Leal EC, Carvalho E, Tellechea A, Kafanas A, Tecilazich F, Kearney C, Kuchibhotla S, Auster ME, Kokkotou E, Mooney DJ, LoGerfo FW, Pradhan-Nabzdyk L, Veves A. Substance p promotes wound healing in diabetes by modulating inflammation and macrophage phenotype. **Am J Pathol**. 2015 Jun;185(6):1638-48. doi: 10.1016/j.ajpath.2015.02.011. PMCID: PMC4450333.
71. Desai RM, Koshy ST, Hilderbrand SA, Mooney DJ, Joshi NS.Versatile click alginate hydrogels crosslinked via tetrazine-norbornene chemistry. **Biomaterials.** 2015 May;50:30-7. doi: 10.1016/j.biomaterials.2015.01.048.
72. Brudno Y, Desai RM, Kwee BJ, Joshi NS, Aizenberg M, Mooney DJ. In Vivo Targeting through Click Chemistry. **ChemMedChem**. 2015 Feb 20. doi:10.1002/cmdc.201402527.

73. Chaudhuri O, Gu L, Darnell M, Klumpers D, Bencherif SA, Weaver JC, Huebsch N, Mooney DJ. Substrate stress relaxation regulates cell spreading. **Nat Commun**. 2015 Feb 19;6:6365. doi: 10.1038/ncomms7365.PMCID: PMC 4518451.
74. Kim J, Li WA, Choi Y, Lewin SA, Verbeke CS, Dranoff G, Mooney DJ. Injectable, spontaneously assembling, inorganic scaffolds modulate immune cells in vivo and increase vaccine efficacy. **Nat Biotechnol**. 2015 Jan;33(1):64-72. Doi:10.1038/nbt.3071. PMCID: PMC4318563.
75. Park LK, Maione AG, Smith A, Gerami-Naini B, Iyer LK, Mooney DJ, Veves A, Garlick JA. Genome-wide DNA methylation analysis identifies a metabolic memory profile in patient-derived diabetic foot ulcer fibroblasts**. Epigenetics**. 2014;9(10):1339-49. doi: 10.4161/15592294.2014.967584.PMID:25437049
76. Anderson EM, Kwee BJ, Lewin SA, Raimondo T, Mehta M, Mooney DJ. Local Delivery of VEGF and SDF Enhances Endothelial Progenitor Cell Recruitment and Resultant Recovery from Ischemia.**Tissue Eng Part A**. 2014 Nov 30. PMCID: PMC4394875.
77. Ali OA, Mooney DJ. From tissue engineering to therapeutic cancer vaccines: Original research article: Bioabsorbable polymer scaffolds for tissue engineering capable of sustained growth factor delivery, 2000. **J Control Release.** 2014 Sep 28;190:54-6.
78. Astarita JL, Cremasco V, Fu J, Darnell MC, Peck JR, Nieves-Bonilla JM, Song K, Kondo Y, Woodruff MC, Gogineni A, Onder L, Ludewig B, Weimer RM, Carroll MC, Mooney DJ, Xia L, Turley SJ.The CLEC-2-podoplanin axis controls the contractility of fibroblastic reticular cells and lymph node microarchitecture. **Nat Immunol.** 2015 Jan;16(1):75-84. doi: 10.1038/ni.3035.. PMCID: PMC4270928
79. Brudno Y, Silva EA, Kearney CJ, Lewin SA, Miller A, Martinick KD, Aizenberg M, Mooney DJ. Refilling drug delivery depots through the blood. **Proc Natl Acad Sci** U S A. 2014 Sep 2;111(35):12722-7. PMCID: PMC4156738
80. Béduer A, Braschler T, Peric O, Fantner GE, Mosser S, Fraering PC, Benchérif S, Mooney DJ, Renaud P. A Compressible Scaffold for Minimally Invasive Delivery Of Large Intact Neuronal Networks. **Adv Healthc Mater**. 2014 Sep 1. doi: 10.1002/adhm.201400250. PMID: 25178838.
81. Arany PR, Huang GX, Gadish O, Feliz J, Weaver JC, Kim J, Yuen WW, Mooney DJ. Multi-lineage MSC Differentiation via Engineered Morphogen Fields. **J Dent Res**. 2014 Aug 20. pii: 0022034514542272. PMCID: PMC4237631.
82. Kim J, Bencherif SA, Li WA, Mooney DJ. Cell-friendly inverse opal-like hydrogels for a spatially separated co-culture system. **Macromol Rapid Commun**. 2014 Sep;35(18):1578-86. PMCID: PMC4318565.
83. Branco da Cunha C, Klumpers DD, Li WA, Koshy ST, Weaver JC, Chaudhuri O, Granja PL, Mooney DJ. Influence of the stiffness of three-dimensional alginate/collagen-I interpenetrating networks on fibroblast biology. **Biomaterials**. 2014 Oct;35(32):8927-36.
84. Huebsch N, Kearney CJ, Zhao X, Kim J, Cezar CA, Suo Z, Mooney DJ. Ultrasound-triggered disruption and self-healing of reversibly cross-linked hydrogels for drug delivery and enhanced chemotherapy. **Proc Natl Acad Sci** U S A. 2014 Jul 8;111(27):9762-7.PMCID: PMC4103344
85. Chaudhuri O, Koshy ST, Branco da Cunha C, Shin JW, Verbeke CS, Allison KH, Mooney DJ. Extracellular matrix stiffness and composition jointly regulate the induction of malignant phenotypes in mammary epithelium. **Nature Mater**. 2014 Oct;13(10):970-8.
86. Roche ET, Hastings CL, Lewin SA, Shvartsman DE, Brudno Y, Vasilyev NV, O'Brien FJ, Walsh CJ, Duffy GP, Mooney DJ. Comparison of biomaterial delivery vehicles for

improving acute retention of stem cells in the infarcted heart. **Biomaterials**. 2014 Aug;35(25):6850-8. PMCID: PMC4051834.
87. Cezar CA, Kennedy SM, Mehta M, Weaver JC, Gu L, Vandenburgh H, Mooney DJ. Biphasic Ferrogels for Triggered Drug and Cell Delivery. **Adv Healthc Mater**. 2014 May 26. doi: 10.1002/adhm.201400095.
88. Kim J, Li WA, Sands W, Mooney DJ. Effect of pore structure of macroporous poly(lactide-co-glycolide) scaffolds on the in vivo enrichment of dendritic cells**. ACS Appl Mater Interfaces**. 2014 Jun 11;6(11):8505-12. doi: 10.1021/am501376n. PMCID: PMC4056860.
89. Shvartsman D, Storrie-White H, Lee K, Kearney C, Brudno Y, Ho N, Cezar C, McCann C, Anderson E, Koullias J, Tapia JC, Vandenburgh H, Lichtman JW, Mooney DJ. Sustained delivery of VEGF maintains innervation and promotes reperfusion in ischemic skeletal muscles via NGF/GDNF signaling. **Mol Ther**. 2014 Jul;22(7):1243-53.
90. Lee K, Weir MD, Lippens E, Mehta M, Wang P, Duda GN, Kim WS, Mooney DJ, Xu HH. Bone regeneration via novel macroporous CPC scaffolds in critical-sized cranial defects in rats. **Dent Mater**. 2014 Jul;30(7):e199-207. PMCID: PMC4312701.
91. Klumpers DD, Mao AS, Smit TH, Mooney DJ. Linear patterning of mesenchymal condensations is modulated by geometric constraints. **J R Soc Interface**. 2014 Apr 9;11(95):20140215. PMCID: PMC4006265
92. Ali OA, Tayalia P, Shvartsman D, Lewin S, Mooney DJ. Inflammatory cytokines presented from polymer matrices differentially generate and activate DCs in situ. **Adv Funct Mater**. 2013 Aug 1;23(36):4621-4628. PMCID: PMC4089004.
93. Arany PR, Cho A, Hunt TD, Sidhu G, Shin K, Hahm E, Huang GX, Weaver J, Chen AC, Padwa BL, Hamblin MR, Barcellos-Hoff MH, Kulkarni AB, J Mooney D. Photoactivation of endogenous latent transforming growth factor-β1 directs dental stem cell differentiation for regeneration. **Science Transl Med**. 2014 May 28;6(238):238ra69.
94. Ali OA, Verbeke C, Johnson C, Sands RW, Lewin SA, White D, Doherty E, Dranoff G, Mooney DJ. Identification of immune factors regulating antitumor immunity using polymeric vaccines with multiple adjuvants. **Cancer Res**. 2014 Mar 15;74(6):1670-81. PMCID: PMC3959905.
95. Silva EA, Eseonu C, Mooney DJ. Endothelial cells expressing low levels of CD143 (ACE) exhibit enhanced sprouting and potency in relieving tissue ischemia. **Angiogenesis**. 2014 Jul;17(3):617-30.PMCID: PMC4063867.
96. Madl CM, Mehta M, Duda GN, Heilshorn SC, Mooney DJ. Presentation of BMP-2 mimicking peptides in 3D hydrogels directs cell fate commitment in osteoblasts and mesenchymal stem cells. **Biomacromolecules**. 2014 Feb 10;15(2):445-55. PMCID: PMC3930060.
97. Shamis Y, Silva EA, Hewitt KJ, Brudno Y, Levenberg S, Mooney DJ, Garlick JA. Fibroblasts derived from human pluripotent stem cells activate angiogenic responses in vitro and in vivo. **PLoS One**. 2013 Dec 30;8(12):e83755. doi: 10.1371/journal.pone.0083755. eCollection 2013. PMCID: PMC3875480.
98. Koshy ST, Ferrante TC, Lewin SA, Mooney DJ. Injectable, porous, and cell-responsive gelatin cryogels. **Biomaterials**. 2014 Mar;35(8):2477-87. PMCID: PMC3835418.
99. Fonseca KB, Gomes DB, Lee K, Santos SG, Sousa A, Silva EA, Mooney DJ, Granja PL, Barrias CC. Injectable MMP-sensitive alginate hydrogels as hMSC delivery systems. **Biomacromolecules**. 2014 Jan 13;15(1):380-90.
100. Cho A, Haruyama N, Hall B, Danton MJ, Zhang L, Arany P, Mooney DJ, Harichane Y, Goldberg M, Gibson CW, Kulkarni AB. TGF-ß regulates enamel

mineralization and maturation through KLK4 expression. **PLoS One**. 2013 Nov 20;8(11):e82267.

101. Roche ET, Wohlfarth R, Overvelde JT, Vasilyev NV, Pigula FA, Mooney DJ, Bertoldi K, Walsh CJ. A bioinspired soft actuated material. **Adv Mater**. 2014 Feb 26;26(8):1200-6.
102. Kearney CJ, Mooney DJ. Macroscale delivery systems for molecular and cellular payloads. **Nature Mater**. 2013 Nov;12(11):1004-17.
103. Lui KO, Zangi L, Silva EA, Bu L, Sahara M, Li RA, Mooney DJ, Chien KR. Driving vascular endothelial cell fate of human multipotent Isl1+ heart progenitors with VEGF modified mRNA. **Cell Res**. 2013 Oct;23(10):1172-86. PMCID: PMC3790234.
104. Brudno Y, Ennett-Shepard AB, Chen RR, Aizenberg M, Mooney DJ. Enhancing microvascular formation and vessel maturation through temporal control over multiple pro-angiogenic and pro-maturation factors. **Biomaterials**. 2013 Dec;34(36):9201-9.PMCID: PMC3811005.
105. Chan G, Mooney DJ. Ca(2+) released from calcium alginate gels can promote inflammatory responses in vitro and in vivo. **Acta Biomater**. 2013 Dec;9(12):9281-91.
106. Gu L, Hall DJ, Qin Z, Anglin E, Joo J, Mooney DJ, Howell SB, Sailor MJ. In vivo time-gated fluorescence imaging with biodegradable luminescent porous silicon nanoparticles. **Nature Commun**. 2013;4:2326. doi: 10.1038/ncomms3326. PMCID: PMC3867449.
107. Klumpers DD, Zhao X, Mooney DJ, Smit TH. Cell mediated contraction in 3D cell-matrix constructs leads to spatially regulated osteogenic differentiation. **Integr Biol** (Camb). 2013 Sep;5(9):1174-83. PMCID: PMC38163960.
108. Darnell MC, Sun JY, Mehta M, Johnson C, Arany PR, Suo Z, Mooney DJ. Performance and biocompatibility of extremely tough alginate/polyacrylamide hydrogels. **Biomaterials**. 2013 Nov;34(33):8042-8. PMCID: PMC3775708.
109. Chang J, Liu F, Lee M, Wu B, Ting K, Zara JN, Soo C, Al Hezaimi K, Zou W, Chen X, Mooney DJ, Wang CY. NF-κB inhibits osteogenic differentiation of mesenchymal stem cells by promoting β-catenin degradation. **Proc Natl Acad Sci** U S A. 2013 Jun 4;110(23):9469-74. PMCID: PMC3677422.
110. Nakaoka R, Hirano Y, Mooney DJ, Tsuchiya T, Matsuoka A. Study on the potential of RGD- and PHSRN-modified alginates as artificial extracellular matrices for engineering bone. **J Artif Organs**. 2013 Sep;16(3):284-93. PMID: 23512309.
111. Li WA, Mooney DJ. Materials based tumor immunotherapy vaccines. **Curr Opin Immunol**. 2013 Apr;25(2):238-45. PMCID: PMC3644528.
112. Bencherif SA, Sands RW, Bhatta D, Arany P, Verbeke CS, Edwards DA, Mooney DJ. Injectable preformed scaffolds with shape-memory properties. **Proc Natl Acad Sci** U S A. 2012 Nov 27;109(48):19590-5. doi: 10.1073/pnas.1211516109. Epub 2012 Nov 12.
113. Sun JY, Zhao X, Illeperuma WR, Chaudhuri O, Oh KH, Mooney DJ, Vlassak JJ, Suo Z. Highly stretchable and tough hydrogels. **Nature**. 2012 Sep 6;489(7414):133-6. doi: 10.1038/nature11409.
114. Kodiyan A, Silva EA, Kim J, Aizenberg M, Mooney DJ. Surface modification with alginate-derived polymers for stable, protein-repellent, long-circulating gold nanoparticles. **ACS Nano.** 2012 Jun 26;6(6):4796-805. PMID: 22650310.
115. Malhotra D, Fletcher AL, Astarita J, Lukacs-Kornek V, Tayalia P, Gonzalez SF, Elpek KG, Chang SK, Knoblich K, Hemler ME, Brenner MB, Carroll MC, Mooney DJ, Turley SJ; Immunological Genome Project Consortium. Transcriptional profiling of stroma from inflamed and resting lymph nodes defines immunological hallmarks. **Nature Immunol**. 2012 Apr 1;13(5):499-510. doi: 10.1038/ni.2262.PMCID: PMC3366863.

116. Kaigler D, Silva EA, Mooney DJ. Guided Bone Regeneration (GBR) Utilizing Injectable Vascular Endothelial Growth Factor (VEGF) Delivery Gel. **J Periodontol.** 2012 Jun 5. PMCID: PMC3669541.
117. Khormaee S, Ali OA, Chodosh J, Mooney DJ. Optimizing siRNA efficacy through alteration in the target cell-adhesion substrate interaction. **J Biomed Mater Res A**. 2012 May 21. doi: 10.1002/jbm.a.34202. PMCID:3685857.
118. Yuen WW, Du NR, Shvartsman D, Arany PR, Lam H, Mooney DJ. Statistical platform to discern spatial and temporal coordination of endothelial sprouting. **Integr Biol (Camb).** 2012 Mar;4(3):292-300. Epub 2012 Feb 9.
119. Borselli C, Cezar CA, Shvartsman D, Vandenburgh HH, Mooney DJ. The role of multifunctional delivery scaffold in the ability of cultured myoblasts to promote muscle regeneration. **Biomaterials**. 2011. Dec; 32(34):8905-14.
120. Ali OA, Doherty E, Bell WJ, Fradet T, Hudak J, Laliberte MT, Mooney DJ, Emerich DF. The efficacy of intracranial PLG-based vaccines is dependent on direct implantation into brain tissue. **J Control Release.** 2011 Jun 16.
121. Kolambkar YM, Boerckel JD, Dupont KM, Bajin M, Huebsch N, Mooney DJ, Hutmacher DW, Guldberg RE. Spatiotemporal delivery of bone morphogenetic protein enhances functional repair of segmental bone defects. **Bone.** 2011 May 18.
122. Vacharathit V, Silva EA, Mooney DJ. Viability and functionality of cells delivered from peptide conjugated scaffolds. **Biomaterials.** 2011 May;32(15):3721-8. Epub 2011 Feb 21. PMCID: PMC3074238.
123. Tayalia P, Mazur E, Mooney DJ. Controlled architectural and chemotactic studies of 3D cell migration. **Biomaterials.** 2011 Apr;32(10):2634-41. Epub 2011 Jan 14. PMCID: PMC3040453.
124. Ali OA, Doherty E, Bell WJ, Fradet T, Hudak J, Laliberte MT, Mooney DJ, Emerich DF. Biomaterial-based vaccine induces regression of established intracranial glioma in rats. **Pharm Res**. 2011 May;28(5):1074-80. Epub 2011 Jan 12. PMID: 21225320.
125. Comisar WA, Mooney DJ, Linderman JJ. Integrin organization: linking adhesion ligand nanopatterns with altered cell responses. **J Theor Biol**. 2011 Apr 7;274(1):120-30. Epub 2011 Jan 19. PMCID: PMC3056075.
126. Lee K, Hahn LD, Yuen WW, Vlamakis H, Kolter R, Mooney DJ. Metal-enhanced fluorescence to quantify bacterial adhesion. **Adv Mater.** 2011 Mar 25;23(12):H101-4. doi: 10.1002/adma.201004096. Epub 2011 Feb 22. PMID: 21433096.
127. Kim J, Cao L, Shvartsman D, Silva EA, Mooney DJ. Targeted delivery of nanoparticles to ischemic muscle for imaging and therapeutic angiogenesis. **Nano Lett.** 2011 Feb 9;11(2):694-700. Epub 2010 Dec 30. PubMed PMID: 21192718; PMCID: PMC3073422.
128. Lee K, Silva EA, Mooney DJ. Growth factor delivery-based tissue engineering: general approaches and a review of recent developments. **J R Soc Interface.** 2011 Feb 6;8(55):153-70. Epub 2010 Aug 18. Review. PMCID: PMC3033020.
129. Zhao X, Kim J, Cezar CA, Huebsch N, Lee K, Bouhadir K, Mooney DJ. Active scaffolds for on-demand drug and cell delivery. **Proc Natl Acad Sci U S A**. 2011 Jan 4;108(1):67-72. Epub 2010 Dec 13. PMCID: PMC3017202.
130. Kolambkar YM, Dupont KM, Boerckel JD, Huebsch N, Mooney DJ, Hutmacher DW, Guldberg RE. An alginate-based hybrid system for growth factor delivery in the functional repair of large bone defects. **Biomaterials.** 2011 Jan;32(1):65-74. Epub 2010 Sep 22. PMCID: PMC3013370.
131. Cao L, Arany PR, Kim J, Rivera-Feliciano J, Wang YS, He Z, Rask-Madsen C, King GL, Mooney DJ. Modulating Notch signaling to enhance neovascularization and

reperfusion in diabetic mice. **Biomaterials.** 2010 Dec;31(34):9048-56. Epub 2010 Aug 25. PMCID: PMC2949444.

132. Yuen WW, Du NR, Chan CH, Silva EA, Mooney DJ. Mimicking nature by codelivery of stimulant and inhibitor to create temporally stable and spatially restricted angiogenic zones. **Proc Natl Acad Sci U S A.** 2010 Oct 19;107(42):17933-8. Epub 2010 Oct 4. PMCID: PMC2964247.
133. Hahn LD, Kong H, Mooney DJ. Polycation structure mediates expression of lyophilized polycation/pDNA complexes. **Macromol Biosci.** 2010 Oct 8;10(10):1210-5. PMID: 20572272.
134. Huebsch N, Arany PR, Mao AS, Shvartsman D, Ali OA, Bencherif SA, Rivera-Feliciano J, Mooney DJ. Harnessing traction-mediated manipulation of the cell/matrix interface to control stem-cell fate. **Nature Mater.** 2010 Jun;9(6):518-26. Epub 2010 Apr 25. PMCID: PMC2919753.
135. Zhao X, Huebsch N, Mooney DJ, Suo Z. Stress-relaxation behavior in gels with ionic and covalent crosslinks. **J Appl Phys.** 2010 Mar 15;107(6):63509. Epub 2010 Mar 23. PMCID: PMC3069988.
136. Hutmacher DW, Loessner D, Rizzi S, Kaplan DL, Mooney DJ, Clements JA. Can tissue engineering concepts advance tumor biology research? **Trends Biotechnol**. 2010 Mar; 28(3):125-33. Epub 2010 Jan 6.
137. Borselli C, Storrie H, Benesch-Lee F, Shvartsman D, Cezar C, Lichtman JW, Vandenburgh HH, Mooney DJ. Functional muscle regeneration with combined delivery of angiogenesis and myogenesis factors. **Proc Natl Acad Sci U S A.** 2010 Feb 23;107(8):3287-92. Epub 2009 Dec 4. PMCID: PMC2840452.
138. Sun Q, Silva EA, Wang A, Fritton JC, Mooney DJ, Schaffler MB, Grossman PM, Rajagopalan S. Sustained release of multiple growth factors from injectable polymeric system as a novel therapeutic approach towards angiogenesis. **Pharm Res.** 2010 Feb;27(2):264-71. Epub 2009 Dec 1. PMCID: PMC2812420.
139. Silva EA, Mooney DJ. Effects of VEGF temporal and spatial presentation on angiogenesis. **Biomaterials.** 2010 Feb;31(6):1235-41. Epub 2009 Nov 10. PMCID: PMC2813952.
140. Chueh BH, Zheng Y, Torisawa YS, Hsiao AY, Ge C, Hsiong S, Huebsch N, Franceschi R, Mooney DJ, Takayama S. Patterning alginate hydrogels using light-directed release of caged calcium in a microfluidic device. **Biomed Microdevices.** 2010 Feb;12(1):145-51. PMCID: PMC2825700.
141. Stern E, Vacic A, Rajan NK, Criscione JM, Park J, Ilic BR, Mooney DJ, Reed MA, Fahmy TM. Label-free biomarker detection from whole blood. **Nature Nanotechnol.** 2010 Feb;5(2):138-42. Epub 2009 Dec 13. PMCID: PMC2818341.
142. Emerich DF, Mooney DJ, Storrie H, Babu RS, Kordower JH. Injectable hydrogels providing sustained delivery of vascular endothelial growth factor are neuroprotective in a rat model of Huntington's disease. **Neurotox Res.** 2010 Jan;17(1):66-74. Epub 2009 Jul 9. PMID: 19588214.
143. Ali OA, Emerich D, Dranoff G, Mooney DJ. In situ regulation of DC subsets and T cells mediates tumor regression in mice. **Sci Transl Med.** 2009 Nov 25;1(8):8ra19. PubMed PMID: 20368186; PMCID: PMC2872791.
144. Park H, Kang SW, Kim BS, Mooney DJ, Lee KY. Shear-reversibly crosslinked alginate hydrogels for tissue engineering. **Macromol Biosci**. 2009 Sep 9;9(9):895-901.
145. Yung YC, Chae J, Buehler MJ, Hunter CP, Mooney DJ. Cyclic tensile strain triggers a sequence of autocrine and paracrine signaling to regulate angiogenic sprouting in

human vascular cells**. Proc Natl Acad Sci U S A**. 2009 Sep 8;106(36):15279-84. Epub 2009 Aug 24.
146. Stern E, Jay SM, Demento SL, Murelli RP, Reed MA, Malinski T, Spiegal DA, Mooney DJ, Fahmy TM. Spatiotemporal control over molecular delivery and cellular encapsulation from electropolymerized micro- and nonpatterned surfaces. **Advanced Functional Materials**. 2009 Sep;19(18):2888-95.
147. Cao L, Arany PR, Wang YS, Mooney DJ. Promoting angiogenesis via manipulation of VEGF responsiveness with notch signaling. **Biomaterials**. 2009 Sep;30(25):4085-93. Epub 2009 May 29.
148. Stern E, Mooney DJ, Fahmy TM. A biomimetic approach for the creation of two-dimensional microscale surface patterns: creation of isolated immunological synapses. **Int J Biomater**.;2009:821308. Epub 2009 Jun 17.
149. Park H, Kang SW, Kim BS, Mooney DJ, Lee KY, Shear-reversibly Crosslinked Alginate Hydrogels for Tissue Engineering. **Macromol Biosci**. 2009 May 6. [Epub ahead of print]
150. Orive G, De Castro M, Kong HJ, Hernández RM, Ponce S, Mooney DJ, Pedraz JL., Bioactive cell-hydrogel microcapsules for cell-based drug delivery., **J Control Release**. 2009 May 5;135(3):203-10. Epub 2009 Jan 21.
151. Ali OA, Huebsch N, Cao L, Dranoff G, Mooney DJ, Infection-mimicking materials to program dendritic cells in situ., **Nature Materials** 2009 Feb;8(2):151-8. Epub 2009 Jan 11.
152. Fischbach C, Kong HJ, Hsiong SX, Evangelista MB, Yuen W, Mooney DJ., Cancer cell angiogenic capability is regulated by 3D culture and integrin engagement., **Proc Natl Acad Sci** U S A. 2009 Jan 13;106(2):399-404. Epub 2009 Jan 6.
153. Yung YC, Vandenburgh H, Mooney DJ., Cellular strain assessment tool (CSAT): precision-controlled cyclic uniaxial tensile loading. **J Biomech**. 2009 Jan 19;42(2):178-82. Epub 2009 Jan 1.
154. Boontheekul T, Kong HJ, Hsiong SX, Huang YC, Mahadevan L, Vandenburgh H, Mooney DJ. Quantifying the relation between bond number and myoblast proliferation. **Faraday Discuss**. 2008;139:53-70; discussion 105-28, 419-20.
155. Park EJ, Kim ES, Weber HP, Wright RF, Mooney DJ. Improved bone healing by angiogenic factor-enriched platelet-rich plasma and its synergistic enhancement by bone morphogenetic protein-2. **Int J Oral Maxillofac Implants**. 2008 Sep-Oct;23(5):818-26.
156. Silva EA, Kim ES, Kong HJ, Mooney DJ. Material-based deployment enhances efficacy of endothelial progenitor cells**. Proc Natl Acad Sci** U S A. 2008 Sep 23;105(38):14347-52. Epub 2008 Sep 15.
157. Hsiong SX, Boontheekul T, Huebsch N, Mooney DJ. Cyclic Arginine-Glycine-Aspartate Peptides Enhance Three-Dimensional Stem Cell Osteogenic Differentiation. **Tissue Eng** Part A. 2008 Sep 10. [Epub ahead of print]
158. Ali OA, Mooney DJ. Sustained GM-CSF and PEI condensed pDNA presentation increases the level and duration of gene expression in dendritic cells. **J Control Release.** 2008 Dec 18;132(3):273-8. Epub 2008 Jul 10.
159. Hsiong SX, Huebsch N, Fischbach C, Kong HJ, Mooney DJ. Integrin-adhesion ligand bond formation of preosteoblasts and stem cells in three-dimensional RGD presenting matrices. **Biomacromolecules**. 2008 Jul;9(7):1843-51. Epub 2008 Jun 10.
160. Rocha FG, Sundback CA, Krebs NJ, Leach JK, Mooney DJ, Ashley SW, Vacanti JP, Whang EE. The effect of sustained delivery of vascular endothelial growth factor on

angiogenesis in tissue-engineered intestine. **Biomaterials**. 2008 Jul;29(19):2884-90. Epub 2008 Apr 8.

161. Hsiong SX, Cooke PH, Kong HJ, Fishman ML, Ericsson M, Mooney DJ. AFM imaging of RGD presenting synthetic extracellular matrix using gold nanoparticles. **Macromol Biosci.** 2008 Jun 11;8(6):469-77.
162. Hsiong SX, Carampin P, Kong HJ, Lee KY, Mooney DJ. Differentiation stage alters matrix control of stem cells. **J Biomed Mater Res** A. 2008 Apr;85(1):145-56. Erratum in: J Biomed Mater Res A. 2008 Oct;87(1):282.
163. Abraham Cohn N, Kim BS, Erkamp RQ, Mooney DJ, Emelianov SY, Skovoroda AR, O'Donnell M. High-resolution elasticity imaging for tissue engineering. **IEEE Trans Ultrason Ferroelectr Freq Control**. 2000;47(4):956-66.
164. Kong HJ, Kim ES, Huang YC, Mooney DJ. Design of biodegradable hydrogel for the local and sustained delivery of angiogenic plasmid DNA. **Pharm Res.** 2008 May;25(5):1230-8. Epub 2008 Jan 9.
165. Lee KY, Kong HJ, Mooney DJ. Quantifying interactions between cell receptors and adhesion ligand-modified polymers in solution. **Macromol Biosci**. 2008 Feb 11;8(2):140-5.
166. Fischbach C, Chen R, Matsumoto T, Schmelzle T, Brugge JS, Polverini PJ, Mooney DJ. Engineering tumors with 3D scaffolds. **Nature Methods** 2007 Sep 2; [Epub ahead of print] PMID: 17767164
167. Chen RR, Silva EA, Yuen WW, Brock AA, Fischbach C, Lin AS, Guldberg RE, Mooney DJ. Integrated approach to designing growth factor delivery systems. **FASEB J.** 2007 Dec;21(14):3896-903.
168. Zhong Y, Zhang L, Ding AG, Shenderova A, Zhu G, Pei P, Chen RR, Mallery SR, Mooney DJ, Schwendeman SP. Rescue of SCID murine ischemic hindlimbs with pH-modified rhbFGF/Poly(DL-lactic-co-glyolic acid) implants**. J Control Release** 2007 May 23; [Epub ahead of print]
169. Dong Z, Neiva K. Jin T. Zhang Z. Hall D. Mooney D. Polverini P. Nör JE. Quantification of Human Angiogenesis in Immunodeficient Mice Using a Photon Counting-based method**. Biotechniques** 2007 43:73-77
170. Hao X. Silva EA. Mansson-Broberg A. Grinnemo KH. Siddiqui AJ. Dellgren G. Wardell E. Brodin LA. Mooney DJ. Sylven C. Angiogenic effects of sequential release of VEGF-A(165) and PDGF-BB with alginate hydrogels after myocardial infarction**. Cardiovasc Res** 2007 Apr 6; [Epub ahead of print]
171. Boontheekul T, Hill EE, Kong HJ, Mooney DJ. Regulating myoblast phenotype through controlled gel stiffness and degradation. **Tissue Eng**. 2007 Jul;13(7):1431-42.
172. Evangelista MB. Hsiong SX. Fernandes R. Sampaio P. Kong HJ. Barrias CC. Selema R. Barbosa MA. Mooney DJ. Granja PL. Upregulation of bone cell differentiation through immobilization within a synthetic extracellular matrix. **Biomaterials** 2007 May 3: [Epub ahead of print]
173. Chen RR, Snow JK, Palmer JP, Lin AS, Duvall CL, Guldberg RE, Mooney DJ. Host immune competence and local ischemia affects the functionality of engineered vasculature. **Microcirculation** 2007 Feb;14(2):77-88.
174. Kong HJ, Kim CJ, Huebsch N, Weitz D, Mooney DJ. Noninvasive probing of the spatial organization of polymer chains in hydrogels using fluorescence resonance energy transfer (FRET***). J Am Chem Soc***. 2007 Apr 18;129(15):4518-9.
175. Oest ME, Dupont KM, Kong HJ, Mooney DJ, Guldberg RE. Quantitative assessment of scaffold and growth factor-mediated repair of critically sized bone defects***. J Orthop Res***. 2007 Apr 5; Epub ahead or print.

176. Silva EA. Mooney DJ. Spatiotemporal control of vascular endothelial growth factor delivery from injectable hydrogels enhances angiogenesis. **J Thromb Haemost**. 2007 Mar;5(3):590-8.
177. Riddle KW. Kong HJ. Leach JK. Fischbach C. Cheung C. Anseth KS. Mooney DJ. Modifying the proliferative state of target cells to control DNA expression and identifying cell types transfected in vivo. **Mol. Ther** 2007 Feb;15(2):361-8.
178. Chen RR, Silva EA, Yuen WW, Mooney DJ. Spatio-temporal VEGF and PDGF delivery patterns blood vessel formation and maturation. **Pharmaceutical Research**. 2007 Feb;24(2):258-64. Epub 2006 Dec 2.
179. Kong HJ. Hsiong S. Mooney D. Nanoscale Cell Adhesion Ligand Regulates Nonviral Gene Delivery and Expression, **Nanoletters** 7(1): p.161-66.
180. Matsumoto T. Yung YC. Fischbach C. Kong HJ. Nakaoka R. Mooney DJ. Mechanical strain regulates endothial cell patterning in vitro. **Tissue Eng** 2007 13(1:201-217. Epub:2006 Nov 1
181. Smith MK. Mooney DJ. Hypoxia leads to necrotic hepatocyte death**. J Biomed Mater Res A** 2006 Sep 29.
182. Kong HJ. Boontheekal T. Mooney DJ. Quantifying the relation between adhesion ligand-receptor bond formation and cell phenotype. **Proc Natl Acad Sci** USA, 2006 Dec 5;103(49):18534-9.
183. Sedrakyan S. Zhou ZY. Perin L. Leach K. Mooney D. Kim TH. Tissue engineering of a small hand phalanx with a porously casted polylactic acid-polyglycolic acid copolymer. **Tissue Eng** 2006 12(9):2675=2683.
184. Ennett AB. Kaigler D. Mooney DJ. Temporarily regulated delivery of VEGF in vitro and in vivo. **J. Biomed Mater Res A** 2006 Jun 20 (Epub ahead of print)
185. Kaigler D. Wang Z. Horger K. Mooney DJ. Kresbsbach PH. VEGF scaffolds enhance angiogenesis and bone regeneration in irradiated osseous defects. **J Bone Miner Res**. 2006 May;21(5);735-44.
186. Hill E. Boontheekul T. Mooney DJ. Designing scaffolds to enhance transplanted myoblast survival and migration. **Tissue Eng** 2006;12(5): 1295-1303.
187. Hsiong S. Mooney D. Regeneration of vascularized bone, **Periodontol** 2000, 2006;41:109-122.
188. Kaigler D. Krebsbach PH. Wang Z. West ER. Horger K. Mooney DJ. Transplanted endothelial cells enhance orthotopic bone regeneration. **J Dent Res** 2006 Jul;85(7):633-7.
189. Nakaoka R. Hsiong SX. Mooney DJ. Regulation of chondrocyte differentiation level via co-culture with osteoblasts. **Tissue Eng** 2006 12(9):2425-2433.
190. Zhao BQ. Wang S. Kim HY. Storrie H. Rosen BR. Mooney DJ. Wang X. Lo EH. Role of matrix metalloproteinases in delayed cortical responses after stroke. **Nat Med** 2006 Apr;12(4):441-445. Epub: 2006 Mar 26.
191. Smith MK. Riddle KW. Mooney DJ. Delivery of hepatotrophic factors fails to enhance longer-term survival of subcutaneously transplanted hepatocytes**. Tissue Eng** 2006 Feb;12(2):235-44.
192. Leach JK. Kaigler D. Wang Z. Krebsbach PH. Mooney DJ. Coating of VEGF-releasing scaffolds with bioactive glass for angiogenesis and bone regeneration. **Biomaterials** 2006 Jun;27(117):3249-55. Epub 2006 Feb 21.
193. Hill EE, Boontheekul T, Mooney DJ. Regulating activation of transplanted cells controls tissue regeneration. **Proc Natl Acad Sci** 2006;103(8):2494-2499.

194. Comisar WA, Hsiong SX, Kong HJ, Mooney DJ, Linderman JJ. Multi-scale modeling to predict ligand presentation within RGD nanopatterned hydrogels. **Biomaterials** 27:2322-9, 2006.
195. Kumar P. Benedict R. Urzua F. Fischbach C. Mooney D. Polverini P. Combination treatment significantly enhances the efficacy of antitumor therapy by preferentially targeting angiogenesis**. Laboratory Investigation** 2005: 85(6)756-67.
196. Sun Q, Chen RR, Shen Y, Mooney DJ, Rajagopalan S, Grossman PM. Sustained vascular endothelial growth factor delivery enhances angiogenesis and perfusion in ischemic hind limb**. Pharm Res** 2005 Jul;22(7):1110-6. Epub.
197. Murphy W. Hsiong S. Richardson T. Simmons C. Mooney DJ. Effects of a bone-like mineral film on phenotype of adult human mesenchymal stem cells in vitro**. Biomaterials** 26(3): 303-10, 2005.
198. Huang YC, Riddle K, Rice KG, Mooney DJ. Long-term in vivo gene expression via delivery of PEI-DNA condensates from porous polymer scaffolds. **Hum Gene Ther** 2005 May;16(5):609-17.
199. Kong HJ, Liu J, Riddle K, Matsumoto T, Leach K, Mooney DJ. Non-viral gene delivery regulated by stiffness of cell adhesion substrates. **Nature Mater** 2005 Jun;4(6):460-4. Epub 2005 May 15.
200. Huang YC, Kaigler D, Rice KG, Krebsbach PH, Mooney DJ. Combined angiogenic and osteogenic factor delivery enhances bone marrow stromal cell-driven bone regeneration. **J Bone Miner Res** 2005 May;20(5):848-57. Epub 2004 Dec 20.
201. Drury JL, Boontheekul T, Mooney DJ. Cellular cross-linking of peptide modified hydrogels. **J Biomech Eng** 2005 Apr; 127(2):220-8.
202. Kong HJ. Polte T. Alsberg E. Mooney DJ. FRET measurements of cell-traction forces and nano-scale clustering of adhesion ligands varied by substrate stiffness. **Proc. Natl. Acad. Sci** 2005 Mar 22;102(12):4300-5. Epub 2005 Mar 14.
203. Kaigler D. Krebsbach PH. West ER. Horger K. Huang YC. Mooney DJ. Endothelial cell modulation of bone marrow stromal cell osteogenic potential. **FASEB** 2005 Apr; 19(6):665-7. Epub 2005 Jan 27.
204. Leach JK. Mooney DJ. Bone engineering by controlled delivery of osteoinductive molecules and cells. **Expert Opinion on Biological Therapy** 4(7):1015-27, 2004 Jul.
205. Riddle KW. Mooney DJ. Role of poly(lactide-co-glycolide) particle size on gas-foamed scaffolds. **J Biomaterials Science** Polymer edition. 15(12):1561-70, 2004.
206. Huang YC. Simmons C. Riddle K. Rice KG. Mooney DJ. Bone regeneration in a rat cranial defect with delivery of PEI-condensed plasmid DNA encoding for bone morphogenetic protein-4 (BMP-4). **Gene Therapy** (12)418-426, 2005.
207. Boontheekul T. Kong HJ. Mooney DJ. Controlling alginate gel degradation utilizing partial oxidation and bimodal molecular weight distribution**. Biomaterials** 26:2455-65, 2005.
208. Kim BS. Jeong SI. Cho SW. Nikolovski J. Mooney DJ. Lee SH. Jeon O. Kim TW. Lim TW. Hong YS. Choi CY. Lee YM. Kim SH. Kim YH. Tissue engineering of smooth muscle under a mechanically dynamic condition. **J. Microbio. & Biotech** 2005.
209. Grikscheit TC, Ochoa ER, Alsberg E, Mooney DJ, Vacanti JP: Tissue engineered small intestine improves recovery after massive small bowel resection. **Ann Surg** 2004 Nov;240(5):748-54.
210. Kong HJ. Alsberg E. Darnell K. Lee KY. Mooney DJ. Controlling degradation of hydrogels via the size of cross-linked junctions. **Adv Mat** 16(21):1917-1921, 2004.
211. Silva EA. Mooney DJ. Synthetic Extracellular Matrices for Tissue Engineering and Regeneration. **Current Topics in Developmental Biology** 64:181-205, 2004.
212. Fiegel HC. Havers J. Kneser U. Smith MK. Moeller T. Kluth Mooney DJ DJ. Rogiers X, Kaufmann PM. Influence of flow conditions and matrix coatings on growth and

differentiation of three-dimensionally cultured rat hepatocytes. **Tissue Eng** 10(1-2):165-74, 2004.
213. Huang YC. Connell M. Park Y. Mooney DJ. Rice KG. Fabrication and *in vitro* testing of polymeric delivery system for condensed DNA**. J Biomed Mat Res** 67A(4):1384-92, 2003.
214. Kong HJ. Wong E. Mooney DJ. Independent control of rigidity and toughness of polymeric hydrogels. **Macromolecules** 36:4582, 2003.
215. Smith MK. Peters MC. Richardson TP/ Garbern JC. Mooney DJ. Locally enhanced angiogenesis promotes transplanted cell survival. **Tissue Eng** 10(1-2):63-71, 2004.
216. Drury J. Dennis R. Mooney DJ. Tensile properties of alginate hydrogels. **Biomaterials** 25:3187-99, 2004.
217. Kong HJ. Kaigler D. Kim K. Mooney DJ. Controlling rigidity and degradation of alginate hydrogels via molecular weight distribution. **Biomacromolecules** 5(5):1720-7, 2004.
218. Simmons CA. Matlis S. Thornton AJ. Chen S. Wang CY. Mooney DJ. Cyclic strain enhances matrix mineralization by adult human mesenchymal stem cells via the extracellular signal-regulated kinase (ERK1/2) signaling pathway. **J Biomech** 2003 36:1087-1096.
219. Murphy WL Simmons CA. Kaigler Mooney DJ. Bone regeneration via a mineral substrate and induced angiogenesis. **J Dent Res** 2004 83:204-210.
220. Simmons CA. Nikolovski J. Thornton AJ. Matlis S. Mooney DJ. Mechanical stimulation and mitogen-activated protein kinase signaling independently regulate osteogenic differentiation and mineralization by calcifying vascular cells**. J Biomech** 2004 37:1531-41.
221. Alsberg E. Kong HJ. Hirano Y. Smith MK. Albeiruti A. Mooney DJ. Regulating bone formation via controlled scaffold degradation. **J Dental Research** 82(11): 903-908, 2003.
222. Thornton AJ. Alsberg E. Albertelli M. Mooney DJ. Shape-defining scaffolds for minimally invasive tissue engineering. **Transplantation** 77(12):1798-1803, 2004.
223. Thornton AJ. Alsberg E. Hill EE. Mooney DJ. Shape retaining injectable hydrogels for minimally invasive bulking. **Journal of Urology** 172(2):763-768, 2004.
224. Grimmer JF. Gunnlaugsson CB. Alsberg E. Murphy HS. Kong HJ. Mooney DJ. Weatherly RA: Tracheal reconstruction using tissue-engineered cartilage**. Otolaryngology - Head and Neck Surgery** 130:1191-1196, 2004.
225. Kong HJ. Alsberg E. Kaigler D. Lee KY. Mooney DJ. Nondestructively Probing the Cross-Linking Density of Polymeric Hydrogels. **Macromolecules** 36, 7887-7890, 2004.
226. Murphy W. Hsiong S. Richardson T. Simmons C. Mooney DJ. Effects of a bone-like mineral film on phenotype of adult human mesenchymal stem cells in vitro. **Biomaterials** 26(3): 303-10, 2005.
227. Simmons C. Alsberg E. Hsiong S. Kim W. Mooney DJ. Dual growth factor delivery and controlled scaffold degradation enhance in vivo bone formation by transplanted bone marrow stromal cells, **Bone** 35(2): 562-9, 2004.
228. Lee KY. Alsberg E. Hsiong S. Comisar W. Linderman J. Ziff, R. Mooney DJ. Nanoscale adhesion ligand organization regulates osteoblast proliferation and differentiation. **Nano Letters** 4(8):1501-1506, 2004.
229. Hirano Y. Mooney DJ. Peptide and protein presenting materials for tissue engineering. **Advanced Materials** 16:17-25, 2004.
230. Lee KY. Bouhadir KH. Mooney DJ. Controlled degradation of hydrogels using multi-functional cross-linking molecules. **Biomaterials** 25(13):2461-6, 2004.
231. Genes NG. Rowley JA. Mooney DJ. Bonassar LJ. Effect of substrate mechanics on chondrocyte adhesion to modified alginate surfaces. **Archives of Biochemistry & Biophysics** 422(2):161-7, 2004.
232. Kong HJ. Lee KY. Mooney DJ. Non-destructively probing the crosslinking density of polymeric hydrogels. **Macromolecules** 36:7887-90, 2003.

233. Lee KY. Kong HJ. Mooney DJ. Hydrogel formation via cell cross-linking. **Advanced Materials** 15:828-32, 2003.
234. Murphy W. Dennis R. Kileny J. Mooney DJ. Salt fusion: an approach to improve pore connectivity within tissue engineering scaffolds**. Tissue Eng** 8:43-52, 2003.
235. Alsberg E. Kong HJ. Hirano Y. Smith MK. Albeiruti A. Mooney DJ. Regulating bone formation via controlled scaffold degradation**. J. Dent. Res** 82:903-908, 2003.
236. Kong HJ. Mooney DJ. The effects of poly(ethyleneimine) (PEI) molecular weight on reinforcement of alginate hydrogels. **Cell Transplantation** 12:779-785, 2003.
237. Fiegel HC. Havers J. Kneser U. Smith MK. Moeller T. Kluth D. Mooney DJ. Rogiers X. Kaufmann PM. Influence of flow conditions and matrix coatings on growth and differentiation of three-dimensionally cultured rat hepatocytes. **Tissue Eng** 10:165-174, 2004.
238. Drury JL. Mooney DJ. Hydrogels for tissue engineering: scaffold design variables and applications. **Biomaterials** 24:4337-4351, 2003.
239. Chen RR. Mooney DJ. Polymeric growth factor delivery strategies for tissue engineering. **Pharmaceutical Res** V20N8:1103-1112, 2003.
240. Polverini PJ. Nor JE. Peters MC. Mooney DJ. Growth of human blood vessels in severe combined immunodeficient mice – a new in vivo model system of angiogenesis. **Wound Healing: Methods and Protocols** 78:161-177, 2003.
241. Grikscheit TC. Ochoa ER. Ramsanahie A. Alsberg E. Mooney D. Whang EE. Vacanti JP. Tissue-engineered large intestine resembles native colon with appropriate in vitro physiology and architecture. **Annals of Surgery** 238(1):35-41, 2003.
242. Lee SH. Kim BS. Kim SH. Choi SW. Jeong SI. Kwon IK. Kang SW. Nikolovski J. Mooney DJ. Han YK. Kim YH. Elastic biodegradable poly(glycolide-co-caprolactone) scaffold for tissue engineering. **J Biomed Mater Res** 66A(1):29-37, 2003.
243. Richardson T. Murphy W. Mooney DJ. Selective adipose tissue ablation by localized, sustained drug delivery. **J Plastic Recon. Surg** 112:162-170, 2003.
244. Simmons CA. Matlis S. Thornton AJ. Chen S. Wang CY. Mooney DJ. Cyclic strain enhances matrix mineralization by adult human mesenchymal stem cells via the extracellular signal-regulated kinase (ERK1/2) signaling pathway. **J Biomechanics** 36:1087-1096, 2003.
245. Kong HJ. Smith MK. Mooney DJ. Designing alginate hydrogels to maintain viability of immobilized cells. **Biomaterials** 24:4023-4029, 2003.
246. Tavakkolizadeh, A. Berger UV. Stephen AE. Kim BS. Mooney DJ. Hediger MA. Ashley SW. Vacanti JP. Whang EE. Tissue-engineered neomucosa: Morphology, enterocyte dynamics, and SGLT1 expression topography. **Transplantation** 75(2):181-185, 2003.
247. Kaigler D. Krebsbach PH. Polverini PJ. Mooney DJ. Role of vascular endothelial growth factor in bone marrow stromal cell modulation of endothelial cells. **Tissue Eng** 9(1):95-103, 2003.
248. Nikolovski J. Kim BS. Mooney DJ. Cyclic strain inhibits switching of smooth muscle cells to an osteoblast-like phenotype. **FASEB J** 17(3):455-457, 2003.
249. Lee KY. Peters MC. Mooney DJ. Comparison of vascular endothelial growth factor and basic fibroblast growth factor on angiogenesis in SCID mice. **J Control Release** 87:49-56, 2003.
250. Putnam A. Cunningham J. Mooney DJ. External mechanical strain regulates membrane targeting of Rho GTPases by controlling the state of microtubule polymerization. **Amer J Physiol Cell Physiol** 284:C627-C639, 2003.
251. Lee KY. Bouhadir KH. Mooney DJ. Evaluation of chain stiffness of partially oxidized polyguluronate. **Biomacromolecules** 3(6): 1129-1134, 2002.
252. Kong HJ. Lee KY. Mooney DJ. Decoupling the dependence of rheological/mechanical properties of hydrogels from solids concentration. **Polymer** 43:6239-6246, 2002.
253. Cunningham JJ. Linderman JL. Mooney DJ. Externally applied cyclic strain regulates localization of focal contact components in cultured smooth muscle cells. **Ann Biomed Eng** 30:927-935 2002
254. Alsberg E. Anderson KW. Albeiruti A. Rowley JA. Mooney DJ. Engineering growing tissues. **Proc Nat Acad Sci** 99(19): 12025-12030, 2002.

255. Richardson TP. Mooney DJ. Multiple growth factor delivery from polymer systems for regenerative medicine. **Gene and Medicine** 6(3), (373)17-(377)21, 2002.
256. Aframian DJ. Redman RS. Yamano S. Nikolovski J. Cukierman D. Yamada KM. Kriete MF. Swaim WD. Mooney DJ. Baum BJ. Tissue compatibility of two biodegradable tubular scaffolds implanted beneath the skin or buccal mucosa in mice. **Tissue Eng** 8(4):649-659 2002
257. Grikscheit TC. Ogilvie JB. Ochoa ER. Alsberg E. Mooney DJ. Vacanti JP. Tissue-engineered colon exhibits function in vivo. **Surgery** 132(2):200-204, 2002.
258. Rowley J. Sun Z. Goldman D. Mooney DJ. Biomaterials to spatially regulate cell fate. **Advanced Materials** 14 (12):886-889, 2002.
259. Cunningham JJ. Nikolovski J. Linderman JJ. Mooney DJ. Quantification of fibronectin adsorption to silicone rubber cell culture substrates. **BioTechniques** 32(4):876-880, 2002.
260. Murphy WL. Dennis RG. Kileny JL. Mooney DJ. Salt fusion: an approach to improve pore interconnectivity within tissue engineering scaffolds. **Tissue Eng** 8:43-52, 2002.
261. Murphy WL. Mooney DJ. Bioinspired growth of crystalline carbonate apatite on biodegradable polymer substrata. **J Am Chem Soc** 124 (9):1910-1917, 2002.
262. Rowley J. Mooney DJ. Alginate type and RGD density control myoblast phenotype. **J Biomed Mater Res** 60:217-223, 2002.
263. Alsberg E. Anderson K. Albeiruti A. Franceschi R. Mooney DJ. Cell interactive alginate hydrogels for bone tissue engineering. **J Dent Res** 80 (11):2025-29, 2001.
264. Richardson TP. Peters MC. Ennett AB. Mooney DJ. Polymeric system for dual growth factor delivery. **Nature Biotechnology** 19:1029-1034, 2001.
265. Bouhadir KH. Alsberg E. Mooney DJ. Hydrogels for combination delivery of antineoplastic agents. **Biomaterials** 22:2625-2633, 2001.
266. Peters MC. Polverini PJ. Mooney DJ. Engineering vascular networks in porous polymer matrices. **J Biomed Mater Res** 60:668-78, 2002.
267. Halberstadt C. Austin C. Rowley J. Culberson C. Mooney DJ. Holder W. A hydrogel material for plastic and reconstructive applications injected into the subcutaneous space of sheep. **Tissue Eng** 8:309-320, 2002.
268. Lee KY. Mooney DJ. Hydrogels for tissue engineering. **Chemical Reviews** 101:1869-1880, 2001.
269. Loebsack A. Green K. Mooney DJ. Holder W. Halberstadt C. In vivo characterization of a porous hydrogel material for use as a tissue bulking agent. **J Biomed Mate. Res** 57:575-81, 2001.
270. Bouhadir KH. Mooney DJ. Promoting angiogenesis in engineered tissues. **J Drug Targeting** 9:397-406, 2001.
271. Bouhadir KH. Lee KY. Alsberg E. Damm KL. Anderson KW. Mooney DJ. Degradation of partially oxidized alginate and its potential application for tissue engineering. **Biotechnol Prog** 17:945-950, 2001.
272. Aframian DJ. Zheng C. Goldsmith CM. Nikolovski J. Cukierman E. Yamada KM. Mooney DJ. Birkedal-Hansen H. Baum BJ. Using HSV-thymidine kinase for safety in an allogeneic salivary graft cell line. **Tissue Eng** 7(4):405-413, 2001.
273. Lee KY. Mooney DJ. Cell-interactive polymers for tissue engineering. **Fibers and Polymers** 2:51-59, 2001.
274. Lee KY. Peters MC. Mooney DJ. Controlled drug delivery from polymers by mechanical signals. **Advanced Materials** 13:837, 2001.
275. Lee KY. Alsberg E. Mooney DJ. Degradable and injectable poly(aldehyde guluronate) hydrogels for bone tissue engineering. **J Biomed Mater Res** 56(2):228-33, 2001.
276. Chang SCN. Rowley JA. Tobias G. Genes NG. RoyAK. Mooney DJ. Vacanti,CA. Bonassar LJ. Injection molding of chondrocyte/alginate constructs in the shape of facial implants. **J Biomed Mat Res** 55(4):503-11, 2001.
277. Putnam AJ. Schultz K. Mooney DJ. Control of microtubule assembly with the extracellular matrix and externally applied strain. **Am J Physiol Cell Physiol** 280:C556-C564, 2001.

278. Nor JE. Christensen J. Liu J. Peters M. Mooney DJ. Strieta RM. Polverini PJ. Upregulation of Bcl-2 in endothelial cells induces IL-8 expression and enhances tumor angiogenesis and tumor growth. **Cancer Res** 61:2183-2188, 2001.
279. Nor JE. Peters MC. Christensen JB. Sutorik MM. Linn S. Khan MK. Addison CL. Mooney DJ. Polverini PJ. Engineering and characterization of functional human microvessels in immunodeficient mice. **Lab Investigation** 81(4):453-463, 2001.
280. Cortiella J. Barbani S. Spangenberger K. Roy A. Mooney DJ. Rowley J. Vacanti C. Bonassar L. Culture of tracheal epithelial cells on a modified alginate matrix**. FASEB J** 14(4):A445-A445, 2000.
281. Lee KY. Peters MC. Anderson KW. Mooney DJ. Controlled growth factor release from synthetic extracellular matrices. **Nature** 408:998-1000, 2000.
282. Shea LD. Wong D. Franceschi RT. Mooney DJ. Engineered bone development from a pre-osteoblast cell line on three-dimensional scaffolds. **Tissue Eng** 6:605-618, 2000.
283. Murphy WL. Peters MC. Kohn DH. Mooney DJ. Sustained release of vascular endothelial growth factor from mineralized poly(lactide-co-glycolide) scaffolds for tissue engineering. **Biomaterials** 21:2521-2527, 2000.
284. Nikolovski J. Mooney DJ. Smooth muscle cell adhesion to tissue engineering scaffolds. **Biomaterials** 21(20):2025-2032, 2000.
285. Robey TC. Eiselt PM. Murphy HS. Mooney DJ. Weatherly RA. Biodegradable external tracheal stents and their use in a rabbit tracheal reconstruction model. **Laryngoscope** 110(11):1936-1942, 2000.
286. Robey TC. Valimaa T. Murphy HS. Tormala P. Mooney DJ. Weatherly RA. Use of internal bioabsorbable PLGA "finger-type" stents in a rabbit tracheal reconstruction model. **Archives of Otolaryngology -- Head & Neck Surgery** 126(8):985-991, 2000.
287. Lee KY. Rowley J. Moy E. Bouhadir K. Mooney DJ. Controlling mechanical and swelling properties of alginate hydrogels independently by cross-linker type and cross-linking density. **Macromolecules** 33:4291-4294, 2000.
288. Kim BS. Mooney DJ. Scaffolds for engineering smooth muscle under cyclic mechanical strain conditions. **J Biomechanical Eng** 122:210-215, 2000.
289. Bouhadir K. Crane G. Lee KY. Mooney DJ. Controlled release of daunomycin from cross-linked poly (aldehyde guluronate) hydrogels. **J Pharm Sci** 89:910-919, 2000.
290. Kaihara S. Kim S. Kim BS. Mooney DJ. Tanaka K. Vacanti. JP. Survival and function of rat hepatocytes cocultured with nonparenchymal cells or sinusoidal endothelial cells on biodegradable polymers under flow conditions. **J Ped Surg** 35:1287-1290, 2000.
291. Burg KL. Holder WD. Culberson CR. Beiler RJ. Greene KG. Loebsack AB. Roland WD. Eiselt P. Mooney DJ. Halberstadt CR. Comparative study of seeding methods for three-dimensional polymeric scaffolds. **J Biomed Mater Res** 51:642-649, 2000.
292. Eiselt P. Yeh J. Latvala RK. Shea LD. Mooney DJ. Porous carriers for biomedical applications based on alginate hydrogels. **Biomaterials** 21:1921-1927, 2000.
293. Nor JR. Mitra RS. Castle V. Mooney DJ. Polverini PJ. Thrombospondin-1 inhibits angiogenesis by activating caspase-3 and inducing endothelial cell apoptosis. **J Vasc Res** 37:209-218, 2000.
294. Aframian DJ. Cukierman E. Nikolovski, J. Mooney DJ. Yamada KM. Baum BJ. The growth and morphological behavior of salivary epithelial cells on matrix protein-coated biodegradable substrata. **Tissue Eng** 6:209-216, 2000.
295. Kim SS. Sundback CA. Kaihara S., Benvenuto MS. Kim BS. Mooney DJ. Vacanti JP. Dynamic seeding and in vitro culture of hepatocytes in a flow perfusion system. **Tissue Eng** 6:39-44, 2000.
296. Marler JJ. Guha A. Rowley J. Koka R. Mooney DJ. Upton J. Vacanti JP. Soft-tissue augmentation with injectable alginate and syngeneic fibroblasts. **Plastic & Reconstructive Surgery** 105(6):2049-2058, 2000.
297. Brown AN. Kim BS. Alsberg E. Mooney DJ. Hybrid tissues for soft tissue engineering. **Tissue Eng** 6:297-305, 2000.
298. Kaihara S. Kim SS. Kim BS. Mooney DJ. Tanaka K. Vacanti JP. Long-term follow up of tissue engineered intestine after anastomosis to native small bowel. **Transplantation** 69:1927-1932, 2000.

299. Lee KY. Bouhadir K. Mooney DJ. Degradation behavior of covalently cross-linked poly (aldehyde guluronate) hydrogels. **Macromolecules** 33:97-101, 2000.
300. Murphy WI. Kohn DH. Mooney DJ. Growth of a continuous bone-like mineral within porous poly(lactide-co-glycolide) scaffolds in vitro**. J Biomed Mater Res** 50:50-58, 2000.
301. Sheridan ME. Shea LD. Peters MC. Mooney DJ. Bioabsorbable polymer scaffolds for tissue engineering capable of sustained growth factor delivery. **J Control Rel** 64:91-102, 2000.
302. Cohn NA. Kim BS. Erkamp RQ. Mooney DJ. Emelianov SY. O'Donnell M. High resolution elasticity imaging for tissue engineering**. IEEE Trans Ultrasonics Ferroelectronics and Frequency Control** 47:956-966, 2000.
303. Kim BS. Nikolovski J. Bonadio J. Mooney DJ. Cyclic mechanical strain regulates the development of engineered smooth muscle tissue. **Nature Biotech** 17:979-983, 1999.
304. Kim SS. Kaihara S. Benvenuto M. Choi RS. Kim BS. Mooney DJ. Vacanti JP. Effects of astomosis of tissue-engineered neointestine to native small bowel**. J Surg Res** 87:6-13, 1999.
305. Eiselt P. Lee KY. Mooney DJ. Rigidity of two-component hydrogels prepared from alginate and polyethylene glycol diamines. **Macromolecules** 32:5561-5566, 1999.
306. Kim BS. Nikolovski J. Smiley E. Bonadio J. Mooney DJ. Three-dimensional synthetic scaffolds regulate the phenotype of smooth muscle cells in engineered tissues. **Experimental Cell Res** 251:318-328, 1999.
307. Kaihara S. Kim SS. Benvenuto M. Kim BS. Mooney DJ. Tanaka K. Vacanti JP. End-to-end anastomosis between tissue-engineered intestine and native small bowel. **Tissue Eng** 4:339-346, 1999.
308. Shea LD. Smiley E. Bonadio J. Mooney DJ. Controllable DNA delivery from polymer matrices. **Nature Biotechnol** 17(6):551-554, 1999.
309. Nor JE. Christensen J. Mooney DJ. Polverini PJ. VEGF enhances the survival of endothelial cells and sustains angiogenesis by inducing expression of Bcl-2. **Am J Pathol** 154:375-384, 1999.
310. Burg KL. Holder W. Culberson C. Beiler R. Greene K. Loebsack K. Roland W. Mooney DJ, Halberstadt C.. Parameters affecting cell adhesion to polylactide films. **J Biomat Sc. Polym Edn** 10:147-162, 1999.
311. Kaihara S. Kim SS. Benvenuto M. Choi R. Kim BS. Mooney DJ. Tanaka K. Vacanti JP. Successful anastomosis between tissue-engineered intestine and native small bowel. **Transplantation** 67: 241-245, 1999.
312. Kim, SS. Kaihara S. Benvenuto M. Choi RS. KimBS. Mooney DJ. Taylor GA. Vacanti JP. Regenerative signals for intestinal epithelial organoid units transplanted on biodegradable polymer scaffolds for the tissue engineering of small intestine. **Transplantation** 67: 227-233, 1999.
313. Kim SS. Kim BS. Mooney DJ. Vacanti JP. Small intestinal submucosa as a small-caliber venous graft: a novel model for hepatocyte transplantation on synthetic biodegradable polymer scaffolds with direct access to the portal venous system. **J Ped Sur** 34:124-128, 1999.
314. Putnam AJ. Cunningham J. Lindermann J. Mooney DJ. Microtubule assembly is regulated by externally applied strain in cultured smooth muscle cells. **J Cell Sci** 111:3379-3387, 1998.
315. Bouhadir KH. Haussman D. Mooney DJ. Synthesis and mechanical properties of cross-linked poly(aldehyde guluronate) hydrogels. **Polymer** 40:3575-3584, 1999.
316. Rowley J. Madlambayan G. Faulkner J. Mooney DJ. Alginate hydrogels as synthetic extracellular matrix materials. **Biomaterials** 20:45-53, 1999.
317. Peters MC. Isenberg B. Rowley J. Mooney DJ. Controlled delivery of bFGF from alginate enhances its biological activity. **J Biomat Sci Polym Edn** 9:1267-1278, 1998.
318. Harris LK. Kim BS. Mooney DJ. Open pore matrices formed with gas foaming. **J Biomed Mate. Re.** 42:396-401, 1998.
319. Bohl KS. Shon J. Rutherford B. Mooney DJ. Role of synthetic extracellular matrix in development of engineered dental pulp. **J Biomat Sci: Polym Edn** 9:749-764, 1998.

320. Holder WD. Gruber HE. Moore AL. Culberson CR. Anderson CA. Burg K. Mooney DJ. Cellular ingrowth and thickness changes in poly-L-lactide and polyglycolide matrices implanted subcutaneously in the rat. **J Biomed Mater Res** 41:412-421, 1998.
321. Kim, BS. Mooney DJ. Engineering smooth muscle tissue with a pre-defined structure. **J Biomed Mater Res** 41:322-332, 1998.
322. Eiselt P. Chakho B. Isenberg B. Peters M. Burg K. Holder W. Halberstadt C. Mooney DJ. Development of technologies aiding large tissue engineering. **Biotech Prog** 14:134-140, 1998.
323. Kim BS. Mooney DJ. Development of biocompatible synthetic extracellular matrices for tissue engineering. **Trends in Biotech** 16:224-230, 1998.
324. Choi RS. Kim BS. Mooney DJ. Vacanti JP. Expression of brush border enzymes and formation of basement membrane from transplanted intestinal epithelial organoid units using biodegradable tubular scaffolds**. J Ped Surg** 33:991-997, 1998.
325. Kim BS. Putnam A.Kulik T. Mooney DJ. Optimizing cell seeding and culture conditions to engineer smooth muscle tissue on biodegradable polymer matrices. **Biotech Bioeng** 57:46-54, 1998.
326. Kaufmann PM. Heimrath S. Kim BS. Mooney DJ. Highly porous polymer matrices as three-dimensional culture systems for hepatocytes. **Cell Transplant** 6:463-468, 1997.
327. Mooney DJ. Sano K. Kaufmann PM. Majahod K. Schloo B. Vacanti JP. Langer R. Long-term engraftment of hepatocytes transplanted on biodegradable polymer sponges. **J Biomed Mat Res** 37:413-420, 1997.
328. Holder WD. Gruber HE. Roland WE. Moore AL. Culberson CR. Loebsack AB. Burg KJ. Mooney DJ. Increased vascularization and heterogeneity of vascular structures occurring in polyglycolide matrices containing aortic endothelial cells implanted in the rat. **Tissue Eng** 3:149-160, 1997.
329. Mooney DJ. Powell C. Piana J. Rutherford B. Engineering dental pulp tissue. **Biotechnol Prog** 12:865-869, 1996.
330. Kim W. Vacanti JP. Mooney DJ. Upton J. Ibarra C. Vacanti CA. Functional viability of chondrocytes stored at 4^{o}C. **Tissue Eng** 3: 333, 1997.
331. Mooney DJ. Baldwin F. Suh NP. Vacanti JP. Langer R.. A novel approach to fabricate porous sponges of poly (D,L-lactic-co-glycolic acid) without the use of organic solvents. **Biomaterials** 17:1417-1422, 1996.
332. Mooney DJ. Mazzoni CL. Breuer C. McNamara KM. Hern D. Vacanti JP. Langer R. Stabilized polyglycolic acid fiber based tubes for tissue engineering. **Biomaterials** 17:115-124, 1996.
333. Mooney DJ. Kaufmann PM. Sano K. McNamara K. Schwendeman S. Vacanti JP. Langer R. Localized delivery of epidermal growth factor improves the survival of transplanted hepatocytes. **Biotech and Bioeng** 50(4):422-429, 1996.
334. Breuer CK. Shinoka T. Zund G. Mooney DJ. Ma PX. Langer R. Mayer JE. Vacanti JP. Tissue engineering lamb heart valve leaflets, **Biotech and Bioeng** 50(5):562-567, 1996.
335. Cusick RA. Sano K. Lee H. Pollok JM. Mooney DJ. Langer R. Vacanti JP. Heterotopic fetal rat hepatocyte transplantation on biodegradable polymers. **Surgical Forum** XLVI:658-661, 1995.
336. Vacanti CA. Kim W. Upton J. Mooney DJ. Vacanti JP. Efficacy of periosteal cells compared to chondrocytes in the tissue engineered repair of bone defects. **Tissue Eng** 1:301-308, 1995.
337. Mooney DJ. Breuer C. McNamara K. Vacanti JP. Langer R.. Fabricating tubular devices from polymers of lactic and glycolic acid for tissue engineering, **Tissue Eng** 1:107-118, 1995.
338. Ma PX. Schloo B. Mooney DJ. Langer R. Development of biomechanical properties and morphogenesis of in vitro tissue engineered cartilage. **J Biomed Mat Res** 29:1587-1598, 1995.
339. Mooney DJ. Langer R. Ingber DE. Cytoskeletal filament assembly and the control of cell shape and function by extracellular matrix, **J Cell Science** 108:2311-2320, 1995.

340. Mooney DJ. Park S. Kaufmann PM. Sano K. McNamara K. Vacanti JP. Langer R. Biodegradable sponges for hepatocyte transplantation, **J Biomed Mat Res** 29:959-966, 1995.
341. Mooney DJ. Hansen LK. Langer R. Vacanti JP. Ingber DE. Extracellular matrix controls tubulin monomer levels by regulating protein turnover. **Mol Biol Cell** 5:1281-1288, 1994.
342. Hansen LK. Mooney DJ. Vacanti JP. Ingber DE. Regulation of cell cycle progression in hepatocytes by extracellular matrix and cell spreading. **Mol Biol Cell** 5:967-975, 1994.
343. Kim WS. Vacanti CA. Puelacher W. Cima LG. Upton J. Mooney DJ. Vacanti JP. Cartilage configuration in pre-determined shapes employing cell transplantation on prosthetic biodegradable synthetic polymers. **Plastic Reconstr Surg** 94:233-237, 1994.
344. Puelacher WC. Mooney DJ. Langer R. Upton J. Vacanti JP. Vacanti CA. Design of nasoseptal cartilage replacements synthesized from biodegradable polymers and chondrocytes. **Biomaterials** 15:774-778, 1994.
345. Johnson LB. Aiken J. Mooney D. Schloo B. Cima L. Langer R. Vacanti JP. The mesentery as a laminated vascular bed for hepatocyte transplantation. **Cell Transpl** 3:273-281, 1994.
346. Puelacher WC. Mooney DJ. Langer R. Vacanti JP. Vacanti CA. Tissue engineered growth of cartilage: the effect of varying the concentration of chondrocytes seeded onto synthetic matrices**. Int'l J Oral Maxillofacial Surg** 23:49-53, 1994.
347. Mooney DJ. Organ G. Vacanti JP. Langer R. Design and fabrication of cell delivery devices to engineer tubular tissues. **Cell Transplant** 3:203-210, 1994.
348. Organ GM. Mooney DJ. Hansen LK. Schloo B. Vacanti JP. Design and transplantation of enterocyte-polymer constructs: a small animal model for neointestinal replacement in short bowel syndrome. **Surgical Forum** Vol. XLIV:432-436, 1993.
349. Mooney DJ. Hansen LK. Vacanti JP. Langer R. Farmer S. Ingber DE. Switching from differentiation to growth in hepatocytes control by extracellular matrix. **J Cell Phys** 151:497-505, 1992.
350. Cima LG. Vacanti JP. Vacanti C. Ingber D. Mooney DJ. Langer R. Tissue engineering by cell transplantation using degradable polymer substrates. **J Biomech Eng** 113:145-151, 1991.
351. Aiken J, Cima L. Schloo B. Mooney DJ. Johnson L. Langer R. Vacanti JP. Studies in rat liver perfusion for optimal harvest of hepatocytes. **J Ped Surg** 25:140-145, 1990.

2. Review Articles and Commentaries

1. Vining KH, Mooney DJ. Mechanical forces direct stem cell behaviour in development and regeneration.**Nat Rev Mol Cell Biol**. 2017 Dec;18(12):728-742. doi: 10.1038/nrm.2017.108. Epub 2017 Nov 8. Review. PMCID: in process
2. Giannobile WV, Chai Y, Chen Y, Healy KE, Klein O, Lane N, Longaker MT, Lotz JC, Mooney DJ, Sfeir CS, Urata M, Wagner WR, Wu BM, Kohn DH. Dental, Oral, and Craniofacial Regenerative Medicine: Transforming Biotechnologies for Innovating Patient Care, **J Dent Res**. 2018 Apr;97(4):361-363. doi: 10.1177/0022034518761346. PMCID:PMD5863875
3. Kwee BJ, Mooney DJ. Biomaterials for skeletal muscle tissue engineering. **Curr Opin Biotechnol**. 2017 Oct;47:16-22. doi: 10.1016/j.copbio.2017.05.003. Epub 2017 May 30. Review. PMCID: PMC5617779
4. Gu L, Mooney DJ. Biomaterials and emerging anticancer therapeutics: engineering the microenvironment. **Nat Rev Cancer**. 2015 Dec 23;16(1):56-66. doi: 10.1038/nrc.2015.3.PMID: 26694936
5. Mao AS, Mooney DJ. Regenerative medicine: Current therapies and future directions. **Proc Natl Acad Sci U S A**. 2015 Nov 24;112(47):14452-9. doi: 10.1073/pnas.1508520112. PMCID: PMC4664309.

6. Cheung AS, Mooney DJ. Engineered Materials for Cancer Immunotherapy. **Nano Today.** 2015 Aug 1;10(4):511-531. PMCID: PMC4665104.
7. Brudno Y, Mooney DJ. On-demand drug delivery from local depots. **J Control Release**. 2015 Sep 13. pii: S0168-3659(15)30113-9. doi: 10.1016/j.jconrel.2015.09.011.
8. Volk HD, Stevens MM, Mooney DJ, Grainger DW, Duda GN. Key elements for nourishing the translational research environment. **Sci Transl Med**. 2015 Apr 8;7(282):282cm2. doi: 10.1126/scitranslmed.aaa2049.
9. Schmidt-Bleek K, Kwee BJ, Mooney DJ, Duda G. Boon and Bane of Inflammation in Bone Tissue Regeneration and Its Link with Angiogenesis. **Tissue Eng Part B Rev**. 2015 Mar 6. [Epub ahead of print].
10. Duda GN, Grainger DW, Frisk ML, Bruckner-Tuderman L, Carr A, Dirnagl U, Einhäupl KM, Gottschalk S, Gruskin E, Huber C, June CH, Mooney DJ, Rietschel ET, Schütte G, Seeger W, Stevens MM, Urban R, Veldman A, Wess G, Volk HD. Changing the mindset in life sciences toward translation: a consensus. **Sci Transl Med**. 2014 Nov 26;6(264):264cm12. doi: 10.1126/scitranslmed.aaa0599.PMCID: 25429054.
11. Kwee BJ, Mooney DJ. Manipulating the Intersection of Angiogenesis and Inflammation. **Ann Biomed Eng**. 2014 Oct 15. [Epub ahead of print] PMCID: PMC4380659.
12. Cezar CA, Mooney DJ. Biomaterial-based delivery for skeletal muscle repair. **Adv Drug Deliv Rev**. 2014 Sep 28. pii: S0169-409X(14)00206-3. doi: 10.1016/j.addr.2014.09.008. [Epub ahead of print] Review.PMCID: PMC4377112.
13. Reinhart-King CA, Mooney DJ, Schaffer DV. The Young Innovators of Cellular and Molecular Bioengineering. **Cell Mol Bioeng**. 2014 Sep 1;7(3):291-292. PMCID: PMC4188399.
14. Chaudhuri O, Mooney, DJ. Stem-cell differentiation: Anchoring cell-fate cues. **Nature Mater**. 2012 Jun 21; 11(7): 568-9. doi: 10.1038/nmat3366. PMID 22717486.
15. Li WA, Mooney DJ. Materials based tumor immunotherapy vaccines. **Curr Opin Immunol.** 2013 Jan 18. doi:pii: S0952-7915(12)00198-10.1016/j.coi.2012.12.008. [Epub ahead of print] PMCID: PMC3644528.
16. Mehta, M, Schmidt-Bleek K, Duda GN, Mooney DJ. Biomaterial delivery of morphogens to mimic the natural healing cascade in bone. **Adv Drug Deliv Rev.** 2012 May 22. [Epub ahead of print] PMCID: PMC3425736.
17. Lee, KY, Mooney DJ. Alginate: properties and biomedical applications. **Prog Polym Sci.** 2012 Jan; 37(1):106-126. PMCID: PMC3223967.
18. Ali OA, Mooney DJ. Immunologically active biomaterials for cancer therapy. **Curr Top Microbiol Immunol.** 2011;344:279-97. PMID: 20556594.
19. Arany PR, Mooney DJ. At the edge of translation - materials to program cells for directed differentiation. **Oral Dis.** 2011 Apr;17(3):241-51. doi: 10.1111/j.1601-0825.2010.01735.x. Epub 2010 Sep 23. PMCID: PMC3049851.
20. Huebsch N, Mooney DJ. Inspiration and application in the evolution of biomaterials. **Nature**. 2009 Nov 26;462(7272):426-32. Review.
21. Discher DE, Mooney DJ, Zandstra PW. Growth factors, matrices, and forces combine and control stem cells. **Science**. 2009 Jun 26;324(5935):1673-7. Review.
22. Kong HJ. Mooney DJ. Microenvironmental regulation of biomacromolecular therapies. **Nat Rev Drug Discov** 2007 Jun:6(6):455-63.
23. Chan G, Mooney DJ. New materials for tissue engineering: towards greater control over the biological response. **Trends Biotechnol**. 2008 Jul;26(7):382-92. Epub 2008 May 22. Review.

24. Mooney DJ, Vandenburgh H. Cell delivery mechanisms for tissue repair. **Cell Stem Cell**. 2008 Mar 6;2(3):205-13. Review.
25. Leach JK, Mooney DJ. Synthetic extracellular matrices for tissue engineering. **Pharm Res**. 2008 May;25(5):1209-11. Epub 2008 Feb 12
26. Sands RW, Mooney DJ. Polymers to direct cell fate by controlling the microenvironment. **Curr Opin Biotechnol**. 2007 Oct;18(5):448-53. Review.
27. Mooney DJ. Silva EA. A glue for biomaterials. **Nat Mat** 2007 May (6)5:327-328.
28. Huebsch ND. Mooney DJ. Fluorescent resonance energy transfer: A tool for probing molecular cell-biomaterial interactions in three dimensions. **Biomaterials** 2007 Jan 16: (Epub ahead of print).
29. Fischbach C. Mooney DJ. Polymers for pro- and anti-angiogenic therapy. **Biomaterials** 2007, 28: 2069-2076. Epub.at www.sciencedirect.com
30. Cao L, Mooney DJ. Spatiotemporal control over growth factor signaling for therapeutic neovascularization**. Adv Drug Deliv Rev** 2007 Aug 16; [Epub ahead of print] PMID: 17868951
31. Matsumoto T. Mooney DJ. Cell instructive polymers**. Adv Biochem Eng Biotechnol** 2006;102:113-37.
32. Augst AD. Kong HJ. Mooney DJ. Alginate hydrogels as biomaterials. **Macromol Biosci** 2006 Aug 7;6(8);623-33.
33. Fischbach C. Mooney DJ. Polymeric Systems for Bioinspired Delivery of Angiogenic Molecules. **Adv Pol Sci** 2006 (203): 191-221.
34. Hsiong, S., Mooney, D., Regeneration of vascularized bone. **Periodontol** 2000, 2006;41:109
35. Mooney DJ. Boontheekul T. Chen R. Leach K., Actively regulating bioengineered tissue and organ formation. **Orthod Craniofac Res** 8, 2005; 141–144.
36. Storrie H. and Mooney DJ. Sustained delivery of plasmid DNA from polymeric scaffolds for tissue engineering. **Adv Drug Del Rev** 58 (2006) 500-514: doi:10.1016/j.addr.2006.03.004: available online at www.sciencedirect.com
37. Mooney D. Cancer: One step at a time. **Nature** Vol.436: 468-469, 28 July 2005.
38. Leach JK, Mooney DJ. Bone engineering by controlled delivery of osteoinductive molecules and cells. **Expert Opin Biol Ther** 2004;4(7):1015-1027.
39. Hirano Y, Mooney DJ. Peptide and protein presenting materials for tissue engineering. **Advanced Materials** 16:17-25, 2004.
40. Boontheekul, T., Mooney, D.J., Protein-based signaling systems in tissue engineering, **Curr Opin Biotechnol** 14(5), 2003, 559-65.
41. W.L. Murphy, D.J. Mooney. Molecular-scale biomimicry. **Nature Biotech** 20:30-31, 2002.
42. A.B. Ennett, D.J. Mooney. Tissue engineering strategies for in vivo neovascularisation. **Expert Opin Biol Ther** 2(8):805-818, 2002.
43. T.P. Richardson, D.J. Mooney. Multiple growth factor delivery from polymer systems for regenerative medicine. **Gene and Medicine** 6(3), (373)17-(377)21, 2002.
44. A.G. Mikos, D.J. Mooney. Preface. **J Drug Targeting** 9:395-396, 2001.
45. E. Alsberg, E.E. Hill, D.J. Mooney. Craniofacial tissue engineering. **Crit Rev Oral Biol and Med** 12(1):64-75, 2001.
46. T.P. Richardson, W.L. Murphy, D.J. Mooney. Polymeric delivery of proteins and plasmid DNA for tissue engineering and gene therapy. **Crit Rev Euk Gene Express** 11(1-3):47-58, 2001.
47. D. Kaigler, D.J. Mooney. Tissue engineering's impact on dentistry. **J Dent Ed**. 65(5);456-62, 2001.
48. D. Mooney. Nimble progenitors rescue vascular grafts. **Nature Medicine** 7(9): 996-997, 2001.
49. B.J. Baum, D.J. Mooney. The impact of tissue engineering on dentistry. **J Am Dent Assn** 131:309-318, 2000.

50. M.K. Smith and D.J. Mooney. Biomaterials in liver tissue engineering. e-biomed--**J Regenerative Med** 1:65-73, 2000.
51. B.S. Kim, D.J. Mooney. Development of biocompatible synthetic extracellular matrices for tissue engineering. **Trends in Biotechnol** 16:224-230, 1998.
52. B.J. Baum, S. Wang, E. Cukierman, C. Delporte, H. Kagami, Y. Marmary, P. Fox, D. Mooney, K. Yamada. Re-engineering the functions of a terminally-differentiated epithelial cell in vivo. **Annals NY Acad Sci** 875:294-300, 1999.
53. D.J. Mooney, A.G. Mikos. Growing new organs. **Scientific American** 280:60-67, 1999.
54. W.L. Murphy, D.J. Mooney. Controlled delivery of inductive proteins, plasmid DNA and cells from tissue engineering matrices. **J Periodont Res** 34:413-419, 1999.
55. D.J. Mooney. Growing organs and tissues. **Science Spectra** 7:8-11, 1996.
56. A.J. Putnam, D.J. Mooney. Synthetic extracellular matrices for tissue engineering. **Nature Medicine** 2(7):824-826, 1996.
57. D. E. Ingber, L. Dike, L. Hansen, H. Liley, A. Maniotis, H. McNamee, D. Mooney, G. Plopper, J. Sims, N. Wang. Cellular tensegrity: exploring how mechanical changes in the cytoskeleton regulate cell growth, migration, and tissue pattern during morphogenesis**. Int'l Rev Cytol** 150:173-224, 1994.
58. D.J. Mooney, J.P. Vacanti. Tissue engineering using cells and synthetic polymers. **Transplantation Reviews** 7:153-162, 1993.
59. K.H. Bouhadir, D.J. Mooney. In vitro and in vivo models for the reconstruction of intercellular signaling. **Annals NY Acad Sci** 842 (Salivary gland biogenesis and function), 188-194.

3. Journals that are not peer-reviewed

1. Kong HJ**.** Mooney DJ, Controlling fracture behavior of polymeric hydrogels. **MRS Symposium Proceedings** (2005).
2. Kong HJ. Alsberg E. Mooney DJ. Non-destructively imaging and exploiting the degradation of hydrogels. **Abstracts of Papers of the American Chemical Society** 227:U126-BIOT (2004).
3. Lee KY. Kong HJ**.** Mooney DJ Cell cross-linked hydrogels. **Abstracts of Papers of the American Chemical Society** 227:U540-PMSE (2004).
4. K. Sano, R.A. Cusick, H. Lee, J.M. Pollok, P.M. Kaufmann, S. Uyama, Mooney DJ, R. Langer, J.P. Vacanti. Regenerative signals for heterotopic hepatocyte transplantation. **Transplant. Proc**. 28:1859-1860, 1996.
5. D.J. Mooney. Tissue engineering with biodegradable polymer matrices. **Proc. 15th Southern Biomed. Eng. Soc**. 537-540, 1996.
6. P. M. Kaufmann, S. Heimrath, B.S. Kim, D.J. Mooney. Highly porous polymer matrices as a three-dimensional culture system for hepatocytes: initial results. **Transplant. Proc.** 29:2032-2034, 1997.
7. P. Eiselt, J. Rowley, D.J. Mooney. PEG cross-linked alginate hydrogels with controlled mechanical properties. **Proc. Mater. Res. Soc.** - Biomaterials regulating cell function and tissue development 530:37-42, 1998.
8. S.S. Kim, S. Kaihara, M. Benvenuto, R.S. Choi, B.-S. Kim, D.J. Mooney, G.A. Taylor, J.P. Vacanti. Regenerative signals for tissue-engineered small intestine. **Transplant. Proc.** 31:657-660, 1999.
9. S. Kaihara, S., S.S. Kim, M. Benvenuto, R. Choi, B.-S. Kim, Mooney DJ, K. Tanaka, J.P. Vacanti. Anastomosis between tissue-engineered intestine and native small bowel. **Transplant. Proc.** 31:661-662, 1999.
10. M.C. Peters, L.D. Shea, D.J. Mooney. Protein and plasmid delivery from tissue engineering matrices. **Polymer preprints** 40(1):273-274, 1999.
11. K.H. Bouhadir, J. Rowley, G.M. Kruger, K.Y. Lee, D.J. Mooney. Biodegradable hydrogels for controlled cell and drug delivery. **Polym. Preprints** 40(1):501-502, 1999.
12. P. Eiselt, K.Y. Lee, D.J. Mooney. Controlled mechanical properties of alginate hydrogels by cross-linking with poly(ethylene glycol)-diamines. **Polym. Preprints** 41:295-296, 2000.

13. K.Y. Lee, K.H. Bouhadir, D.J. Mooney. Decoupling the degradation behavior and mechanical properties of covalently cross-linked hydrogels. **Polym. Preprints** 41:297-298, 2000.
14. D.J. Mooney, L. Johnson, L. Cima, L.K. Hansen, D.E. Ingber, R. Langer, J.P. Vacanti. Principles of tissue engineering and reconstruction using polymer-cell constructs. **Proc. of the Materials Research Society:** Tissue Inducing Biomaterials 252:345-352, 1992.
15. D.J. Aframian, E. Cukierman, J. Nikolovski, C. Zheng, C. Goldsmith, D.J. Mooney, K.M. Yamada, B.J. Baum. Use of suicide gene in an allogeneic graft cell. **J. Dent. Res.** 79:1618, SI, 2000.
16. K.W. Anderson, E. Alsberg, J.R. Rowley, D.J. Mooney. Tissue engineering of injectable cartilage. **Proc. Annual Meeting Amer. Acad. of Otolaryngology-Head and Neck Surg.**, 2000.
17. J.A. Rowley, E. Alsberg, D.J. Mooney. Controlling myoblast phenotype with material mechanics. **Proc. Third Biennial Tissue Eng. Soc. Int'l. Meeting** 3:667, 2000.
18. S. Kaihara, R. Koka, S. Lalan, E. Ochoa, E. Alsberg, D. Mooney, K. Tanaka, J. Vacanti. In vitro neomorphogenesis of liver tissue on biodegradable polymer scaffolds under dynamic flow culture conditions. **Proc. Third Biennial Tissue Eng. Soc. Int'l. Meeting** 3:656, 2000.
19. A.G. Mikos, D.J. Mooney. Preface [Special edition editors]. **J. Drug Targeting**.9(6):395-396, 2001.
20. W.L. Murphy and D.J. Mooney. Biomineralization via bioinspired variation in polymer surface chemistry. **Polym. Preprints,** ACS National Meeting, Fall 2001.
21. K.Y. Lee, M.C. Peters, K.W. Anderson, and D.J. Mooney. Effect of mechanical stimulation on growth factor release from synthetic extracellular matrices. **Polymeric Materials: Science and Engineering** 84: 896, 2001.
22. D.J. Mooney, K. Sano, P.M. Kaufmann, K. McNamara, J.P. Vacanti, R. Langer. Integrating cell transplantation and drug delivery technologies to engineer liver tissue. **Proc. Mat. Res. Soc**. - Polymers in Medicine 394:105-110, 1995.
23. C.A. Vacanti, W. Kim, M.P. Vacanti, Mooney DJ, B. Schloo, J.P. Vacanti. Comparison of tissue engineered bone and cartilage using transplanted cells on synthetic, biodegradable polymer scaffolds. **Transplant. Proc.** 25:1019-1021, 1993.
24. P.M. Kaufmann, S. Uyama, Mooney DJ, J.P. Vacanti. The impact of hepatotrophic stimulation on hepatocytes transplanted into PVA scaffolds. MRS Proc. 331, 1994.
25. D.J. Mooney, C.L. Mazzoni, G.M. Organ, W.C. Puelacher, J.P. Vacanti, R. Langer. Stabilizing fiber-based cell delivery devices by physically bonding adjacent fibers. **MRS Proc.** 331:47-52, 1994.
26. G.M. Organ, D.J. Mooney, L.K. Hansen, B. Schloo, J.P. Vacanti. Enterocyte transplantation using cell-polymer devices causes intestinal epithelial-lined tube formation. **Transplant. Proc**. 25:998-1001, 1993.
27. D.J. Mooney, P.M. Kaufmann, K. Sano, K.M. McNamara, J.P. Vacanti, R. Langer. Transplanting hepatocytes on porous, biodegradable sponges. **Transplant. Proc.** 26(6):4025-4026, 1994.
28. G.M. Organ, D.J. Mooney, L.K. Hansen, B. Schloo, J.P. Vacanti. Transplantation of enterocytes utilizing polymer-cell constructs to produce neointestine. **Transplant. Proc.** 24:3008-3009,l 1992.
29. D.J. Mooney, R. Langer, L.K. Hansen, J.P. Vacanti, D.E. Ingber. Induction of hepatocyte differentiation by the extracellular matrix and an RGD-containing synthetic peptide. **Proc. of the Materials Research Society**: Tissue Inducing Biomaterials 252:199-204, 1992.

B. Books

1. A. Atala, D.J. Mooney (editors), Tissue Engineering: Synthetic biodegradable polymer scaffolds, Birkhauser Press (1997).
2. N. Peppas, D.J. Mooney, A. Mikos, L. Brannon-Peppas (editors), Biomaterials, Carriers for Drug Delivery and Scaffolds for Tissue Engineering, AIChE Press (1997).

3. R. Thomson, Mooney DJ, K. Healy, Y. Ikada, A. Mikos (editors) Biomaterials regulating cell function and tissue development. Materials Research Society Press, Warrendale PA (1998).
4. F. Guilak, D. Butler, S. Goldstein, D. Mooney (Editors), Functional Tissue Engineering: The Role of Biomechanics. Springer-Verlag, Inc. (2004).

C. Chapters in Books

1. D. Ingber, S. Karp, G. Plopper, L. Hansen, D. Mooney. Mechanochemical transduction across extracellular matrix and through the cytoskeleton. In: Physical forces and the mammalian cell (J. Frangos, ed), Academic Press, San Diego, 1992.
2. D.J. Mooney, R. Langer. Engineering biomaterials for tissue engineering: the 10-100 micron scale. In: Biomedical Engineering Handbook (J. Bronzino, ed.), CRC Press, 1609-1618, 1995.
3. D.J. Mooney, J.P. Vacanti, R. Langer. Tissue engineering: tubular tissues. In: Yearbook of cell and tissue transplantation 1996/1997 (R. Lanza, W. Chick, eds.), Kluwar Acad. Pub., 275-282, 1996.
4. D.J. Mooney, B.S. Kim, J.P. Vacanti, R. Langer, A. Atala. Tissue engineering: urogenital system. In: Textbook of Tissue Engineering (R. Lanza, R. Langer, W. Chick, eds), Academic Press, 591-600, 1997.
5. D.J. Mooney, J.A. Rowley. Tissue engineering: integrating cells and materials to create functional tissue replacements. In: Controlled drug delivery (K. Park, ed.), ACS Books, 1997.
6. W.H. Wong, D.J. Mooney. Synthesis and properties of biodegradable polymers used in tissue engineering. In: Tissue Engineering (A. Atala, D.J. Mooney, eds), Birkhauser Press, 51-82, 1997.
7. M. Peters, D.J. Mooney. Synthetic extracellular matrices to guide tissue formation. In: Porous materials for tissue engineering (D. Liu, V. Dixit, eds), TransTech Publications, Switzerland, 250:43-52, 1997.
8. J.C. Cunningham, G.M. Organ, D.J. Mooney. Engineering small intestine. In: Tissue Engineering: Fundamentals and Concepts (Patrick, Mikos, McIntyre, eds) Elsevier Publ., 1997.
9. L.D. Shea, I.C. Yue, D.J. Mooney. Biodegradable polymer matrices in dental tissue engineering. In: Tissue Engineering: Fundamentals and Concepts (Patrick, Mikos, McIntyre, eds) Elsevier Publ., 1997.
10. D.J. Mooney. The future of tissue engineering in the craniofacial region. In: Distraction osteogenesis and tissue engineering (J. McNamara, C. Trotman, eds.) 225-233, 1998.
11. M. Peters, D.J. Mooney. Synthetic extracellular matrices to guide tissue formation. In: Tissue Engineering for Therapeutic Use 2, (Ikada and Enomoto, eds.) Elsevier Publ. 55-66, 1998.
12. M.C. Peters, D.J. Mooney. Growth factor delivery from tissue engineering matrices: Inducing angiogenesis to enhance transplanted cell engraftment. In: Controlled Drug Delivery, Designing Technologies for the Future. (K. Park, R.J. Mrsny, eds.), American Chemical Society, Washington, DC, 157-167, 2000.
13. K.Y. Lee, C.R. Halberstadt, W.D. Holder, D.J. Mooney. Tissue engineering for breast reconstruction. Principles of Tissue Engineering, 2nd Ed. (R.P. Lanza, R. Langer, J.P. Vacanti, eds.), Academic Press, San Diego, CA, 409-423, 2000.
14. B.-S. Kim, D.J. Mooney, J.P. Vacanti, R. Langer, A. Atala. Tissue engineering: genitourinary system. Principles of Tissue Engineering, (R.P. Lanza, R. Langer, J.P. Vacanti, eds.), 2nd Edition, Academic Press, San Diego, CA,
15. C.A. Simmons and D.J. Mooney. Regulation of cellular response to mechanical signals by matrix design. Functional Tissue Engineering: The Role of Biomechanics. (F. Guilak, et al., eds.), Springer-Verlag, Inc., in press.
16. W.L. Murphy and D.J. Mooney. Tissue engineering in orthodontics. Essentials for Orthodontics. (J. Avery, ed.), EFOP Press, Ann Arbor, MI.

17. T.P. Richardson and D.J. Mooney. Processing of polymer scaffolds: gas foam processing. Methods of Tissue Engineering. (A. Atala, R. Lanza, eds.), Academic Press, 733-740, 2001.
18. P.J. Polverini, J.E. Nör, M.C. Peters, D.J. Mooney. Growth of human blood vessels in severe combined Immunodeficient mice: A new *in vivo* model system of angiogenesis. Methods in Molecular Medicine: Angiogenesis Protocols. (J. C. Murray, ed.), Humana Press, Totowa, NJ, 2001.
19. K.H. Bouhadir and D.J. Mooney. Synthesis of hydrogels: alginate hydrogels. Methods of Tissue Engineering. (A. Atala, R. Lanza, eds.), Academic Press, 653-662, 2002.
20. P.J. Polverini, J.E. Nör, M.C. Peters, D.J. Mooney. Growth of human blood vessels in severe combined Immunodeficient mice: A new *in vivo* model system of angiogenesis. Methods in Molecular Medicine: Angiogenesis Protocols. (J. C. Murray, ed.), Humana Press, Totowa, NJ, 2001.
21. K.Y. Lee, M.C. Peters, K.W. Anderson, D.J. Mooney. Controlled growth factor delivery by mechanical stimulation. In: Advanced Materials – Characterization, Tissue Engineering and Complexity (S. C. Moss, ed.) Materials Research Society, Warrendale, Pennsylvania, Vol. 711, 189-192, 2002.
22. K.W. Riddle and D.J. Mooney. Biomaterials for cell immobilization. Cell Immobilization Biotechnology (V. Nedovic, R. Willaert, eds.) Kluwer Academic Publishers, in press.
23. D.J. Mooney. Engineering design aspects of tissue engineering. In: Tissue engineering research (LV McIntire, ed.). Academic Press, 2003.
24. K.Y. Lee, D.J. Mooney. Controlled growth factor delivery for tissue engineering. In ACS Symposium Series (S.M. Dinh and P. Liu, eds.) American Chemical Society, Washington, DC, vol. 846, 73-83, 2003.
25. H.J. Kong, D.J. Mooney. Polysaccharide hydrogels in tissue engineering. In: Polysaccharides 2nd ed. (S. Dmuitri, ed.) Marcel & Dekker Chapter 36 (2005).
26. Grikscheit TC, Ogilvie JB, Bower K, Alsberg E, Mooney DJ, Vacanti JP: Tissue engineered juvenile spleen protective against pneumococcal infection in experimental model. Surgery.
27. Kaihara S, Ogawa K, Koka R, Lalan S, Ochoa E, Alsberg E, Mooney DJ, Tanaka K, Vacanti JP: In vitro morphogenesis of liver tissue using progenitor small hepatocytes on biodegradable polymer scaffolds under dynamic flow culture conditions. Gastroenterology.
28. Simmons CA, Mooney DJ. Regulation of cellular response to mechanical signals by matrix design. In: Guilak, F. et al. (eds.) Functional Tissue Engineering. Springer-Verlag, Inc., New York, 2003.
29. Matsumoto T. Mooney DJ, Cell Instructive Polymers, *Advances in Biochemical Engineering/Biotechnology,* Springer, in press.
30. Huang, Y.C., Mooney, D.J. (Accepted) "Alginate modification for tissue engineering", (Elisseeff, J. ed.) in Scaffold in Tissue Engineering, Marcel Dekker
31. Huang, Y.C., Mooney, D.J. (Accepted) "Gas foaming for polymer scaffolds in tissue engineering", (Elisseeff, J. ed.) in Scaffold in Tissue Engineering, Marcel Dekker
32. Yung, Y.C., Mooney, D.J. Engineering Smooth Muscle. In: Fisher, JP. Biomedical Engineering. Boca Raton, FL, CRC Press, 2004.
33. S. Rahmani, D.J. Mooney, Tissue Engineered Wound Dressings for Diabetic Foot Ulcers, The Diabetic Foot-Medical and Surgical Management, 4th edition, Springer International Publishing, 2017.

VI. TEACHING ACTIVITIES

A. Courses taught at University of Michigan

1. Biomaterials (Dental 335) – 1995, 1996, 2000
2. Tissue engineering (ChE/Dental 584) – 1995-2000, 2002 (each fall term)
3. Seminars in biomaterials (Dental 575) – 1996, 1997, 1998

4. Engineering fundamentals in biological system (ChE 518) – 1996, 1997
5. Applied biomaterials II (Dental 610) - 1996
6. Applied biomaterials I (Dental 507/508) – 1997, 1998, 1999, 2002, 2003, 2004
7. Cellular biotechnology (Med. 504) – 1997, 1998
8. Organogenesis of Complex Tissues (CDB 680) – 2000
9. Stem cells (Med 710) – 2001
10. Cell Biology (Biology 429) – winter term 1998-2000, 2002

B. Courses taught at Harvard University

1. Tissue Engineering (Engineering Science 130/230) – 2005-09, 2012-14, 2016-17
2. Introduction to Materials Science (Engineering Science 190) – 2005-09
3. Quantitative Physiology as a Basis for Bioengineering (Engineering Science 53) – 2010
4. Engineering Design (Engineering Sciences 96) – 2012-18
5. Chemical Kinetics and Reactor Design (BE 165) - 2014
6. Supervised Reading and Research (BE 91R)-2015-2018

C. Research Advisor

POSTDOCTORAL FELLOWS MENTORED

1. Samuel Wong, 1995-1996: Industrial chemist – Hong Kong
2. Kamal Bouhadir, 1996-2000: Professor – American University of Beirut
3. Lonnie Shea, 1997-1999: Professor – University of Michigan
4. Sara Madsen, 1998-2000: Lecturer at South Dakota State University
5. Kenneth Anderson, 1999-2000: Private surgical practice.
6. Kuen Yong Lee, 1998-2001: Professor, Hanyang University (South Korea)
7. Tom Richardson, 2000-2002: Senior Scientist, Mimeon Pharmaceuticals, Boston
8. Craig Simmons, 2000-2002: Professor University of Toronto.
9. Jeanie Drury, 2000-2002: Senior Scientist, Dentigenix.
10. Amanda Thornton, 2001-2004: Research Associate University of Michigan.
11. Elliott Hill, 2001-2005: Assistant Professor, University of Michigan.
12. Alessandra Ennett, 2004-2005, Research Scientist, Eli Lilly.
13. Hyung Joon Kong, 2001-2006: Professor, University of Illinois, Urbana.
14. Kent Leach, 2003-2005: Professor, University of California, Davis.
15. , 2003-2006; Associate Professor, Cornell University
16. Hannah Storrie, 2005-2008; Scientist at Aldagen, Inc.
17. Alexander Augst, 2005-2007; Technology Management Office, Massachusetts General Hospital.
18. Cristina Borselli, 2006-2008; Team Head (equivalent in US to senior post-doc), Charite Hospital, Berlin (Germany).
19. Lan Cao, 2006-2010: Senior Scientist, Unum
20. Jose Rivera-Feliciano 2008-2009; post-doctoral fellow, Harvard.
21. Kangwon Lee, 2008-2011: Assistant Professor, Seoul National University.
22. Jaeyun Kim, 2008-2012: Assistant Professor, Sungkyunkwan University (Korea)
23. Dmitry Shvartsman, 2008- Post-doctoral fellow, Harvard Medical School
24. Eduardo Silva, 2008-2011: Assistant Professor, UC-Davis.
25. Xuanhe Zhao, 2009-2010: Associate Professor, MIT
26. Catarina Alves, 2009-2011: Research Collaborator, FMUP i3S
27. Ovijit Chaudhuri, 2010-2012: Assistant Professor, Stanford
28. Yevgeny Brudno, 2010-2016: Assistant Professor, University of North Carolina
29. Sidi Bencherif, 2010-2014: Assistant Professor, Northeastern University
30. Cathal Kearney, 2011-2014: Lecturer, Trinity College (Dublin)
31. Stephen Kennedy, 2011-2014: Assistant Professor, U. Rhode Island
32. Manav Mehta, 2011-2014: Manager, R&D Collaborations, 3-D Matrix
33. Thomas Braschler, 2011-2013: Assistant Professor, University of Geneva
34. Evi Lippens, 2011-2013: Post-doctoral fellow, Charite (Berlin)

35. Luo Gu, 2012-2017: Assistant Professor, Johns Hopkins University
36. Simon Young, 2012-2015; Assistant Professor, University of Texas Health Science Center at Houston
37. Jae-Won Shin,2013-2015; Assistant Professor, University of Illinois Chicago
38. Beverly Ying, 2013-2015; Consultant Mckinsey & Company
39. Hadas Skaat, 2014-2015; Research scientist Landa Nanograpy
40. Erin Anderson, 2014; Consultant BCG Group
41. Adam Celiz, 2014-2016: Lecturer, Imperial College (London)
42. Pascal Joly 2014-2016: Consultant
43. Catia Verbeke 2014-2016: Consultant
44. Jianyu Li 2014- 2017: Assistant Professor, McGill University
45. Nisarg Shah 2014-
46. Christine Cezar 2015-2016: Food and Drug Administration (FDA)
47. Philipp Lienemann 2015-2016: Head of R&D
48. Torsten Rossow 2015-2016; Industrial Chemist, Siemens
49. Bo Ri Seo 2015-
50. Sahar Rahmani 2016-
51. Joshua Grolman 2016-
52. Hua Wang 2016-
53. Berna Ozkale-Edelmann 2017-
54. Benjamin Freedman 2017-
55. Max Darnell 2017-2018; Postdoc University of Washington
56. Angelo Mao 2017-
57. Alberto Elosegui Artola 2017-
58. Meadhbh Brennan 2017-
59. Irene De Lazaro Del Rey 2018-

DOCTORAL STUDENT DISSERTATIONS SUPERVISED

1. Stylianos Andreadis, Ph.D. Chemical Engineering, June 1996: Professor – SUNY Buffalo
2. Byung-Soo Kim, Ph.D. Chemical Engineering, December 1998: Professor – Hanyang University (Korea)
3. Tien-Min Chu (co-advised with J. Halloran), Ph.D. Biomaterials, February 1999: Currently Assistant Professor, Indiana University
4. Andrew Putnam, Chemical Engineering, February 2001: Associate Professor, University of California – Irvine
5. Jon Rowley, Biomedical Engineering, May 2001: Innovation Director – Lonza.
6. Martin Peters, Biomedical Engineering, June 2001: Senior Director - Aastrom.
7. James Cunningham (co-advised with J. Linderman), Chemical Engineering, December 2001: Associate Director, Pharmaceutical Services, Merck & Co., Inc., West Point, PA.
8. Janeta Nikolovski, Biomedical Engineering, June 2002: Senior Scientist, Johnson & Johnson Corp.
9. Eben Alsberg, Biomedical Engineering, July 2002. Associate Professor of Biomedical Engineering, Case Western Reserve University.
10. Molly Smith, Chemical Engineering, June 2004: Research Scientist, Kimberly-Clarke.
11. William Murphy, Biomedical Engineering, July 2002. Associate Professor, University of Wisconsin.
12. Darnell Kaigler (DDS/PhD) Oral Health Sciences, June 2004. Assistant Professor, University of Michigan.
13. Yen-Chen Huang, Biomedical Engineering, June 2004, Postdoctoral fellow at MIT
14. Alessandra Ennett, Biomedical Engineering, October 2004: Industrial Scientist, Eli Lilly.
15. Kathryn Riddle, Chemical Engineering, 2005: Postdoctoral fellow at the University of New South Wales.
16. Susan Hsiong, Chemical Engineering, University of Michigan, April 2007. Senior Scientist, Smith & Nephew.
17. Ruth Chen, Biomedical Engineering, 2005. Industrial Scientist, Boston Scientific.

18. Tanyarut Boontheekul, Chemical Engineering, 2006. Research Scientist, Institute of Bioengineering and Nanotechnology (Singapore).
19. Wendy Comisar (co-advised with J. Linderman), Chemical Engineering, University of Michigan, 2007: Senior Scientist, Merck
20. Yu Ching Yung, Chemical Engineering, University of Michigan, 2008: Consultant
21. Omar Ali, School of Engineering and Applied Sciences (SEAS) Harvard, 2008: Advanced Technology Staff, Wyss Institute.
22. Marta Evangelista, Biomedical Engineering, Porto University (Portugal) 2008
23. Eduardo Silva, Porto University (Portugal) /Harvard University, Biomedical Engineering, 2008: Assistant Professor UC-Davis.
24. Alice Chen, HST-SEAS Harvard, 2011. Post-doc MIT.
25. Nathaniel Huebsch, HST-SEAS Harvard, 2011: Post-doc, Gladstone Institute.
26. Wai Chi (William) Yuen, SEAS Harvard, 2011. Investment Banker
27. R. Warren Sands, SEAS, Biomedical Engineering. Medical Resident U Pittsburgh.
28. Gail Chan, SEAS, 2013, Research Fellow at Brigham and Woman's Hospital.
29. Prakriti Tayalia, SEAS – co-advised with Eric Mazur, 2011: Assistant Professor, IIT-Bombay.
30. Praveen Arany, Harvard Dental School Ph.D. program, 2011. Assistant Professor, SUNY-Buffalo.
31. Catia Verbeke, SEAS, 2014. Currently post-doc, Harvard.
32. Erin Anderson, SEAS, 2014. Consultant BCG Group, based in Copenhagen.
33. Christine Cezar, SEAS, 2015. AIMBE Scholar at U.S. Food and Drug Administration
34. Alexander Cheung, SEAS, 2016 Scientist, Unum Therapeutics
35. Cristiana Branca da Cunha, Porto University (Portugal) 2014. Consultant, London.
36. Darinka Klumpers, Free University – Netherlands, 2014. Global Health Fellow; Arnhold Institute for Global Health
37. Aileen Li, SEAS, 2017, Postdoc, University of California, Santa Barbara
38. Sandeep Koshy, HST-SEAS, 2017
39. Rajiv Desai, SEAS, 2016, Consultant BCG Group
40. Angelo Mao, SEAS, 2017, Postdoc Wyss Institute
41. Max Darnell, SEAS, 2017 Postdoc, University of Washington
42. Ellen Roche, SEAS, 2015. Faculty Member MIT.
43. Theresa Raimondo, SEAS, in progress.
44. Ting-Yu Shih, SEAS, in progress.
45. Brian Kwee, SEAS, 2018, Postdoc Wyss Institute
46. Kyle Vining, SEAS, in progress.
47. Maxence Dellacherie, SEAS in progress.
48. Kwasi Adu-Berchie, SEAS in progress
49. Stephanie McNamara, SEAS in progress
50. Alexander Najibi, SEAS in progress
51. David Zhang, SEAS in progress
52. Christina Tringides, FAS/SEAS in progress
53. Miguel Sobral, SEAS in progress
54. Yutong Liu, SEAS in progress

M.S. STUDENT RESEARCH SUPERVISED

1. Jim Piana, Chemical Engineering, M.S. 1996
2. Meng-Jiy Wang, Biomedical Engineering, M.S. 1996
3. Leatrese Harris, Chemical Engineering, M.S. 1997
4. Julie Yeh, Biomedical Engineering, M.S. 1999
5. Rebecca Swimmer, Neurology, Harvard, M.S. 2004
6. Eun-Jin Park, Prosthodontics, Harvard School of Dental Medicine. Currently Assistant Professor of Dentistry, Ewha Womans Univ. College of Medicine.
7. Seiichi Yamana, Prosthodontics Graduate Program, Harvard School of Dental Medicine. Currently Assistant Professor of Dentistry, New York University
8. Kodiyan Anu, M.S. EPFL – Lausanne, Switzerland. 2011
9. Alizee Desaris, M.S. Ecole Polytechnique. 2012

10. Patrizia Spoerri, M.S., EPFL– Lausanne, Switzerland, 2012-13.
11. Maxence Dellacherie, M.S., EPFL– Lausanne, Switzerland, 2013-2014
12. Marta Alonso Nocelo, M.S., Fundacion Ramon Dominguez, 2015-
13. Mai-Thi Nguyen-Kim, M.S., DWI-Leiniz Institute for Interactive Materials, 2015-2016
14. Aline Lueckgen, M.S., Charite-Berlin, 2015-
15. Aline Bauer, M.S., EPFL– Lausanne, Switzerland, 2015-2016
16. Wouter Hameeteman, M.S., Eindhoven University of Technology, 2015-
17. Manon LeColier. M.S., EPFL-Lausanne, Switzerland, 2016-2017
18. Tomas Ramos, M.S., INEB Portugal, 2017-
19. Philipp Weinand, M.S., EPFL-Lausanne Switzerland, 2018-

BS/DDS STUDENT RESEARCH SUPERVISED

1. Courtney Powell, Mat. Sci., 1995
2. Taara Dhatta, Chem. Eng., 1995
3. Janet Nikolovski, Chem. Eng., 1995
4. Jeff Martus, Chem. Eng., 1996
5. Kristyn Bohl, Chem. Eng., 1995-97
6. Brett Isenberg, Chem. Eng., 1996-97
7. Helena Hennighausen, Chem. Eng., 1996-97
8. Erin Cavusgil, Chem. Eng., 1996
9. Andrea Brown, Chem. Eng., 1996-98
10. Debra Hausman, Chem. Eng., 1997
11. Meredith Haar, Dental School, 1997
12. Issac Yue, Chem. Eng., 1997-98
13. Louis Chen, Chem. Eng., 1997-98
14. Benita Kuo, Chem. Eng., 1997-98
15. Ghenet Simpson, Chem. Eng., 1997
16. Caroline Dugopolski, Chem. Eng., 1998-99
17. Kim Schultz, Chem. Eng., 1998-99
18. Kelly Damm, Chem. Eng., 1999-2001
19. Alice Chou, Mat. Sci. 1999-2002
20. Katherine Gilhool, Chem. Eng., 1998-99
21. Matthew Robertson, Chem. Eng., 2000-2001
22. Erick Moy, Mat. Sci., 1998-present
23. Elly Liao, Chem. Eng., 1998-99
24. Amru Albeiruti, Dental School, 2000-01
25. Brendan Pillemar, LSA, 1999-01
26. Joel Kileny, 2000-01
27. Julie Spence, 2000-01
28. Eyad Abu-Isa, 2000-01
29. Lindsay Murfey, 2000-01
30. Charisa Roy, 2001-02
31. Ralph Dilisio, 2001
32. Emma Wong, 2002-present
33. Christopher Fecteau, 2001-02
34. Jessica Garbern, 2002-2004
35. Erin West, 2002-2004
36. Bunpot Sirinutsomboon, 2004-2005
37. Jonathan Snow, 2004
38. Andrea Brock, 2005
39. Chikese Eseonu, 2005-2006 SEAS, Harvard
40. Lewis Hahn, 2005 SEAS
41. Angelo Mao, 2007 SEAS
42. Gretchen Fuller, 2006-07 FAS
43. Sammy Sambu, 2007 SEAS
44. Toan Huynh, 2006 U. Houston (Summer REU student)

45. DeAnna Lopez, 2006 U. New Mexico (Summer REU student)
46. Ayodele Osasona, 2007 SEAS
47. Vorannadha Vacharathit, SEAS, 2010
48. Or Gadish, SEAS, 2010-2011
49. Eason Hahm, SEAS, 2010-2012
50. George Huang, SEAS, 2010-2012
51. Kyungsup Shin, Harvard School of Dental Medicine, 2010-2011
52. Kathy Kuo, SEAS, 2011-12
53. Ruth Choa, SEAS, 2011-13
54. Uyanga Tsedev, SEAS, 2012-13
55. Emily Savage, SEAS, 2012-13
56. Abirvab Deb, SEAS, 2012 (Summer REU student)
57. Charles Roco, Virginia Polytech Institute and State University, 2014 (Summer REU)
58. Laura Weinstock, Northeastern University, 2014 (Summer REU student)
59. Emmy Hu, SEAS, 2014-2016
60. Eesha Khare, SEAS, 2014-2016
61. Rishi Bagrodia, SEAS, 2014-2016
62. Serina Blacklow, SEAS, 2014
63. Tony Wu, SEAS, 2014-2016
64. Alexander Miller, SEAS, 2014-2015
65. Madeline Cooper, SEAS, 2014-2016
66. Keegan Mendez, 2015 (Summer REU student)
67. Ciera Bryan, 2015 (Summer REU student)
68. Ronald Laracuente, 2015 (Summer REU student)
69. Esmarline DeLeon, SEAS, 2015 (Summer REU student)
70. Alaina Bever, 2015 (Summer Harvard Amgen Scholar Program)
71. Stephanie McNamara, 2015 (Summer HMS/HSDM Scholar in Medicine)
72. Nisarg Patel, 2015 (Summer HMS/HSDM Scholar in Medicine)
73. Erica Budina, SEAS, 2015-2018
74. Kate Ann Buellesbach, SEAS, 2015-2017
75. Joanna Cheung, SEAS, 2015-2017
76. Jacob Scherba, SEAS, 2015-2018
77. Kristen Rodrigues, SEAS 2016-2018
78. Tara Murty, SEAS 2016-2018

VISITING SCIENTISTS

1. Visiting Assistant Professor Matthias Kaufmann, M.D. (University of Hamburg) 1996
2. Visiting Associate Professor Yoshiaki Hirano, Ph.D. (Osaka Institute of Technology) 2002-2003
3. Visiting Assistant Professor Takuya Matsumoto, D.D.S., Ph.D. (Osaka University) 2003-2005
4. Visiting Assistant Professor Ryusuke Nakaoka, Ph.D. (National Institute of Health Sciences, Japan) 2003
5. Visiting Assistant Professor Pedro Granja (Porto University, Portugal) 2003
6. Visiting Associate Professor Eun-Suk Kim (Seoul National University) 2004-2006
7. Visiting Professor Herman Vandenburgh (Brown University) 2004-2006
8. Visiting Assistant Professor Scott Schricker (Ohio State University) 2007
9. Visiting Associate Professor Kamal Bouhadir (American University of Beirut) 2007-09
10. Visiting Assistant Research Professor Fabien Guillemot (INSERM, France) 2010
11. Visting Professor Kuen Yong Lee (Hanyang University, Seoul, Korea) 2010-2011.

12. Visiting Professor Woo Seob Kim (Chung-Ang University, Seoul, Korea) 2010-2011.
13. Visiting Professor Theo Smit (VU University, Amsterdam, The Netherlands) 2011
14. Visiting Assistant Professor Katie Ryan (Cork University, Ireland) 2011, 2014.
15. Visiting Professor Shulamit Levenberg (Technion University, Israel) 2011-2012.
16. Visiting Assistant Professor Eileen Fong (Nanyang Technological University) 2011-2012.
17. Visiting Associate Professor Tae-Il Kim (Seoul National University) 2012-13.
18. Visiting Professor Kamal Bouhadir (American University of Beirut) 2015-2016
19. Visiting Professor Achim Goerferich (Universität Regensburg, Berlin) 2016
20. Visiting Associate Professor Shyni Vargese (University of California, San Diego)2016
21. Visiting Associate Professor Po-Chun Chang (School of Dentistry, National Taiwan University) 2016
22. Visiting Associate Professor Jaeyun Kim (Sungkyunkwan University, Korea) 2018-
23. Visiting Associate Professor Jun Yong Lee (The Catholic University of Korea) 2018-

VII. UNIVERSITY SERVICE

1) Department committees or programs

University of Michigan:
Graduate advisor, Biomedical Engineering Dept. - Biotechnology option (1995-1998)
Graduate education committee, Biomedical Engineering Dept. (1995-1998)
Advisory committee, Biologic & Materials Sciences (1997-2003)
Search committees for new faculty: Depts. Biologic & Materials Sciences, Chemical Engineering, Biomedical Engineering, COE Biotechnology (2000, 2002)

Harvard University:
Admissions and Scholarship (2004-2006)
Engineering Sciences Committee on Undergraduate Studies (2004 -2006)
Search and Promotion Committees in School of Engineering and Dental School (2004-2009)

2) School committees or programs

University of Michigan:
Search committee: Associate Dean for Academic Affairs (Dental School) (1999)
Appointments, Promotions, and Tenure Committee – Dental School (1999-2002)
Search committee: Chair of Oral Surgery (2000)
Awards Committee, Dental School (2002-2004)
Search Committee, Chair of Biologic&Materials Sciences (2003)
Awards Committee, School of Engineering (2003)
Search Committee, Chair of Biologic & Materials Sciences

Harvard University
Technology Advisory Committee (2006-)
C-9 (2008-2010)
Committee on Undergraduate Bioengineering Education (2008-2010)
Committee on Higher Degrees (2011-)
Committee to form new Bioengineering Ph.D. program (2011-12)
SEAS Space Planning Advisory Committee (2013-2015)
Faculty Search and Promotion Committee in SEAS (2013-)
Faculty Resource Advisory Committee (2017-)

3) University committees

University of Michigan:
Faculty mentor, University Mentor Program (1994-1997)

Lecturer, Summer College of Engineering Exposure Program (SCEEP) for Minority High School Students (1995-1996)
Steering committee, Cellular biotechnology training grant (1996-2000)
Steering committee, Center for Organogenesis (1996-1998), Organogenesis Training Grant (2002)
Research committee, Center for Biomedical Engineering (1996-2000)
Faculty advisory committee to the President – Life Sciences Initiative (1999-2000)
Director, Tissue Engineering and Regeneration Training Program (2001-2004)
Interim Director, Cellular Biotechnology Training Program (2003)

Harvard: University:
Biomaterials Scientist Search Committee (HSDM)
Standing Committee on the Care and Use of Laboratory Animals in Research and Teaching (FAS) (2004-2014)
Allston Governance Committee (2006)
University Planning Committee for Science and Engineering (UPCSE) (2006)
Acting Co-Director: Harvard Institute of Biologically-Inspired Engineering (2007-2008)
Committee on Role of Bioengineering at Harvard University (2008-09)
Operating Committee, Wyss Institute for Biologically Inspired Engineering (2010-)
Deans Faculty Research Committee, (FAS) (2013-2015)
FAS Committee on Research Policy (2015-)
Award Committee for Dean's Competitive Fund for Promising Scholar (2015-2016)
General Education Implementation Committee (2016-)
SEAS-SB Collaboration Committee (2016-)

4) National/International committees

Ad hoc reviewer NIH NIDCR Oral Biology and Medicine 2 Study section (1997-2002), and ad hoc NHLBI Program Project study section (1999-2000). Ad hoc reviewer and/or Chair of Special Emphasis Study sections NIBIB, NIDCR, NIDDK (2002-2009), NSF Bioengineering Division panels (1996, 1997), and NIH BTSS Study Section (2010). NIH/NCI Innovative Research in Cancer Nanotechnology Study Section (2017.
Panelist: World Technology Evaluation of Tissue Engineering Research (NSF, NIH, DOE, DARPA, NIST, FDA sponsors) (2000-01).
Scientific Advisory Committee: Engineered Tissue Growth International Conference, Pittsburgh, PA (2002-2004).
Scientific Advisory Board, Tissue Engineering Center of Children's Hospital of Philadelphia (2002–2004).
Scientific Advisory Committee: European Controlled Release Society, Amsterdam, The Netherlands (2004-).
Research Agenda Panel of the NIDCR-NIH, 2002. 2008.
The National Academies of Sciences, Engineering, and Medicine Intelligence Science and Technology Experts Group (ISTEG) (2015-
Review Panel: Dutch national funding agency (NWO) Netherlands' competitive science funding programme 'Gravitation'. (2016-2017)

VIII. INVITED SEMINARS AT OTHER INSTITUTIONS

1. Tissue Engineering. Dept. Chemical Engineering, Wayne State University, Detroit, MI (October, 1995).
2. Tissue engineering. Biomedical Engineering Dept., University of Toledo, Toledo, OH (December, 1996).
3. Synthetic extracellular matrices for tissue engineering. University of Minnesota Dental School, Minneapolis, MN (May, 1999).

4. Synthetic extracellular matrices for tissue engineering. Institute for Medicine and Engineering, University of Pennsylvania, Philadelphia, PA (September, 1997).
5. Synthetic extracellular matrices for tissue engineering. Dept. Chemical Engineering, Johns Hopkins Univ., Baltimore, MD (February, 1999).
6. Scaffolds for tissue engineering. National Institute of Dental Research (NIH-NIDR), Bethesda, MD (September, 1998).
7. Scaffolds for cell, growth factor, and plasmid DNA delivery. Biochemistry Dept., Northeastern Ohio Universities College of Medicine, Rootstown, OH (May, 1999).
8. Role of synthetic matrices in the development of engineered tissues. Houston Biomaterials Research Center, Houston, TX (November, 1996).
9. Polymeric matrices control the formation of new tissues. Dept. Chemical Engineering, Virginia Polytechnical Institute, Blacksburg, VA (March, 1998).
10. Polymer matrices for tissue engineering. University of Georgia Dental School, Athens, GA (February, 1998).
11. Materials to determine the macro- and microstructure of transplanted cells. Center for Molecular Biophysics and Biophysical Chemistry, Rutgers University, New Brunswick, NJ (February, 1997).
12. From cells to tissues in vitro: role of synthetic extracellular matrices. Forsythe Dental Institute, New York, NY (March, 1997).
13. Controlling development of engineered tissues via matrix signaling. Dept. Chemical Engineering, Akron University, Akron, OH (March, 1998).
14. Cell interactive polymers for tissue engineering. University of Pittsburgh, Pittsburgh, PA (October, 1999).
15. Cell interactive polymers for tissue engineering. Dept. Chemical Engineering, State University of New York – Buffalo, Buffalo, NY (October, 1999).
16. Cell interactive polymers for tissue engineering. Center for Innovative Minimally Invasive Therapies – Massachusetts General Hospital/Harvard Medical School, Cambridge, MA (November, 1999).
17. Biomaterials for tissue engineering and drug delivery. National Institute of Standards and Technology Advanced Technology Program (NIST ATP) Annual Meeting, San Jose, CA (November, 1999).
18. Cell interactive polymers for tissue engineering. Tissue Engineering Center, University of Massachusetts Medical School, Worcester, MA (January 2000).
19. Biodegradable polymers for drug delivery. University of Minnesota Drug Delivery Center, Minneapolis, MN (February, 2000).
20. Tissue Engineering. Plenary speech Western Michigan University Engineers' Week Dinner, Kalamazoo, MI (February, 2000).
21. Polymers for Tissue Engineering. Chemical Engineering Dept. Patten Seminar Series, University of Colorado, Boulder, CO (April, 2000).
22. Cell interactive polymers. Engineered Biomaterials Center, University of Washington, Seattle, WA (August, 2000).
23. Polymers for tissue engineering. Regensburg University, Regensburg, Germany (October, 2000).
24. Tissue engineering materials. Northwestern University, Evanston, IL (January, 2001).
25. Cell interactive polymers for tissue engineering. University of California-Santa Barbara, Santa Barbara, CA (March 2001).
26. Engineering capillary networks. Biomedical Engineering, Cleveland Clinic, Cleveland, OH (April 2001).
27. Tissue engineering using hydrogels. Dept. Chemical Engineering, Massachusetts Institute of Technology (Laboratory of Robert Langer), Cambridge, MA. (July 10, 2001).
28. Cell interactive polymers for tissue engineering. Surgery Dept., Massachusetts General Hospital/Harvard Medical School, Boston, MA (July 12, 2001).
29. Engineering blood vessels. Dept. Biochemistry, Boston University School of Medicine, Boston, MA (July 17, 2001).
30. Polymers for tissue engineering. Urology Dept., Children's Hospital, Boston, MA (August 14, 2001).

31. Hydrogels for Tissue Engineering. Tissue Engineering Laboratories, University of Massachusetts Medical Center, Boston, MA (August 16, 2001).
32. Tissue engineering. Stanford University, Palo Alto, CA (April 2001)
33. Cell interactive polymers for tissue engineering, Duke University, Durham, NC (November 2001).
34. Tissue engineering. Dept. Biomedical Engineering. Columbia University, New York City, NY (February 2002).
35. Engineering bone tissue. McGowan Institute for Regenerative Medicine. University of Pittsburgh, Pittsburgh, PA (February 2002).
36. Engineering microvessel networks. Biomedical Engineering. University of Virginia, Charlottesville, VA (April 2002).
37. Cell interactive polymers for tissue engineering. Chemical Engineering Dept. University of Washington, Seattle, WA, (May 6, 2002).
38. Cell interactive polymers for tissue engineering. NIH Directors Wednesday Afternoon Lecture, Bethesda, MD (May 8, 2002).
39. Tissue engineering. Chemical Engineering Dept., U. Massachusetts Amherst, MA (December 2002)
40. Growing tissues. Biological engineering. MIT, Cambridge MA (December 2002).
41. Mechanotransduction in tissue engineering. Center for Organogenesis, University of Michigan, Ann Arbor MI (January 2003)
42. Tissue engineering. School of Medicine, University of Georgia, Athens GA (January 2003)
43. Polymer scaffolds for tissue engineering. Engineered tissue growth conference. Pittsburgh PA (March 2003)
44. Cell instructive materials. Institute of Biomaterials and Biomedical Engineering, U. Toronto, Toronto, Canada (May 2003).
45. Tissue Engineering. Oporto University, Porto Portugal (June 2003)
46. Tissue engineering. Chemical engineering, University of Illinois, Urbana IL (October 2003).
47. Cell instructive materials for tissue engineering. Biomedical Engineering, Yale University (October, 2003)
48. Cell instructive polymers. Chemical Engineering, Purdue University (November, 2003).
49. Design of hydrogels for tissue engineering. Materials Science and Engineering. Northwestern University (February 2004).
50. Tissue engineering. Chemical Engineering, California Institute of Technology, Pasadena CA (May 2004).
51. Materials for temporally controlled drug delivery. CIMIT Program of Harvard Medical School, Boston MA (September 2004).
52. Cell interactive polymers for tissue regeneration. Hunter Lecture – Clemson University, Charleston SC (December 2004).
53. Tissue Engineering. Biomedical Engineering University of Iowa (January 2005).
54. Designing Materials to Guide Cell Fate. Hougen Symposium University of Wisconsin, Madison (January 2005).
55. Bone Regeneration via Material Signaling. University of Iowa Dental School (January 2005).
56. Controlled Drug Delivery for Therapeutic Angiogenesis. Center for Cell Therapy, Baylor University (March 2005).
57. Engineering New Vascular Networks. Center for Cell Therapies. Baylor College of Medicine Houston TX (March 2005).
58. Engineering Vascular Networks. University of California, Irvine, Chemical Engineering Department (May 2005).
59. Morphogen and Growth Factor Delivery. University of Virginia Morphonenesis Symposium (May 2005).
60. Cell Instructive Polymers. Trinity college Dental School, Dublin, Ireland (June 2005).
61. Controlled Delivery of Morphogens and Growth Factors, Rice University Tissue Engineering Course (August 2005).
62. Cell Instructive Polymers, University of Connecticut (January 2005).

63. Cell Interactive Polymers Guide Tissue Formation. Carnegie Mellon University Biomedical Engineering Department (December 2005).
64. Biologically-Driven Design of Hydrogels for Tissue Regeneration, University of Texas, Houston, TX (January 2006).
65. Biologically-Driven Design of Hydrogels for Tissue Regeneration, Yale University, New Haven, CT (January 2006).
66. Biologically-Driven design of Hydrogels for Tissue Regeneration. Brown University, Department of Biomedical Engineering, Providence, RI (February 2006).
67. Cell instructive materials, University of Pennsylvania, Philadelphia, PA (May 2006).
68. Cell Instructive Polymers, Cell-Based Therapies and Tissue Engineering 5th Annual Short Course, Case Western Reserve University, Cleveland, OH (May 2006).
69. Cell Instructive Materials, Skeletal Research Center, Cleveland, OH (May 2006).
70. Cell Instructive Materials, Joslin Diabetes Center, Boston, MA (July 2006).
71. Bone Regeneration using Biomaterials. McGill University Dental School, Montreal, Canada (September 2006).
72. Spatiotemporal Control of Growth Factor Delivery for Angiogenesis. Boston University, Boston, MA (October 2006)
73. Biology-Driven Material Design for Tissue Regeneration. Material Research Laboratory Seminar Series, California Institute of Technology, Pasadena, CA (November 2006).
74. Tissue Regeneration using Material Systems. Distinguished Lecture Series at the Hospital for Special Surgery, Cornell University, New York, NY (December 2006).
75. Angiogenesis on Demand: A tool for regenerative medicine. Emory/Georgia Tech Biomedical Engineering Department, Atlanta GA (January 2007).
76. Polymers Driving Regeneration. University of Maryland, Chemical Engineering Department, Baltimore, MD (February 2007)
77. Lindsay Lecture Series, Texas A & M, College Station, TX (March 2007)
78. Quantifying the Cell-Material Interface with FRET: a tool for rationale biomaterial design. Worcester Polytechnic Institute, Worcester MA (March 2007)
79. Quantifying the cell-material interface with FRET. Institute for NanoBioTechnology (INBT) at Johns Hopkins University, Baltimore, MD (April 2007).
80. Angiogenesis on Demand. Harry G. Fair Lecture, University of Oklahoma, Norman OK (May 2007).
81. Non-cell based tissue regeneration *Scaffolding and pharmaceutical approaches,* Palingenesia: Tissue Healing and Regeneration Symposium, Harvard Medical School, Boston MA (May 2008)
82. Seminar Series, Vanderbilt University, Nashville TN (October 2007)
83. Spatial Control by Vascular Networks, The Fourth International Conference on Cell Therapy for Cardiovascular Disease, Columbia University, NY (January 2008)
84. Angiogenesis on Demand, John Hopkins University, Baltimore MD (February 2008)
85. Angiogenesis on Demand, Feinberg Cardiovascular Research Institute, Seminar Series, Northwestern University, Chicago, Il (May 2008)
86. Scaffolds for tissue repair and angiogenesis, Center for Wound Healing and Tissue Regeneration Fibrosis and Scarring, UIC College of Dentistry, Chicago, Il (May 2008)
87. 9th Advanced Summer Course in Cell-Materials Interactions INEB - Instituto de Engenharia Biomedica, Universidade do Porto, Portugal (June 2008)
88. Seminar Series, University of Delaware, Newark, DE (Oct 2008)
89. Material Systems to Program Cells *in situ,* Bioengineering Seminar Series, Duke University, Durham NC (October 2008)
90. Cornell Stem Cell Symposium, Cornell University, Ithaca, NY (Nov. 2008)
91. Material Systems to Program Cells in Situ, BioE departmental seminar series, UC Berkeley, Berkeley, CA (Jan, 2009).
92. Graduate Seminar Series, Purdue University, West Lafayette, IN (February 2009)
93. Cell Therapies: Can they be Effective and Practical?, Seminar Series, University of Illinois, Urbana, IL (May, 2009).

94. Materials to program cells in situ for regeneration and immunotherapy. Department of Mechanical Engineering and Mechanics, Drexel University, Philadelphia, PA (October, 2009).
95. Angiogenesis on demand. School of Engineering & Applied Science, Yale University, New Haven, CT (November, 2009).
96. Invited Seminar, California Institute of Technology Soft Biomaterials Workshop, Pasadena, CA (February, 2010).
97. Materials to program cells *in situ* for regeneration and immunotherapy. Department of Bioengineering, University of Pennsylvania, Philadelphia, PA (February, 2010).
98. Materials to program cells *in situ* for regeneration and immunotherapy. BME Symposium on Quantitative Biology and Physiology, Boston University, Boston, MA (February, 2010).
99. Materials to program cells *in situ*. Chemical and Biomolecular Engineering Department, University of California, Los Angeles, CA (March, 2010).
100. Materials to program cells *in situ*. University of Maryland Dental School, Baltimore, MD (March, 2010).
101. Polymers to control cell trafficking and tissue regeneration. National University of Ireland, Galway, Ireland (March, 2010).
102. 3D tumor models and cancer vaccines. The University of Tennessee Cancer Institute, Germantown, TN (May, 2010).
103. Materials to program cells *in situ*. The Rockefeller University, New York, NY (May, 2010)
104. Materials for 3D tumor models and cancer immunotherapies. School of Medicine, Tufts University, Boston, MA (May, 2010).
105. Programming cells *in situ* with polymers. Stanford University, Palo Alto, CA (October, 2010).
106. Angiogenesis on demand. Department of Biomedical Engineering, University of California, Davis, CA (October, 2010).
107. Programming cells *in situ* with polymers. Orthopedic Research Day, University of California, Davis, CA (October, 2010).
108. Materials to program cells *in situ*. Department of Chemical and Materials Engineering, University of Alberta, Calgary, AB (November, 2010).
109. Moving the biology into the body. Department of Chemical Engineering, University of South Carolina, Columbia, SC (February, 2011).
110. Moving the biology into the body. Department of Biomedical Engineering, Tufts University, Medford, MA (March, 2011).
111. Materials to programs cells *in situ*. University of Toronto, Toronto, ON, Canada (March, 2011).
112. Programming cells *in situ* with polymers. Allen and Constance Ford Distinguished Lecture, Case Western Reserve University, Cleveland, OH (April, 2011).
113. Infection mimicking polymers. Department of Chemistry, Brandeis University, Waltham, MA (April, 2011).
114. Polymers to direct cell trafficking and fate *in vivo*. Massachusetts General Hospital, Boston, MA (June, 2011).
115. Angiogenesis on demand. Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN (October, 2011).
116. Infection-mimicking polymers. Program in Polymer Science and Technology, Massachusetts Institute of Technology, Cambridge, MA (November, 2011).
117. Infection-mimicking polymers. Two Genes Memorial Lecture. Northwestern University, Evanston, IL (May, 2012).
118. Polymers for controlled factor and cell release. Case Western Reserve University, Cleveland, OH (May, 2012).
119. Polymers to program cells in situ. IBB Distinguished Lecture, Georgia Institute of Technology (September 2012).
120. Role of substrate stiffness in regulating stem cells. Chemical Engineering Dept., Georgia

Institute of Technology (September 2012).
121. Controlled drug and cell release. AEMB Induction, Boston University (October 2012).
122. Biomaterials for drug and cell delivery. Beth Israel Deaconess Hospital Surgical Horizons Seminar (October 2012).
123. Biomaterials as synthetic extracellular matrices. Seoul National University (Korea) (December 2012).
124. Infection-Mimicking Materials as Cancer Vaccines. Department of Polymer Science, the University of Akron, Akron, Ohio (March 2013).
125. Infection-Mimicking polymers as cancer vaccines. Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD (April 2013).
126. Polymers for Controlled Factor and Cell Release. CTTE Short Course, Western Reserve University, Cleveland, OH (May 2013).
127. Stem cell niches for regenerative medicine. Fifth Middle East Symposium in Dental Medicine, Hebrew University, Jerusalem, Israel (July 2013).
128. Biomaterial and Drug Delivery for Tendon Regeneration. Expert Tendon Perspectives 2013, ETH Zurich, Zurich Switzerland (August 2013).
129. Polymeric biomaterials to control stem cell populations. Department of Biomedicine, University Hospital Basel, Switzerland, (October 2013).
130. Biomaterials as therapeutic cancer vaccines. BBC Seminar, University of California San Francisco, San Francisco, CA (January 2014).
131. Controlling Biology with Biomaterials: from Bone Regeneration to Cancer Vaccines. GSDM Science Day 2014, Keynote Speaker, Boston University, Boston, MA (January 2014).
132. Stiffness and Beyond: Do Cells Notice Viscoelasticity? 16th Annual Conference of NCTERMS, Keynote Speaker, Duke University, Durham, NC (October 2014).
133. Therapeutic cancer vaccines based on biomaterials. Wuisman Lecture, Center for Translational Medicine, VU University Medical Center, Amsterdam, The Netherelands (October 2014)
134. Biomaterials-based therapeutic cancer vaccines. Department of Chemical and Biological Engineering, Iowa State University, Ames Iowa (December 2014).
135. Novel drug delivery approaches to cancer immunotherapy. Brigham and Women's Hospital, Boston, MA (January 2015).
136. Biomaterial-based therapeutic cancer vaccines. Biomaterials Day 2015 Keynote Speaker, University of Washington, Seattle WA (March 2015).
137. Biomaterials as Therapeutic Cancer Vaccines. Biomedical Engineering Seminar Series, University of Wisconsin, Madison WI (March 2015).
138. Biomaterials as Therapeutic Cancer Vaccines. Biomedical Engineering Seminar Series, University of Wisconsin, Madison WI (March 2015).
139. Biomaterials as therapeutic cancer vaccines. 2015 Kewaunee Distinguished Lecture, Duke University, Durham, NC (April 2015).
140. Biomaterials as therapeutic cancer vaccines. Biomedical Engineering Seminar, Brown University, Providence, RI. (April 2015).
141. Translational Tissue Engineering, International Symposium of Engineering Complex Tissues.Drexel University School of Biomedical Engineering Science and Health Systems, Philadelphia, PA (April 2015).
142. Biomaterials: Making Cell Therapies Effective and Practical. Keynote Lecture, 14th Annual Cell-Based Therapies & Tissue Engineering, Case Western University, Cleveland OH. (May 2015).
143. Biomaterials as therapeutic cancer vaccines. Molly Shoichet Symposium on Innovation in Regenerative Medicine. University of Toronto, Toronto, Canada, (June 2015).

144. Biomaterial-based Therapeutic Cancer Vaccines. Polymer Science & Engineering Department at University of Massachusetts, Amherst, MA. (September 2015).
145. Dynamic reciprocity between cells and microenvironment: acute response. Workshop on Cell-Matrix Mechanobiology, University of Illinois at Urbana-Champaign (October 2015).
146. Beyond stiffness: stem cells and viscoelasticity. The Skeletal, Craniofacial and Oral Biology Graduate Program Seminar Series, University of Connecticut Health Center, Farmington, CT (November 2015).
147. Biomaterials and Cancer: Engineering the Microenvironment, Mechanical Engineering Department, Cornell University, Ithaca, NY (November 2015).
148. Materials to regulate immune cell trafficking and activation. Immunomodulation of Stem Cells 2015 Workshop, King's College London Centre for Stem Cells and Regenerative Medicine, London, England (December 2015).
149. Material-based therapeutic cancer vaccines. 20th Annual Symposium on Nanobiotechnology, University of California Los Angeles, Los Angeles, CA (Feb 2016).
150. Therapeutic cancer vaccines from biomaterials. TRB Distinguished Biomaterials Lecturer Spring 2016, Boston University, Boston, MA; (March 2016).
151. Biomaterial mechanics and musculoskeletal regeneration. Faculty Excellence Speaker Series, University of Central Florida, Orlando, FL; (April 2016)
152. Biomaterials to regulate immune cell trafficking and activation. Immune Engineering Symposium, Koch Institute for Integrative Cancer Research, MIT, Cambridge, MA; (May 2016),
153. Biomaterial-based therapeutic cancer vaccines. Molecular Pharmacology & Chemical Biology Programs Research Seminar Series, Memorial Sloan-Kettering Cancer Center, New York, NY; (May 2016).
154. Cells and Viscoelasticity, Founders Day Lecture. Chemical and Biological Engineering Department, University of Wisconsin, Madison, WI; (May 2016).
155. Cells and Viscoelasticity. McGill Dentistry Graduate Student Society Seminar, Montreal Canada; (May 2016).
156. Stiffness and Viscoelasticity: Impact on Stem Cell Fate. Center of Biomaterials at KIST International Advisory Committee Program, Seoul, South Korea; (July 2016)
157. Transplanted Cells and Viscoelasticity. Stanford Bio-X & ADATE Symposium, Palo Alto, California; (September 2016)
158. Material-Based Immunotherapy. Johns Hopkins 14th International Nanoscience and Drug Delivery Symposium, Baltimore, Maryland; (September 2016)
159. Viscoelasticity: Cell Populations to Single Cells. University of Rochester Biomedical Engineering Seminar Series, Rochester, New York (November 2016).
160. Building Immunity with Biomaterials. University of Pennsylvania, Britton Chance Lecture Series, Philadelphia, Pennsylvania (December 2016)
161. Building Immunity with Biomaterials, Bioengineering Colloquia, Rice University, Houston TX,(January 2017).
162. Building Immunity with Biomaterials, Biomaterials Day, Northeastern University, Boston, MA (March 2017).
163. Building Immunity with Biomaterials, ChemEngDay UK 2017, University of Birmingham, UK (March 2017).
164. Mesenchymal Stem Cells and Viscoelasticity, Larry Hench Lecture, King's College London, London UK (March 2017).
165. Cells and Viscoelasticity, Chemical and Biomedical Engineering Seminar, FAMU-FSU College of Engineering, Tallahassee, FL (April 2017).

166. Building Immunity with Biomaterials, Department of Materials Science and Engineering Spring Seminar Series, Drexel University, Philadelphia, PA (April 2017).
167. Building immunity with biomaterials, Bioengineering Symposium, University of New Hampshire, Durham, (May 2017)
168. Biomaterial-Based Therapeutic Cancer Vaccines, Engineering Immunity Seminar Series, Vanderbilt University Medical Center, Nashville, TN (May 2017).
169. "Mesenchymal Stem Cells and Viscoelasticity", Fifth annual micro- and nanotechnologies for Medicine workshop, Stem Cells, Immunomodulation and Cancer Therapy session, Harvard Medical School, Boston, MA (June 2017).
170. Cells and Viscoelasticity 25th Anniversary of the Advances in Tissue Engineering, Rice University, Houston, TX (August 2017).
171. Regenerative Biomaterials, Keynote Speaker, BME Bicentennial Celebration University of Michigan, Ann Arbor, MI, (September 2017)
172. Stress relaxation and stem cells, Biochemistry Division Seminar, University of Colorado, Boulder, CO, (September 2017)
173. Soft materials to build hard tissues, Distinguished Lecture Series 2017-2018 Ohio State University, Columbus, OH, (October 2017)
174. Exploiting mechanics to promote regeneration, 6th Annual Symposium on Regenerative Rehabilitation, University of Pittsburgh, McGowan Institute for Regenerative Medicine, Pittsburgh, PA (November 2017).
175. Stem Cells and Viscoelasticity, Student Choice Seminar, Bioengineering Graduate Student Society (BGSS), University of Maryland, College Park, MD, (December 2017).

Other major **invited talks:**

1. Design and fabrication of cell delivery devices to engineer new tissues. Gordon Research Conference-Polymers in Biosystems, Oxnard, CA (February, 1994).
2. Engineering tissues using cell transplantation on synthetic, biodegradable polymer devices. 2nd World Congress on Biomechanics, Amsterdam, The Netherlands (July, 1994).
3. Regulation of hepatocyte function by cell shape and soluble signals. Gordon Conference-Biocompatibility and Biomaterials, Nashua, NH (July, 1995).
4. Design of matrices to deliver cells and growth factors. ICB Conference: Strategies for soft and hard tissue engineering and repair, Washington, DC (August, 1995).
5. Tissue Engineering. American Academy of Maxillofacial Prosthetics 1996 Annual Meeting, Kansas City, MO (October, 1996).
6. In vitro and in vivo models for the reconstitution of cell-cell signaling. Conference on Salivary Gland Biogenesis and Function (November, 1996).
7. Synthetic extracellular matrices to recreate three-dimensional cell-cell interactions. Engineering Foundation Meeting: Biochemical Engineering X (May, 1997).
8. Synthetic extracellular matrices to guide tissue formation. Second International Workshop of Tissue Engineering for Therapeutic Use, Tokyo, Japan (October, 1997).
9. Biomaterials issues for the regulation of tissue engineering. FDA Course on Tissue Engineering, Washington, DC (February, 1998).
10. Controlled release to induce a vascular growth supply for tissue engineering. Fourth European Symposium on Controlled Drug Delivery, Noordwijkaanzee, Netherlands (April, 1998).
11. Tissue engineering using biodegradable synthetic matrices. Keynote address - Second Japanese Cell Transplant Society Meeting, Osaka, Japan (April, 1998).
12. Tissue engineering matrices. Gordon Conference on Salivary Glands and Saliva, Ventura, CA (February, 1999).
13. Controlled delivery of inductive proteins and plasmid DNA from tissue engineering matrices. 11th International Conference on Periodontal Research, Goteborg, Sweden (June, 1999).

14. Polymers for dental tissue engineering. Carolinas Tissue Engineering Society, Charlotte, NC (July, 1999).
15. New biologic therapies in dentistry. American Association of Public Health Dentistry, Waikiki, HI (October, 1999).
16. Cell interactive polymers for tissue engineering. American Chemical Society Natl. Meeting, San Francisco, CA (March 2000).
17. Tissue engineering using cells, polymers, and inductive molecules. 100th Annual Congress of Japanese Surgical Society, Tokyo, Japan (April 2000).
18. Engineered extracellular matrices. Gordon conference: Signal Transduction Through Engineered Extracellular Matrices, Nashua, NH (June, 2000).
19. Future of tissue engineering in dentistry. ITI, Luzern, Switzerland (October 2000).
20. The future of organ transplantation. Keynote Talk - Choices and Challenges Forum, Blacksburg VA (November 2000).
21. Mechanical coupling between cells and materials. DARPA/DSRC Workshop, Alexandria VA (May 2001).
22. Bioethical clashes in the separation of church and state. Genesis Bioethics Panel Event. Ann Arbor MI (May, 2001).
23. Controlling tissue formation via the chemistry and mechanics of the cell-biomaterial interaction. Gordon Conference on Biomaterials: Biocompatibility and Tissue Engineering. Holderness, NH (July, 2001).
24. Tissue engineering. European Osseointegration Society. Milan Italy (September, 2001).
25. Cell interactive polymers for tissue engineering. 87th Annual Meeting American Academy of Periodontology. Philadelphia PA (October, 2001)
26. Synthetic extracellular matrices for tissue engineering and regeneration. World Congress of Nephrology. San Francisco CA (October, 2001).
27. Cell interactive polymers. TechVest 3rd Annual Conference on Tissue Repair. New York NY (October, 2001).
28. Biomaterials for tissue engineering. DARPA TCAD Mtg., Arlington VA (December 2001).
29. Tissue engineering: providing information from polymer scaffolds. Gordon Conference on Composites, Ventura Beach CA (January 2002).
30. Microvascular tissue engineering. Society for Cardiovascular Pathology, Chicago IL (February 2002).
31. National Academy of Sciences workshop on NASA research program, Los Angeles, CA (February 2002).
32. Cell instructive materials for tissue engineering. International Association for Dental Research, San Diego, CA (March 2002).
33. Engineering capillary networks. Engineered Tissue Growth Conference, Pittsburgh, PA (March 2002).
34. Engineering blood vessel networks with controlled angiogenic factor delivery. European Controlled Release Society, Amsterdam, Netherlands (April 2002)
35. Cell interactive polymers for tissue engineering. Aegean Conference on Tissue Engineering Myconos, Greece (May 2002).
36. Design of vascular networks for engineered tissues. Symposium on Tissue Engineering Science, Myconos, Greece (May 2002).
37. Polymer vehicles for single and multiple local growth factor delivery. Gordon Research Conference: Signal Transduction through Engineered ECM, Connecticut College, Connecticut (June 2002).
38. Vehicles for inductive molecule delivery. Biomedical Eng. Society Houston, TX (October 2002).
39. Cell instructive polymers. Cold Spring Harbor Laboratory Conference on Tissue Engineering. Cold Spring Harbor, NY (November 2002).
40. Mechanotransduction in tissue engineering. Center for Organogenesis, University of Michigan, Ann Arbor MI (January 2003).
41. Tissue engineering. Keystone Conference on Optical Imaging: Applications to medicine and biology Taos, NM (February, 2003)

42. Biomineralization in tissue engineering. Gordon Conference on Metal Ions in Biology, Ventura CA (February 2003).
44. Cell instructive materials. Keystone conference on From Stem Cells To Therapy, Steamboat Springs, CO (April 2003).
45. Peptide modified polymers to regulate cell function. Society for Biomaterials Reno, NV (April 2003).
46. Cell interactive polymers. Materials Research Society, San Francisco CA (April 2003).
46. Delivery vehicles. Pittsburgh Bone Symposium, Pittsburgh PA (August 2003)
47. Promoting neovascularization. Current Progress in Tissue Engineering, Boston MA (October 2003).
48. Smart Materials for Tissue Engineering. Tissue Engineering Society Webcast (February 2004).
49. Polymers for Controlled Delivery Angiogenic Molecules, ISACB, Savannah GA (March 2004).
50. Delivery systems. Bone Summit, Cleveland OH (May 2004)
51. Cell instructive polymer. Case Western Reserve University Tissue Engineering Short Course, Cleveland OH (April 2004)
52. Tissue regeneration and engineering. Plastic Surgery Research Council Ann Arbor MI (May 2004)
53. Morphogen delivery systems. Rice University Tissue Engineering Short Course, Houston TX (August 2004)
54. Tissue Engineering Delivery Vehicles. Keynote Address COAST Meeting, Asilomar CA (August 2004)
55. Delivery vehicles for cells and inductive molecules. World Congress of Osseointegration. Venice Italy (October 2004).
56. Tissue engineering. Columbia University 200th Anniversary Symposium, New York NY (October 2004).
57. Cell instructive materials for tissue regeneration. American Society for Matrix Biology, San Diego CA (November 2004)
58. Cell instructive materials. Current Progress in Tissue Engineering, Cambridge MA (October 2004).
59. Hydrogel design for tissue regeneration. Materials Research Society Boston MA (December 2004).
60. Restoration of function through tissue engineering. Keynote speaker: GRC on Salivary Glands and Exocrine Secretion, Ventura CA (February 2005).
61. Delivery of inductive molecules, genes and cells. Institut Pasteur Euroconference on Tissue Repair and Ulcer/Wound Healing Paris, France (March 2005)
62. Cell Interactive Polymers Guide Tissue Formation, Society for Biomaterials. Memphis TN (April 2005).
63. Tissue Engineering. Morphogenesis and Regenerative Model Symposium, Charlottesville, VA (May 2005).
64. Temporally Regulating Factor Delivery with Polymeric Delivery Vehicles. Regenerate 2005, Pittsburgh PA (June 2005).
65. Regulating the Cell-Material Adhesive Interface. Gordon Research Conference on Organic Thin Films, Newport RI (July 2005).
66. Cell Interactive Hydrogels for Bone Regeneration. Gordon Research Conference on Elastomers, Colby College NH (July 2005).
67. Spatiotemporal Regulation of Signaling to Control Tissue Regeneration. Gordon Research Conference on Biomaterials, Biocompatibility and Tissue Engineering (August 2005)
68. Tissue Engineering: Single and Multicomponent Systems. Keynote speaker, Japanese Tissue Engineering Society, Tokyo Japan (August 2005).
69. Enhancing bone regeneration by exploiting cross-talk between angiogenesis and osteogenesis. BMES, Baltimore MD (September 2005)
70. Cell Instructive Polymers. Orthopedic Research Society, Chicago IL (March 2006).
71. Spatiotemporal control of growth factor delivery for angiogenesis. ICAB 2006 Conference Capri, Italy (June 2006).

72. Growth factor delivery systems for angiogenesis. Gordon Research Conference on Signal Transduction by Engineering Extracellular Matrices. Connecticut College CT (July 2006).
73. Materials Systems for Tissue Regeneration: National Academy Keck Futures Iniative, University of California, Irvine CA (September/October 2006).
74. Controlling the availability and uptake of expression of plasmid DNA. TERMIS-EU, Rotterdam, the Netherlands (October 2006).
75. Engineering hybrid bony organs in vitro. 25th Army Science Conference, Orlando FL (November 2006).
76. Materials to regulate cell fate in vitro and in vivo. Society for Physical Regulation in Biology and Medicine (SPBRM) 25th Scientific Conference, Honolulu, Hawaii (January 2007).
77. Materials for angiogenesis on demand. Workshop on Stem Cells in Regenerative Medicine and Tissue Engineering, National Science Foundation, Washington DC (February 2007).
78. Constructing Tissue Microenvironments. Keystone Symposium on Stem Cell Interactions with their Microenvironmental Niche. Keystone, CO (March 2007).
79. Quantifying the cel-material interface with FRET. Worcester Polytechnic Institute. Worcester, MA (March 2007).
80. Temporal and Spatial Regulation of Growth Factor Availability. Keystone Symposium on Tissue Engineering and Development Biology, Salt Lake City, UT (April 2007).
81. Artificial stem cell niches. Harvard Integrated Life Sciences Symposium on Tissue Engineering and Regeneration (April 2007).
82. Angiogenesis on demand. Gordon Research Conference on Tissue Repair and Regeneration, Colby, NH (June 2007).
83. Polymer systems to regulate angiogenesis. Retreat of the Georgia Institute of Technology Tissue Engineering Center, Lake Lanier GA (August 2007).
84. Bioengineering Approaches to Stimulating Therapeutic Neovascularization. World Congress of Microcirculation, Milwaukee WI (August 2007).
85. Frontiers in Integrative Biological Research (FIBR) Meeting 2008 Charleston, South Carolina (Jan 2008)
86. Materials to Program cells in situ, 10th European Symposium on controlled Drug Delivery Noorsijk aan Zee, Netherlands. (April 2008)
87. Materials to Program cells in situ, The 21st Annual Symposium on Advanced Wound Car and the Wound Healing Society Meeting, San Diego CA (April 2008)
88. Polymers for In Situ Cell Programming, NIBIB 2008 Transforming Regenerative Medicine: An Interdisciplinary Approach, Bethesda MD. (May 2008)
89. Keynote Lecture: Angiogenesis on Demand with Injectable Gels, 8th World Biomaterials Congress, Amsterdam, (May 2008)
90. Materials to program cells in situ, IADR, Tel Aviv, Israel (June 2008)
91. Programming cells in situ, TERMIS-EU Porto, Portugal (June 2008)
92. Society for Biological Engineering (SBE)'s 4th International Conference on Bioengineering and Nanotechnology (ICBN), Dublin Ireland (July 2008)
93. Programming cells *in Situ,* Cambridge Healthtech Institute's Third Annual CELLutions SUMMIT, Harnessing Cells as Tools, Technologies, and Therapies, Cambridge, MA (Aug 2008)
94. Qualifying the Cell-Material Interface with FRET, Gordon Research Conference (GRC) Biointerface Science Centre Paul Langevin, Aussois, France (September 2008)
95. 2nd International Symposium on Biotechnology in Musculoskeletal Repair" Lausanne, Switzerland. "Materials for angiogenesis on demand" (October 2008)
96. National Academy of Engineering (NAE) Annual Meeting, Washington, DC (Oct 2008)
97. MRS Symposium, Boston, MA (December 2008)
98. TERMIS-NA, San Diego, CA. Session Chair: Gene Therapy and Tissue Engineering. (Dec 2008)
99. Cardiovascular Research Technologies 2009; New Materials for Tissue Engineering: Towards Greater Control Over the Biological Response (March 2009)

100. NIDDK Smooth Muscle, Bethesda, MD; "Material Systems to Engineer Smooth Muscle" (March 2009)
101. Northeast Bioengineering Conference; "Materials to program cells in situ", Boston, MA (April 2009)
102. Invited Talk, American Transplant Congress, Boston, MA (May, 2009).
103. Materials to regulate cell trafficking *in vivo*: From regeneration to immunotherapies. National Institutes of Health, Bethesda, MD (June, 2009).
104. Materials to program cells *in situ*. Materials Research Society Fall Meeting, Boston, MA (November, 2009).
105. Programming cells *in situ* using polymers. SBE Stem Cell Conference (May, 2010).
106. Speaker at Signal Transduction By Engineered Extracellular Matrices, Gordon Research Conference. University of New England, Biddeford, ME (June, 2010).
107. Tissue formation supported by biomaterials. 3rd International Congress on Stem Cells and Tissue Formation, Dresden, Germany (July, 2010).
108. Polymers to program the immune system in situ. NIH Chemical Insights into Biological Processes Conference, Bethesda, MD (August, 2010).
109. Controlled Growth Factor Delivery for Tissue Engineering. Advances in Tissue Engineering Short Course at Rice University, Houston, TX (August, 2010).
110. Invited Plenary Lecture. POLY/PMSE Symposium: Medical Applications of Polymers, American Chemical Society 2010 Annual Meeting, Boston, MA (August, 2010).
111. Engineered angiogenesis. International Society for Applied Cardiovascular Biology's 12th Biennial Meeting, Boston, MA (September, 2010).
112. Biopolymers. 11th Annual Wound Healing Conference, St. Thomas, USVI (December, 2010).
113. Polymers to control cell trafficking. The 15th International Symposium on Recent Advances in Drug Delivery, Salt Lake City, UT (February, 2011).
114. Keynote Address at Upper Midwest Biomaterials Day, University of Michigan, Ann Arbor Michigan (May, 2011).
115. Polymers to control cell trafficking *in vivo*. Organogenesis Symposium, University of Michigan, Ann Arbor, MI (May, 2011).
116. Polymers to control immune cell trafficking. The 23rd Pezcoller Symposium, Trento, Italy (June, 2011).
117. Keynote Lecture. Cell communication using chemical, mechanical and electrical signals. Nachwuchsakademie Medizintechnik 2011, Berlin, Germany (August, 2011).
118. Invited lecture. Infection-Mimicking Polymers as a Cancer Vaccine. Warren Alpert Foundation 2011 Prize Symposium, Boston, MA (October, 2011).
119. Biomaterials to control cell trafficking. NAVBO Workshop in Vascular Biology, Hyannis, MA (October, 2011).
120. Keynote Lecture. Controlling Cell Trafficking in Vivo with Biomaterials. Biointerface 2011 Conference, Bloomington, MN (October, 2011).
121. Invited lecture. Polymeric Cancer Vaccine. BASF Nanosymposium: Nano meets Pharma, Cambridge, MA (November, 2011).
122. Keynote Lecture. Cancer vaccines based on tissue engineering strategies. TERMIS North America Annual Conference, Houston, TX (December, 2011).
123. Keynote Lecture. Biomaterials design based on ECM mechanics – Going beyond elastic modulus. Bio-Inspired Materials Conference 2012, Potsdam, Germany (March, 2012).
124. Invited Lecture. Infection-mimicking polymers. Gordon Research Conference on Bioinspired Materials, Davidson, NC (June, 2012).
125. Invited Lecture. Biomaterials design based on ECM mechanics – Going beyond elastic modulus. Gordon Research Conference on Signal Transduction by Engineering Extracellular Matrices, Biddeford, ME (July, 2012).
126. Synthetic Stem Cell Niches. Regenerative Medicine Syposium, Bordeaux France (September 2012).
127. Angiogenesis on demand. Boston Angiogenesis Symposium. Boston, MA (November 2012).
128. Polymers for immunotherapy. Keystone Symposium on Cancer Immunology and Immunotherapy, Vancouver, Canada (February 2013).

129. Regenerative Medicine: Technologies Enabling Novel Therapies. 19th Annual Hilton Head Workshop, Keynote Speaker, Hilton Head Island, SC (March 2013).
130. Skeletal Repair and Biomaterials Platforms. Group de Rechereche Interdisciplinaire sur les Biomateriaux Osteoarticulaires Injectables (GRIBOI) 2013 Session, Boston MA (April 2013).
131. Infection Mimicking Polymers As Therapeutic Cancer Vaccines. 2013 Koch Institute Summer Symposium, Cambridge, MA. (June 2013).
132. Materials to control cell trafficking and fate. Bioengineering of Regenerative Medicine Symposium, Boston, MA (April 2013).
133. Nanotechnology for Cancer Vaccines. 2013 Cancer Nanotechnology Gordon Research Conference, West Dover, VT (July 2013).
134. Biomaterial carriers: a requirement for future therapies? Einstein Podium Moderator, Berlin, Germany, (August 2013).
135. Biomaterials as Therapeutic Cancer Vaccines. 2014 PBP World Meeting, Symposium Tissue Engineering and ATMP, Lisbon, Portugal (April 2014).
136. Biomaterials to control Immune Cell Trafficking and Activation. 2014 Keystone symposia on Molecular and Cellular Biology, Olympic Valley, CA (April 2014)
137. Travelogues, Successful Journeys through the Translational Research Process. 2014 Berlin Translational Symposium, Berlin, Germany (May 2014).
138. Beyond Stiffness: Do Cells Notice Viscoelasticity? WCB Meeting Musculoskeletal Tissue Engineering Symposium, Boston, MA (July 2014).
139. Biomaterials as Therapeutic Cancer Vaccines. Gordon Research Conference: Drug Carriers in Medicine and Biology, Waterville Valley, NH (August 2014).
140. Biomaterials-based therapeutic cancer vaccines. International Symposium: Advanced oncological therapies, Fundacion Ramon Areces, Madrid, Spain (October 2014).
141. Alginate Hydrogels for Wound Healing. Innovations in Wound Healing 2014 Meeting, Ducks Key, FL (December 2014).
142. Biomaterial-based, Therapeutic Cancer Vaccines, 2015 IADR General Session Distinguished Lecture Series Speaker, Boston, MA (March 2015)
143. Insights into cancer biology. Keynote Speaker, 2015 American Academy of CranioMaxilloFacial Surgeons Scientific Program, Rice University, Houston, TX. (May 2015).
144. Role of Substrate mechanics in Regulation of MSCs: Cell populations to Single Cells. Gordon Research Conference on Regenerative Engineering and Functional Materials Integration. Girona, Spain (July 2015).
145. Scientific Presentation. National Advisory Council for Biomedical Imaging and Bioengineering, Potomac, MD. (September 2015).
146. Biomaterials as therapeutic cancer vaccines. 22nd Annual Prostate Cancer Foundation Scientific Retreat, Washington, DC. (October 2015).
147. Cell and Tissue Engineering. 2nd Chemical Immunology Conference, Rode Hoed, Amsterdam, Netherlands; (April 2016)
148. Viscoelasticity and Regeneration. Nature Conference on Tissue Engineering and Regenerative Medicine, Zhongshan Ophthalmic Center, Sun Yat-Sen University, Guangzhou, China; (April 2016).
149. Biomaterial-based drug delivery. Next Generation Biologics Workshop –Review, Novartis Institutes for Biomedical Research, Cambridge, MA; (May 2016).
150. Therapeutic cancer vaccines from biomaterials.Plenary Speaker,10th World Biomaterials Congress, Montreal, Canada; (May 2016).
151. Evaluating and Developing Translational Products. Translate! 2016, Berlin, Germany; (May 2016).
152. Material-based therapeutic cancer vaccines. American Association for Cancer Research (AACR) Special Conference on Bioengineering and Physical Sciences in Oncology Boston MA;(June 2016)
153. Stem Cells and Cancer Therapy. BWH 4th Workshop in Micro-and Nanotechnologies for Medicine, Boston, MA; (July 2016)
154. Hydrogel-based Drug Delivery. 46th Orthopedic Research Society International Sun Valley Workshop: Musculoskeletal Biology, Sun Valley, Idaho; (August 2016).

155. Engineering the Microenvironment with Biomaterials. Biointerfaces International 2016 Zurich, Zurich, Switzerland; (August 2016).
156. Hydrogel Project" AgNovos Scientific Advisory Board, Bethesda, Maryland; (September 2016).
157. Cells and Viscoelastic Substrates. 1st International Conference of Molecular Engineering Polymers, Shanghai, China; (October 2016).
158. Biomaterial Mechanics, Stem Cells and Regeneration. Plenary Speaker, 5th International Conference on Stem Cell Engineering, Toronto, Canada; (October 2016).
159. Viscoelasticity: Cell Populations to Single Cells. International Conference on New Advances in Probing Cell-Extracellular Matrix Interactions, CellMatrix, Berlin, Germany; (October 2016).
160. Biomaterials for Drug & Cancer Delivery. Merck Labs, West Point, Pennsylvania; (October 2016).
161. Novel cancer immunotherapy approaches enabled by advanced engineering. BWH Grand Rounds, Boston, MA (November 2016)
162. Single Cell Encapsulation Cell Therapy and Building Tissue. pre-Termis Conference Workshop, San Diego, California; (December 2016).
163. Improving Stem Cell Therapeutics with Mechanobiology, Gordon Research Salivary Glands Conference, Galveston, TX (February 2017).
164. Microgels and Cryogels for Stem Cell Therapies, SFB 655 Closing Symposium "From Cells to Tissues", Dresden Germany (March 2017).
165. Hydrogel-based Drug Delivery, GSK-CRS Long-Acting Injectables and Implantables Conference, Philadelphia, PA, (April 2017).
166. Sustained delivery systems for macromolecular therapies, RNAMEDICINE2017, 3rd Annual Non-coding RNA Symposium,Institute for RNA Medicine - Cancer Center at Beth Israel Deaconess Medical Center, Boston, MA, (April 2017).
167. Soft materials to build hard tissues, Eve and Arthur Veis Keynote Speaker, 12th International Conference on the Chemistry and Biology of Mineralized Tissues, Potsdam, Germany, (May 2017).
168. Hydrogel-based drug delivery: preprogrammed to on-demand, Gordon Research Conference, 2017 Preclinical Form & Formulation for Drug Discovery, Stowe, VT (June 2017).
169. Organ engineering to reconstitute immunity, 8th Annual Wyss International Symposium Therapeutic Organ Engineering, Boston, MA, (September 2017)
170. Viscoelasticity: Cell Populations to Single Cells, Plenary Speaker, the 5th US-Korea Joint Workshop on Biomedical Engineering, 2017, BMES Annual Meeting, Phoenix, AZ, (October 2017).
171. New Biomaterials and Technologies, Session Chair, The Diabetic Lower Limb Symposium: From Innovation to Therapy, The Rongxiang Xu, MD, Center for Regenerative Therapeutics at Beth Israel Deaconess Medical Center and the Wyss Institute at Harvard University, Boston, MA, (November 2017).
172. Bioinspired Adhesives, Invited Speaker, 2017 Material Research Society (MRS) Fall Meeting. Boston, MA, (November 2017).

IX. EXTERNAL RESEARCH GRANT SUPPORT

A. Past

10/94-9/97	Design and fabrication of materials and devices for soft tissue engineering ($375,000 total costs; DJM is sole PI) Sponsor: Reprogenesis L.P.
9/95-8/98	Microtubules as intracellular force sensors ($209,992 in total costs; DJM is sole PI) Sponsor: Whitaker Foundation
9/95-8/99	Role of mechanical stimuli in the development of engineered smooth muscle tissue ($285,000 in total costs; DJM is sole PI) Sponsor: National Science Foundation - CAREER Award
8/96-7/01	Engineering functional liver tissue ($506,342 in total costs; DJM is sole PI) Sponsor: National Institutes of Health - FIRST Award

10/97-9/00	Engineering soft tissues with injectable materials ($534,565 in total costs; DJM is sole PI) Sponsor: Reprogenesis
10/00-7/02	Biomaterials for minimally invasive therapies ($984,571 in total costs; DJM is PI), Sponsor: Curis, Inc.
3/01-2/03	Adipose tissue regulation by polymer delivery of TNF-a ($68,092 in total costs; DJM is PI) Sponsor: NIH
8/98-7/03	Polymeric matrices with defined cell adhesion and mechanical properties ($1,143,750 in total costs; DJM is PI) Sponsor: NIH
8/98-7/03	Regulated osteoinductive plasmid gene transfer via gene activated matrices ($1,625,124 total costs; DJM is co-I, Kevin Rice is PI) Sponsor: NIH
7/04	2004 Signal transduction by engineering extracellular matrices ($25,000 in total costs; DJM is PI) Sponsor is NIH
1/00-12/05	Engineering skeletal muscle with biodegradable hydrogels ($1,498,463 in total costs; DJM is PI) Sponsor: NIH
1/01-12/05	Protein stability in polymer delivery systems ($972,023 in total costs; DJM is co-I, Steven Schwendeman is PI) Sponsor: NIH
9/01-9/05	Biomaterials for the central nervous system ($1,994,272 in total costs; DJM is co-I) Sponsor: NIH
9/02-8/07	Tissue engineering and regeneration ($5,000,000 in total costs; DJM is PI) Sponsor: NIH (This is a training grant – 7 GSRA, 4 post-doctoral fellows) – DM relinquished to another PI when he left for Harvard University.
5/03-4/08	Engineering hybrid bone organs ($5,000,000 in total costs; DJM is PI) Sponsor: Army Research Office
8/03-7/08	Engineering vascular networks ($2,282,750 in total costs; DJM is PI) Sponsor NIH
3/08-2/10	Controlled release of cells and angiogenic molecules to treat ischemia ($92,180 to support Postdoctoral Fellow, Lan Cao; DJM is PI)
9/09-8/11	Engineering skeletal muscle with biodegradable hydrogels-S1 Rev. ($300,544 in total costs; DJM is PI) Sponsor: NIH/NIDCR
1/10-1/12	BASF ferrogel project ($190,000 in total costs to Co-I; DJM is Co-I) Sponsor: BASF Aktiengesellschaft
2/10-1/12	Injectable and strong nano-apatite / stem cell scaffolds for bone regeneration ($167,064 in total costs; DJM is Co-PI) Sponsor: University of Maryland; Prime Sponsor: NIH
4/09-3/12	Materials to engineer the immune system ($504,954 in total costs; DJM is PI) Sponsor: US Army
3/10-4/12	Ultrasound triggered drug delivery ($300,000 in total costs; DJM is PI) Sponsor: Royal DSM N.V.
5/11-5/12	Induction of islet-specific regulatory T cells with novel nanomaterials ($71,250 in total costs; DJM is PI) Sponsor: The Leona M. and Harry B. Helmsley Charitable Trust
9/07-6/12	Micromechanical determinants of organ design and engineering ($826,354 in total costs; DJM is Co-PI) Sponsor: Children's Hospital, Boston; Prime Sponsor: NIH
12/11-11/12	Inducing beta cell tolerance using a material to program dendritic cells ($110,000 in total costs; DJM is PI) Sponsor: JDRF
8/04-2/14	Polymeric matrices with defined cell adhesion and mechanical properties ($3,800,000 in total costs; DJM is PI) Sponsor: NIH/NIDCR
6/09-5/14	Programming dendritic cells in concert with morphagen delivery for periodontal regeneration ($3,651,761 in total costs; DJM is PI) Sponsor: NIH/NIDCR
6/09-5/13	Using two-photon polymerization for the fabrication of 3D matrices for cell migration studies ($380,000 in total costs; DJM is Co-PI) Sponsor: NSF

5/10-8/14 Cephalodpod-Inspired Adaptive Photonic Systems (CINAPSE)
($2,426,536 in total costs; DJM is Co-PI) Sponsor: US Army

5/10-4/15 Engineering Capillary Networks
($2,438,850 in total costs; DJM is PI) Sponsor: NIH/NHLBI

9/08-8/15 Material Research Science and Engineering Center (MRSEC)
($504,954 in total costs; DJM is PI) Sponsor: US Army

9/11-7/16 Building the hematopoietic stem cell niche
($3,184,766 in total costs; DJM is PI) Sponsor: NIH

4/13-9/17 Biomaterial based breast cancer vaccine
($1,506,488 in total costs; DJM is PI) Sponsor: NIH/NIBIB

7/14-6/17 Engineering skeletal muscle with biodegradable hydrogels (Administrative Supplement)
($630,437 in total costs; DJM is PI) Sponsor: NIH/NIDCR

5/15-4/17 Human Anti-MICA Monoclonal Antibodies for Melanoma Immunotherapy
($100,000 in total costs; DJM is Co-PI) Sponsor: Dana Farber Cancer Institute; Prime Sponsor: Melanoma Research Foundation.

7/15-6/17 Stimuli Responsive, Reloadable,Drug Eluting, Smart Hydrogels for Graft Targeted Immunosuppression in Vasacularized Composite Allotranpantation.
($94,497 in total costs; DJM is Co-PI) Sponsor: University of Pittsburgh Medical Center; Prime Sponsor: DOD.

B. Current active

5/07-6/18 Engineering skeletal muscle with biodegradable hydrogels
($1,622,347 in total costs; DJM is PI) Sponsor: NIH/NIDCR

7/14-5/19 Polymeric matrices with defined cell adhesion and mechanical properties
($2,350,405 in total costs; DJM is PI) Sponsor: NIH/NIDCR

9/14-8/18 Hydrogels to Promote Tendon Healing
($674,032 in total costs; DJM is PI) Sponsor: Novartis Pharmaceutical

11/14-10/20 Material Research Science and Engineering Center (MRSEC)
($504,954 in total costs; DJM is Co-PI) Sponsor: NSF

11/14-06/18 Infection Mimicking Biomaterials for Vaccination Against Gonadotropin releasing hormone (GnRH).
($731,566 in total costs; DJM is PI) Sponsor: Found Animals Foundation

12/15-11/20 Role of Macrophages in Impaired Wound Healing in Diabetes
($2,432,818 in total costs; DJM is Co PI) Sponsor: Beth Israel Deaconess Medical Center; Prime Sponsor: NIH/NINHR.

9/16-9/19 A New Platform for Burn Treatment and for Delayed Evacuation of Service Members
($274,615 in total costs; DJM is Co-PI) Sponsor: The Metis Foundation; Prime Sponsor DOD.

9/16-9/18 Extremity regeneration of soft tissue lijury using growth factor impregnated gels.
($248,364 in total costs; DJM Co-PI) Sponsor: Brigham and Women's Hospital, Inc.; Prime Sponsor DOD.

2/17-1/22 Mechanisms of Prosthetic Arterial Graft Failure.
($986,330 in total costs; DJM is Co-PI) Sponsor: Beth Israel Deaconess Medical Center; Prime Sponsor: NIH

3/17-2/20 Michigan-Pittsburgh-Wyss Resource Center: Supporting regenerative medicine in Dental Oral and Craniofacial Technologies.
($313,065 in total costs: DJM is Co-PI) Sponsor: University of Michigan, Prime Sponsor: NIH

4/17-3/22 3D Models of Immunotherapy
(2,498,750 in total costs; DJM is Co-PI) Sponsor NIH/NCI

8/17-8/18 A desktop super-resolution microscope for structural analysis of complex DNA nanostructures.
($150,000 in total costs; DJM is Co-PI) Sponsor Office of Naval Research

9/17-6/20	MSC Encapsulation with Thin Gel Coating ($2,014,692 in total costs; DJM is Co-PI) Sponsor NIH/NIBIB
12/17-11/22	Biomaterial Cancer Vaccines that generate patient-specific antigen in situ ($2,077, 973 in total costs; DJM is PI) Sponsor NIH/NCI
12/17-12/18	Preclinical Research Program Agreement ($155,000 in total costs; DJM is PI) Sponsor Amgen Inc.
12/17-11/18	ITP with Michigan-Pittsburgh-Wyss Regenerative Medicine Resource Center ($79,575 in total costs; DJM is Co-PI) Sponsor NIH
12/17-12/18	Prolonged Field Care with Platform Wound Device ($175,000 in total costs; DJM is Co-PI) Sponsor: Applied Tissue LLC. Prime Sponsor: DOD
3/18-3/20	Material Engineered Scaffold Vaccines ($1,500.000 in total costs; DJM is Co-PI) Sponsor Novartis Institutes for Biomedical Research Inc.

X. AWARDED PATENTS*

1. U.S. Patent #: 5,716,404 February 10, 1998
   Breast tissue engineering
   Inventors: J.P. Vacanti, A. Atala, D.J. Mooney, R.S. Langer.
2. U.S. Patent #: 5,885,829 March 23, 1999
   Engineering oral tissues
   Inventors: D.J. Mooney, R.B. Rutherford
3. U.S. Patent #: 6,281,015 August 28, 2001
   Localized delivery of factors enhancing survival of transplanted cells.
   Inventors: D.J. Mooney, R.S. Langer, J.P. Vacanti.
4. U.S. Patent #: 6,281,256 August 28, 2001
   Open pore biodegradable matrices
   Inventors:L. Harris, D.J. Mooney, L. Shea
5. U.S. Patent #: 6,511,650 January 28, 2003
   Preparing porous hydrogel products
   Inventors: P. Eiselt, C. Halberstadt, D. Mooney, J. Yeh, R. Latvala, J.A. Rowley
6. U.S. Patent #: 6,541,022 April 1, 2003
   Mineral and cellular patterning on biomaterial surfaces
   Inventors: W.L. Murphy, D.J. Mooney, D.H. Kohn, G.C. Spalding, M.T. Dearing
7. U.S. Patent #: 6,642,363 November 4, 2003
   Polymers containing polysaccharides such as alginates or modified alginates
   Inventor: D.J. Mooney, K.H. Bouhadir, H. Kamal, W.K. Wong, J.A. Rowley
8. U.S. Patent #: 6,743,626 June 1, 2004
   Artificial salivary gland
   Inventors: B. J. Baum, K. M. Yamada, E. Cukierman, D. Mooney
9. U.S. Patent #: 6,748,954 June 15, 2004
   Drug release from polymer matrices through mechanical stimulation
10. U.S. Patent #: 6,767,928 July 27, 2004
    Mineralization and biological modification of biomaterial surfaces
    Inventors: W.L. Murphy, M.C. Martin, D.J. Mooney, D.H. Kohn
11. U.S. Patent #: 6,773,713 August 10, 2004
    Injection molding of living tissues
    Inventors: L.J. Bonassar, J.A. Rowley, D.J. Mooney
12. U.S. Patent #: 6,790,840 September 14, 2004
    Reversibly cross-linked hydrogels
    Inventors: K.Y. Lee, D.J. Mooney
13. U.S. Patent #: 6,797,738 September 28, 2004
    Open pore biodegradable matrices
    Inventors: L. Harris, D.J. Mooney, L. Shea

14. U.S. Patent #: 7,186,413 March 6, 2007
Hydrogels and water soluble polymeric carriers for drug delivery
Inventors: K.H. Bouhadir, G.M. Kruger, D.J. Mooney
15. U.S. Patent #: 7,427,602 September 23, 2008
Sustained DNA delivery from structural matrices
Inventors: L. Shea, J. Bonadio, D.J. Mooney, M.C. Peters
16. U.S. Patent #: 7,575,759 August 18, 2009
Tissue engineering scaffolds
Inventors: W.L. Murphy, R.G. Dennis, D.J. Mooney
17. U.S. Patent #: 8,067,237 November 29, 2011
Scaffolds for cell transplantation
Inventors: D.J. Mooney, O.A. Ali, E.A. Silva, H.J. Kong, E.E. Hill Jr., T. Boonthekul
18. U.S. Patent #: 8,728,456 May 20, 2014
Programming of cells for tolerogenic therapies
Inventors: R.W. Sands, E.A. Silva, T. Kawai, D.J. Mooney
19. U.S. Patent #: 8,932,583 January 13, 2015
Scaffolds for cell transplantation
Inventors: D.J. Mooney, O.A. Ali, E.A. Silva, H.J. Kong, E.E. Hill Jr., T. Boonthekul
20. U.S. Patent #: 9,012,399 April 21, 2015
Controlled Release of growth factors and signaling molecules for promoting angiogenesis
Inventors: L. Cao, D.J. Mooney
21. U.S. Patent #: 9,072,813 July 7, 2015
Mineralization and biological modification of biomaterial surfaces
Inventors: W. L. Murphy, M.C. Peters, D.J. Mooney, D.H. Kohn
22. U.S. Patent #: 9,089,512 July 28, 2015
Active Scaffolds for on-demand drug and cell delivery
Inventors: D.J. Mooney, X.Zhao
23. U.S. Patent #: 9,132,210 September 15, 2015
Scaffolds for cell transplantation
Inventors: D.J. Mooney, O.A. Ali, E.A. Silva, H.J. Kong, E.E. Hill Jr., T. Boonthekul
24. U.S. Patent #: 9,297,005 March 29, 2016
Harnessing Cell Dynamics to Engineer Materials
Inventors: N.D. Huebsch, D.J. Mooney
25. U.S. Patent #: 9,370,558 June 21, 2016
Controlled Delivery of TLR agonists in structural polymeric devices
Inventors: O.A. Ali, G. Dranoff, D.J. Mooney
26. U.S. Patent #: 9,381,235 July 05, 2016
Programming of cells for tolerogenic therapies
Inventors: R.W. Sands, E.A. Silva, T. Kawai, D.J. Mooney
27. U.S. Patent #: 9,387,276 July 12, 2016
Interpenetrating Networks With Covalent and Ionic Crosslinks
Inventors: W. Illeperuma, J. Li, D.J. Mooney, K.H. Oh, JY. Sun, Z. Suo, J.J. Vlassak
28. U.S. Patent #: 9,446,107 September 20, 2016
Scaffold for Cell Transplantation
Inventors: David J. Mooney, Omar Abdel-Rahman Ali, Eduardo Alexandre Barros E Silva, Hyun Joon Kong, Elliot Earl Hill, Jr., Tanyarut Boontheekul
29. U.S. Patent #: 9,480,773 November 1, 2016
Mineralization and biological modification of biomaterial surfaces

Inventors: William Murphy, Martin C. Peters, David J. Mooney

30. U.S. Patent #: 9,486,512 November 20, 2016
In Situ Antigen-generating cancer vaccine
Inventors: Jaenyun Kim, David J. Mooney, Weiwei Aileen Li, Praveen Arany, Or Gadish
31. U.S. Patent #: 9,603,894 March 28, 2017
InvenMaterials presenting notch signaling molecules to control cell behavior
Inventors: Lan Cao, Kamal H. Bouhadir, David J. Mooney
32. U.S. Patent #: 9, 610,328 April 4, 2017
Enhancement of skeletal muscle stem cell engraftment by dual delivery of VEGF and IGF-1
Inventors: David J. Mooney, Cristina Borselli, Herman Vandenburgh, Dimitry
33. U.S. Patent #: 9,675,561 June 12, 2017
Injectable cryogel vaccine devices and methods of use therof
Inventors: Sidi A. Bencherif, Roger Warren Sands, Sandeep T. Koshy, Davd J.Mooney Shvartsman, Hannah Storrie, Jeff Lichtman
34. U.S. Patent #: 9,693,954 July 4, 2017
Co-delivery of stimulatory and inhibitory factors to create temporally stable and spatially restricted zones
Inventors: David J. Mooney, William W. Yuen, Praveen Arany
35. U.S. Patent #: 9,708,455 July 18, 2017
Porous electrolytic polymer cryogls for enhanced electrical collapsibility
Inventors: Stephen Michael Kennedy, Sidi Ahmed Bencherif, David J. Mooney
36. U.S. Patent #: 9,770,535 September 26, 2017
Scaffolds for cell collection or elimination
Inventors: David J. Mooney, Omar abdel-Rahman Ali
37. U.S. Patent #: 9,821,045 November 21, 2017
Controlled Delivery of TLR agonists in structural polymeric devices
Inventors: Omar abdel-Rahman Ali, Glenn Dranoff, David J. Mooney

*Twelve companies have taken licenses to technologies developed in Mooney laboratory. A number of these patents have also issued in several other countries.

XI. Abstracts and/or Presentations

- Aiken, J., Cima, L., Schloo, B., Mooney, D., Johnson, L., Langer, R., and Vacanti, J.P. Studies in the optimization of rat liver perfusion for cell harvest and implantation. 9th Annual Pediatric Surgical Residents' Conference, Boston, MA (November, 1988).
- Johnson, L., Cima, L., Aiken, J., Mooney, D., Schloo, B., Langer, R., and Vacanti, J.P. Autologous and syngeneic transplantation of hepatic tissue sections. 9th Annual Pediatric Surgical Residents' Conference, Boston, MA (November, 1988).
- Aiken, J., Cima., L., Schloo, B., Mooney, D., Johnson, L., Langer, R.nd Vacanti, J.P. Studies in liver perfusion for cell harvest and implantation. Annual Meeting of the American Pediatric Surgical Association, Baltimore, MD (May, 1989).
- Johnson, L., Cima, L., Aiken, J., Mooney, D., Schloo, B., Langer, R., and Vacanti, J.P. Autologous and syngeneic transplantation of thin hepatic tissue sections. Amer. Soc. Transp. Sur. (1989).
- Cima, L.G., Mooney, D., Vacanti, J.P., and Langer, R. Three-dimensional culture of primary mammalian cells in porous, biodegradable polymer matrices for in vivo organ regeneration. American Institute of Chemical Engineers (AIChE) (November, 1989).
- Johnson, L.B., Aiken, J., Mooney, D., Schloo, B., Cima, L., and Vacanti, J.P. the mesentery as a laminated vascular bed for hepatocyte transplantation on polymeric

matrices. 32nd Annual University Surgical Residents Conference, Boston, MA (February, 1990).

- Johnson, L.B., Aiken, J., Mooney, D., Schloo, B., Cima, L., and Vacanti, J.P. The mesentery as a laminated bed for hepatocyte transplantation on polymeric matrices. Annual Meeting of the American Pediatric Surgical Association (May, 1990).
- Hansen, L.K., Mooney, D.J., Farmer, S.R., Langer, R., Vacanti, J.P., and Ingber, D.E. Regulation of growth and differentiation-specific gene expression in rat hepatocytes by extracellular matrix. FASEB (July, 1990).
- Mooney, D., Langer, R., Vacanti, J.P., and Ingber, D.E. Control of hepatocyte function through variation of attachment site density. Annual AIChE Meeting, Chicago, IL (November, 1990).
- Mooney, D., Hansen, L.K., Langer, R., Vacanti, J.P., Farmer, S.R., and Ingber, D.E. Switching between growth and differentiation in hepatocytes: Control by extracellular matrix. Annual Meeting of the American Society of Cell Biologists (ASCB), San Diego, CA (December, 1990).
- Mooney, D.J., Langer, R., and Ingber, D.E. Control of tubulin polymerization by the extracellular matrix. AIChE Annual Meeting, Los Angeles, CA (November, 1991).
- Mooney, D.J., Langer, R., Vacanti, J.P., and Ingber, D.E. Induction of hepatocyte differentiation by the extracellular matrix and an RGD-containing synthetic peptide. Materials Research Society Meeting, Boston, MA (December, 1991).
- Hansen, L.K., Mooney, D.J., and Ingber, D.E. Early signaling events by the extracellular matrix. Annual ASCB Meeting, Boston, MA (December, 1991).
- Mooney, D.J., Langer, R., and Ingber, D.E. Intracellular tubulin monomer levels are controlled by varying cell-extracellular matrix contacts. Annual ASCB Meeting, Boston, MA (December, 1991).
- Johnson, L.B., Aiken, J., Mooney, D., Schloo, B., Langer, R., and Vacanti, J.P. The mesentery as a laminated vascular bed for hepatocyte transplantation. American Society of Transplant Surgeons, New Orleans, LA (April, 1992).
- Organ, G.M., Mooney, D.J., Hansen, L.K., and Vacanti, J.P. Enterocyte isolation and in vitro assembly of enterocyte-polymer devices for implantation as neointestinal replacement. American Pediatric Surgical Association Annual Meeting (October, 1992).
- Mooney, D.J., Langer, R., and Ingber, D.E. Intra- and extra-cellular determinants of cell spreading. Annual AIChE Meeting, Miami, FL (November, 1992).
- Organ, G.M., Mooney, D.J., Hansen, L.K., Schloo, B., and Vacanti, J.P. Transplantation of enterocytes utilizing polymer-cell constructs to produce neointestine. 1st International Congress of the Cell Transplant Society, Paris, France (1992).
- Mooney, D.J., Langer, R., Vacanti, J.P., and Ingber, D.E. Coordinate alterations in cytoskeletal dynamics and cell spreading kinetics following hepatocyte adhesion to laminin coated dishes. ASCB Annual Meeting, Denver, CO (November, 1992).
- Vacanti, C.A., Kim, W., Mooney, D., Schloo, B., and Vacanti, J.P. Tissue engineered growth of organized bone containing marrow, utilizing synthetic polymer templates. 39th Annual Meeting of Orthopedic Research Society, San Francisco, CA (February, 1993).
- Kim, W.S., Vacanti, C.A., Puelacher, W., Cima, L.G., Upton, J., Mooney, D., and Vacanti, J.P. Cartilage configured in pre-determined geometric shapes employing cell transplantation on prosthetic artificial biodegradable synthetic polymers. Plastic Surgery Research Council Annual Meeting, Houston, TX (April, 1993).
- Kim, W.S., Vacanti, J.P., Upton, J., Mooney, D., Schloo, B., and Vacanti, C.A. Potential of cold-preserved chondrocytes for cartilage reconstruction. Plastic Surgery Research Council Annual Meeting, Houston, TX (April, 1993).
- Organ, G.M., Mooney, D.J., Hansen, L.K., Schloo, B., and Vacanti, J.P. Design and transplantation of enterocyte-polymer constructs: a small animal model for neointestinal replacement in short bowel syndrome. American College of Surgeons' Surgical Forum, San Francisco, CA (November, 1993).
- Kim, W.S., Vacanti, J.P., Upton, J., Mooney, D., Schloo, B., and Vacanti, C.A. Tissue engineered bone on a vascular pedicle using cell-polymer devices. Plastic Surgery Research Council Annual Meeting, Houston, TX (April, 1993).

- Mooney, D.J., Organ, G., Vacanti, J.P., and Langer, R. Design and fabrication of cell delivery devices from biodegradable polymers. 1st International Conference on Cellular Engineering, Keele, UK (September, 1993).
- Puelacher, W.C., Mooney, D., Langer, R., Vacanti, J.P., and Vacanti, C.A. Design of nasoseptal cartilage replacement synthesized from biodegradable polymers and chondrocytes. Biointeractions 1993 Meeting, Noordwijkerhout, The Netherlands (September, 1993).
- Mooney, D.J., Organ, G., Vacanti, J.P., and Langer, R. Design and fabrication of cell delivery devices to engineer neointestine. Annual AIChE Meeting, St. Louis, MO (November, 1993).
- Mooney, D.J., Zhaka, C., Organ, G., Puelacher, W., Vacanti, J.P., and Langer, R. Stabilization of fiber-based cell delivery devices by physically bonding adjacent fibers. Materials Research Society, Boston, MA (December, 1993).
- Kaufmann, P.M., Uyama, S., Mooney, D., and Vacanti, J.P. The impact of hepatotrophic stimulation on hepatocytes transplanted into PVA scaffolds. Materials Research Society, Boston, MA (December, 1993).
- Mooney, D.J., McNamara, K., Organ, G., Kaufmann, P., Vacanti, J.P., and Langer, R. Design and fabrication of cell delivery vehicles to engineer new tissues. 28th Annual Regional Meeting of the American Society for Microbiology, Boston, MA (November, 1993).
- Mooney, D.J. Design and fabrication of cell delivery devices to engineer new tissues. Gordon Conference-Polymers in Biosystems, Oxnard, CA (February, 1994).
- Hansen, L.K., Mooney, D.J., Vacanti, J.P., Ingber, D.E. Regulation of cell cycle progression in hepatocytes by extracellular matrix density and cell spreading. Keystone conference on Tissue Engineering, Taos, NM (February, 1994).
- Mooney, D.J., Kaufmann, P.M., Sano, K., McNamara, K., Vacanti, J.P., and Langer, R. Engineering tissues using cell transplantation on synthetic, biodegradable polymer devices. 2nd World Congress on Biomechanics, Amsterdam, The Netherlands (July, 1994).
- Mooney, D.J., Organ, G., Breuer, C., Vacanti, J.P., and Langer, R. Engineering neointestine using enterocyte transplantation. Biomedical Engineering Society Annual Meeting, Tempe, AZ (October, 1994).
- Mooney, D.J., Kaufmann, P.M., Sano, K., McNamara, K., Vacanti, J.P., and Langer, R. Transplanting hepatocytes on erodible polymeric devices. Annual AIChE Meeting, San Francisco, CA (November, 1994).
- Breuer, C., Mooney, D., Davis, M. Koski, J, Shinoka, T., Mayer, J, and Vacanti, J.P. Tissue engineering heart valves. American Chemical Society Meeting, Anaheim, CA (April, 1995).
- Mooney, D.J., Sano, K., Kaufmann, P.M., McNamara, K., Vacanti, J.P., and Langer, R. Integrating cell transplantation and controlled drug delivery technologies to engineer liver tissue. Materials Research Society, San Francisco, CA (April, 1995).
- Mooney, D.J. Regulation of hepatocyte function by cell shape and soluble signals. Gordon Conference-Biocompatibility, Nashua, NH (July, 1995).
- Mooney, D.J. Design of matrices to deliver cells and growth factors. ICB Conference: Strategies for soft and hard tissue engineering and repair. Washington, DC (August, 1995).
- Sano, K., Cusick, R.A., Lee, H., Pollok, J.M., Kaufmann, P.M., Uyama, S., Mooney, D., Langer, R., and Vacanti, J.P. Regenerative signals for heterotopic hepatocyte transplantation. Asian Transplant Society, Seoul, Korea (September, 1995).
- Cusick, R.A., Sano, K., Lee, H.M., Pollok, J.M., Mooney, D., Langer, R, and. Vacanti, J.P. Heterotopic fetal hepatocyte transplantation. American College of Surgeons Surgical Forum, New Orleans, LA (October, 1995).
- Mooney, D.J., Rowley, J., Vacanti, J.P., and Langer, R. Biomedical Engineering Society Annual Meeting, Boston, MA (October, 1995).
- Kaufmann, P.M., Mooney, D., Sano, K., McNamara, K., Vacanti, J.P., and Langer R. Hepatocyte transplantation utilizing biodegradable matrices: evaluation of the role of

the device porosity. European Soc. for Organ Transplant, Vienna, Austria (October, 1995).

- Mooney, D.J., Hansen, L.K., Langer, R., Vacanti, J.P., and Ingber, D.E. Extracellular matrix regulates tubulin assembly and gene expression. Annual AIChE Meeting, Miami, FL (November, 1995).
- Breuer, C.K., Shinoka, T., Mooney, D., Ma, P.X., Chaignaud, B.E., Zund, G., Langer, R., Mayer, J.E., and Vacanti, J.P. The use of biodegradable synthetic matrices for tissue
- Engineering heart valve leaflets. Annual AIChE Meeting, Miami, FL (November, 1995).
- Cusick, R.A., Sano, K., Lee, H.M., Pollok, J.M., Mooney, D., Langer, R., and Vacanti, J.P. Heterotopic fetal rat hepatocyte transplantation. 19th Annual Ped. Surg. Res. Conf. Oklahoma City, OK (November, 1995).
- Vacanti, J.P., Mooney, D., Ma, P., and Langer, R. Tissue engineering and controlled release. 3rd US-Japan Symposium on Drug Delivery, Maui, HI (December, 1995).
- Holder, W.D., Gruber, H., Moore, A.L., Culberson, C.C., and Mooney, D.J. Cellular ingrowth into poly (L-lactic acid) and poly (glycolic acid) matrices in the rat. 1996 Keystone Meeting on Tissue Engineering, Taos, NM (January, 1996).
- Mooney, D.J. Tissue engineering with biodegradable polymer matrices. 15th Southern Biomedical Conference, Dayton, OH (March, 1996).
- Kim, B.-S., Upton, T.H., Vacanti, J., Mooney, D., Cao, Y.L., Ibarra, C., Langer, R., and Vacanti, C. Tissue engineered bone and cartilage composite tissue-The first step towards fabricating a joint structure. 53rd Annual Mtg. Amer. Cleft Palate-Craniofacial Association, San Diego, CA (April, 1996).
- Montgomery, S., Linderman, J.J., Mooney, D., Fogler, H. S., Wang, H.Y., and Burns, M.A. Engineering fundamentals in biological systems. 1996 ASEE Annual Conference and Exposition, Washington, DC (June, 1996).
- Montgomery, S., Linderman, J.J., Mooney, D., Fogler, H. S., Wang, H.Y., and Burns, M.A. Incorporating bioengineering examples into the core ChE curriculum. 1996 ASEE Annual Conference and Exposition, Washington, DC (June, 1996).
- Mooney, D.J., Kaufmann, K.M., Vacanti, J.P., and Langer, R. Engineering liver tissue with hepatocyte transplantation. World Congress of Chemical Engineering, San Diego, CA (July, 1996).
- Peters, M., Kim, B.-S., and Putnam, A. Engineering smooth muscle tissue in vitro. 1st Intl. Organogenesis Symposium, Ann Arbor, MI (October, 1996).
- Rutherford, R., Powell, C., Piana, J., Bohl, K., and Mooney D.J. Engineering dental pulp tissue. 1st Intl. Organogenesis Symposium, Ann Arbor, MI (October, 1996).
- Kaufmann, P.M., Heimrath, S., Kim, B.-S., and Mooney, D.J. Highly porous polymer matrices as a three-dimensional culture system for hepatocytes: initial results. Cell Transplant Society Third International Congress, Miami, FL (October, 1996).
- Kim, B.-S., Putnam, A., and Mooney, D.J. Engineering smooth muscle tissue. Biomedical Engineering Society Annual Meeting, State Park, PA (October, 1996).
- Mooney, D.J., Putnam, A., and Ingber, D.E. Cytoskeletal filament assembly and cell spreading. Biomedical Engineering Society Annual Meeting, State Park, PA (October, 1996).
- Kim, B.-S. and Mooney, D.J. Engineering smooth muscle tissue using cells and synthetic scaffolds. American Institute of Chemical Engineering Annual Meeting, Chicago, IL (November, 1996).
- Holder, W.D., Gruber, H.E., Roland, W.E,. Moore, A.L., Culberson, C.R., Loebsack, A.B., Burg, K.L, and Mooney, D.J. Unique vascular structures occurring in polyglycolide matrices containing aortic endothelial cells implanted in the rat. Tissue Engineering Society Inaugural Meeting, Orlando, FL (December, 1996).
- Bohl, K., Kim, B.-S., Rutherford, B., and Mooney, D.J. Engineering dental tissues. Tissue Engineering Society Inaugural Meeting, Orlando, FL (December, 1996).
- Holder, W.D., Gruber, H., Roland, W., Moore, A., Culberson, C., Loebsack, A., Burg, K., Black, M., Bohl, K., and Mooney, D. Static and dynamic loading of poly (l-lactide) and poly (glycolide) matrices implanted in the rat. Workshop on Biomaterials and Tissue Engineering. Hilton Head, SC (February, 1997).

- Kim, B., Kaufmann, P.K., and Mooney, D.J. In vitro development of engineered tissues: control by synthetic extracellular matrices. Workshop on Biomaterials and Tissue Engineering. Hilton Head, SC (February, 1997).
- Montgomery, S., Linderman, J.J., Mooney, D., Fogler, H.S., Wang, H.Y., and Burns, M.A. Engineering fundamentals in biological systems. NSF Project Showcase Demonstration, 1997 ASEE Annual Conference and Exposition, Milwaukee, WI (June, 1997).
- Montgomery, S., Linderman, J.J., Mooney, D., Fogler, H.S., Wang, H.Y., and Burns, M.A. Engineering fundamentals in biological systems. 1997 AIChE Annual Meeting, Los Angeles, CA (November, 1997).
- Bohl, K., Kim, B.-S., Yue, I., Shon, J., Rutherford, R., and Mooney, D.J. Synthetic extracellular matrices for engineering dental pulp. Society for Biomaterials Annual Meeting, New Orleans, LA (May, 1997).
- Kim, B.-S. and Mooney D.J. Stabilized polymer matrices for engineering smooth muscle tissue. Society for Biomaterials Annual Meeting, New Orleans, LA (May, 1997).
- Rowley, J., Yue, I., Bouhadir, K., and Mooney D. Covalently modified alginates. American Chemical Society National Meeting, San Francisco, CA (April, 1997).
- Burg, K., Mooney, D., Halberstadt, C., Culberson, C., and Moore, A. Parameters affecting cellular adhesion to polyglycolide and polylactide porous constructs. American Chemical Society National Meeting, San Francisco, CA (April, 1997).
- Choi, R.S., Mooney, D.J., and Vacanti, J.P. Expression of bush border enzymes and formation of basement membrane from transplanted intestinal epithelial organoid units using biodegradable tubular scaffolds. American Pediatric Surgical Association Annual Meeting, Naples, FL (May, 1997).
- Harris, L., Kim, S., and Mooney, D. Open pore matrices fabricated with gas foaming. 1997 Summer Bioengineering Conference, Sun River, OR (June, 1997).
- Yue, I., Rowley, J., Bouhadir, K., and Mooney, D. Covalently modified alginates. 1997 Summer Bioengineering Conference, Sun River, OR (June, 1997).
- Choi, R.S., Riegler, M., Pothoulakis, C., Kim, B.-S., Mooney, D.J., and Vacanti, J.P. Preliminary electrophysiologic studies of tissue engineered neointestine derived from isolated intestinal epithelial organoid units seeded onto collagen coated biodegradable synthetic scaffolds. Annual Meeting of Surgery of the American Academy of Pediatrics, New Orleans, LA (October 1997).
- Rowley, J., Bouhadir, K., Madlambayan, G., Yue, I., Faulkner, J., and Mooney D.J. Covalent modifications of alginate. AIChE National Meeting, Los Angeles, CA (November, 1997).
- Brown, A.N., Kim, B.-S., and Mooney. D.J. Hybrid tissues for soft tissue engineering. AIChE Annual Meeting, Los Angeles, CA (November, 1997).
- Harris, L., Kim, B.-S., and Mooney, D.J. Open pore biodegradable matrices formed with gas foaming. AIChE National Meeting, Los Angeles, CA (November, 1997).
- Kim, B.-S. and Mooney, D.J. Design of synthetic extracellular matrices for engineering smooth muscle tissue replacements. AIChE National Meeting, Los Angeles, CA (November, 1997).
- Cunningham, J., Putnam, A., and Mooney, D.J. Mechanical strain controls microtubule assembly in smooth muscle cells. American Society of Cell Biology National Meeting, Washington, DC (December, 1997).
- Bouhadir, K.H., Yue, I., Hausman, D., and Mooney, D.J. Cross-linked limit-oxidized alginate for tissue engineering applications. American Association for Dental Research, Minneapolis, MN (March, 1998).
- Haar, M., Shea, L, Harris, L., and Mooney, D.J. Fabrication of bioabsorbable scaffolds for guided tissue regeneration. American Association for Dental Research, Minneapolis, MN (March, 1998).
- Shea, L.D., Bouhadir, K., and Mooney, D.J. Alginate inspired hydrogels. Keystone Symposia on Tissue Engineering, Copper Mountain, CO (January, 1998).
- Peters, M.C., Isenberg, B., and Mooney D.J. Growth factor delivery from alginate. Keystone Symposia for Molecular and Cell Biology -Angiogenesis (March, 1998).

- Kim, B.-S. and Mooney, D.J. The scaffold material regulates the phenotype of engineered smooth muscle. Society for Biomaterials Annual Meeting, San Diego, CA (April, 1998).
- Kim, S.S., Kaihara, S., Benvenuto, M., Kim, B.-S., Mooney, D.J., and Vacanti, J.P. Small intestinal submucosa as a small-caliber venous graft. 29th Annual Meeting of the American Pediatric Surgical Association, Hilton Head, SC (May, 1998).
- Kim, S.S., Kaihara, S., Benvenuto, M., Choi, R., Kim, B.-S., Mooney, D.J., Taylor, G., and Vacanti, J.P. Regenerative signals for intestinal epithelial organoid units transplanted on synthetic biodegradable polymer scaffolds for the tissue engineering of small intestine. 24th Annual Meeting of the American Society for Transplant Surgeons, Chicago, IL (May, 1998).
- Kaihara, S., Kim, S.S., Benvenuto, M., Choi, R., Kim, B.-S., Mooney, D.J., and Vacanti, J.P. Successful anastomosis between tissue-engineered intestine and native small bowel. 24th Annual Meeting of the American Society for Transplant Surgeons, Chicago, IL (May, 1998).
- Nikolovski, J., Kim, B.-S., and Mooney, D.J. Cellular gene expression in engineered smooth muscle tissue is controlled by the synthetic extracellular matrix. 2nd Intl. Symposium on Organogenesis, Ann Arbor, MI (May, 1998).
- Brown, A.N., Kim, B.-S., and Mooney, D.J. Hybrid tissues for soft tissue engineering. Student Poster Session, National Organization of Black Chemists and Chemical Engineers- NOBCChE (April, 1998).
- Eiselt, P., Rowley, J.A., and Mooney, D.J. PEG crosslinked alginate hydrogels with controlled mechanical properties. Materials Research Society Spring Meeting, Boston, MA (April, 1998).
- Rowley, J.A., Madlambayan, G.J., Petrovski, D., and Mooney, D.J. Controlling the physical and biological properties of alginates via covalent modifications. Society for Biomaterials Annual Meeting, San Diego, CA (April, 1998).
- Rowley, J.A. and Mooney, D.J. Controlling myoblast phenotype with chemistry and mechanics. American Society for Cell Biology 38th Annual Meeting, San Francisco, CA (June, 1998).
- Kim, S.S., Kaihara, S., Benvenuto, M., Choi, R., Kim, B.-S., Mooney, D.J., Taylor, G.T., and Vacanti, J.P. Regenerative signals for tissue-engineered small intestine. Transplantation Society XVIII World Congress, Montreal, PQ (July, 1998).
- Kaihara, S., Kim, S.S., Benvenuto, M., Choi, R., Kim, B.-S., Mooney, D.J., and Vacanti, J.P. Successful anastomosis between tissue-engineered intestine and native small bowel. Transplantation Society XVIII World Congress, Montreal, PQ (July, 1998).
- Kim, S.S., Kaihara, S., Benvenuto, M., Choi, R., Kim, B.-S., Mooney, D.J., and Vacanti, J.P. Morphogenesis and differentiation of tissue-engineered small intestine after anastomosis to the native small bowel. Surgical Forum of the American College of Surgeons, Orlando, FL (October, 1998).
- Putnam, A.J., Cunningham, J.J., and Mooney, D.J. Microtubule assembly is regulated by external strain. Biomedical Engineering Society Annual Meeting, Cleveland, OH (October 1998).
- Nikolovski, J., Kim, B.-S., and Mooney, D.J. Controlling cellular gene expression in engineered smooth muscle tissue. Biomedical Engineering Society Annual Meeting, Cleveland, OH (October, 1998).
- Rowley, J.A. and Mooney, D.J. Controlling myoblast interactions with alginate. Biomedical Engineering Society Annual Meeting, Cleveland, OH (October, 1998).
- Shea, L.D., Haar, M., Peters, M.C., and Mooney, D.J. Structural matrices capable of growth factor delivery. Biomedical Engineering Society, Cleveland OH (October, 1998).
- Kim, S.S., Kaihara, S., Benvenuto, M., Choi, R., Kim, B.-S., Mooney, D.J., and Vacanti, J.P. Effects of anastomosis of tissue-engineered neointestine to native small bowel. Association of Academic Surgery Annual Meeting, Seattle, WA (November, 1998).
- Kim, B.-S., Gilbert, R., and Mooney D.J. The role of mechanical stimuli in engineered smooth muscle tissue development. AIChE Annual Meeting, Miami, FL (November, 1998).

- Shea, L.D., Smiley, E., Bonadio, J., and Mooney, D.J. Sustained delivery of DNA from structural matrices as a method to enhance in vivo gene expression. Annual AIChE meeting, Miami, FL (November, 1998).
- Shea, L.D., Wong, D., Franceschi, R.T., and Mooney, D.J. Polymer matrices for guided tissue regeneration: suitability as a template for bone formation. Annual AIChE meeting, Miami, FL (November, 1998).
- Brown, A.N., Kim, B.-S., and Mooney, D.J. Soft tissue engineering using chondrocytes and smooth muscle cells. AIChE Annual Meeting, Miami, FL (November, 1998).
- Shea, L.D., Smiley, E., Bonadio, J., and Mooney, D.J. Sustained delivery of DNA from structural matrices to enhance tissue development. Tissue Engineering Society, Orlando, FL (December, 1998).
- Marler, J.J., Guha, A., Rowley, J.A., Bonassar, L., Upton, J., Mooney, D.J., and Vacanti, J.P. Soft tissue reconstruction with alginate gels. Bi-Annual Meeting of the Tissue Engineering Society, Orlando, FL (December, 1998).
- Kim, S.S., Sundback, C.A., Kaihara, S., Benvenuto, M., Kim, B.-S., Mooney, D.J., and Vacanti, J.P. Dynamic-seeding and in vitro culture of hepatocytes in a flow perfusion system. Bi-Annual Meeting of Tissue Engineering Society, Orlando, FL (December, 1998).
- Kaihara, S., Kim, S.S., Benvenuto, M., Kim, B.-S., Mooney, D.J., Tanaka, K., and Vacanti, J.P. End-to-end anastomosis between tissue-engineered intestine and native small bowel. Bi-Annual Meeting of Tissue Engineering Society, Orlando, FL (December 998).
- Kaihara, S., Kim, S.S., Benvenuto, M., Kim, B.-S., Mooney, D.J., Tanaka, K., and Vacanti, J.P. Survival and function of co-cultured hepatocytes with nonparenchymal cells or sinusoidal endothelial cells on biodegradable polymers under flow conditions. Bi-Annual Meeting of Tissue Engineering Society, Orlando, FL (December, 1998).
- Kim, B.-S. and Mooney, D.J. Cyclic mechanical strain regulates the structure and function of engineered smooth muscle tissue. Bi-Annual Meeting of Tissue Engineering Society, Orlando, FL (December, 1998).
- Kim, B.-S., Nikolovski, J., and Mooney, D.J. Cyclic mechanical strain regulates the structure and function of engineered smooth muscle tissue. Tissue Engineering Society, Orlando, FL (December, 1998).
- Rowley, J.A., Eiselt, P., and Mooney, D.J. Alginate matrices with controlled mechanics and cell adhesion. Bi-Annual Meeting of the Tissue Engineering Society, Orlando, FL (December, 1998).
- Rowley, J.A., Genes, N., Chang, S., Mooney, D.J., and Bonassar, L.J. Injection molding of alginate/chondrocyte constructs. Bi-Annual Meeting of the Tissue Engineering Society, Orlando, FL (December, 1998).
- Alsberg, E., Rowley, J.A., and Mooney, D.J. Alginate hydrogels for polymeric tissue regeneration matrices. Proceedings of the University of Michigan School of Dentistry Research Table Clinic Day, Ann Arbor, MI (February, 1999).
- Aframian, D.J., Cukierman, E., Nikolovski, J., Mooney, D.J., Yamada, K.M., and Baum, B.J. Gordon Conference on Salivary Glands and Saliva, Anaheim, CA (February, 1999).
- Nikolovski, J., Bonadio, J., and Mooney, D.J. Engineering smooth muscle on biodegradable polymers. Center for Organogenesis, Ann Arbor, MI (February, 1999).
- Shea, L.D., Smiley, E., Bonadio, J., and Mooney, D.J. Sustained plasmid DNA delivery from matrices for guided tissue regeneration. International Association for Dental Research, Vancouver, BC (March, 1999).
- Kruger, G.M. A novel alginate derived hydrogel for drug delivery. Seminar at Department of Bioengineering, Rice University, Houston, TX (March, 1999).
- Mooney, D.J., Shea, L.D., and Peters, M.C. Protein and plasmid DNA delivery from tissue engineering matrices. American Chemical Society, Anaheim CA (March, 1999).
- Nikolovski, J., Kim, B.-S., and Mooney, D.J. Controlling cellular gene expression in engineered smooth muscle tissue. Society of Women Engineers, University of Michigan, Ann Arbor, MI (March, 1999).

- Nikolovski, J., Kim, B.-S., Smiley, E., Bonadio, J., and Mooney, D.J. Controlling gene expression of smooth muscle cells in engineered tissues with synthetic extracellular matrices. Society for Biomaterials, Providence, RI (April, 1999).
- Aframian, D.J., Cukierman, E., Nikolovski, J., Mooney, D.J., Yamada, K.M., and Baum, B.J. The growth and organizational behavior of salivary epithelial cells on biodegradable substrata. Annual Meeting of the American Academy of Oral Medicine (April, 1999).
- Kim, B.-S. and Mooney, D.J. Cyclic mechanical strain regulates tissue development of engineered smooth muscle. Annual Meeting of Society for Biomaterials, Providence, RI (April, 1999).
- Peters, M.C., Shea, L.D., and Mooney, D.J. The development of VEGF releasing matrices for cell transplantation. Society for Biomaterials, Providence RI (April 28–May 2, 1999).
- Rowley, J.A. and Mooney, D.J. Alginate synthetic ECMs: Controlling myoblast function with chemistry and mechanics. Society for Biomaterials Annual Meeting, Providence, RI (April, 1999).
- Shea, L.D., Mooney, D.J. Sustained plasmid delivery to enhance in vivo transfection. CBOH Symposia on Gene Therapy. Ann Arbor, MI (May, 1999).
- Kaihara, S., Kim, S.S., Kim, B.-S., Mooney, D.J., Tanaka, K., and Vacanti, J.P. Long-term follow up of tissue engineered intestine after anastomosis to native small bowel. Annual Meeting of American Society of Transplant Surgeons, Chicago, IL (May, 1999).
- Kim, B.-S., Nikolovski, J., Bonadio, J., and Mooney, D.J. Engineering smooth muscle tissues: role of matrix chemistry and mechanical stimuli in tissue development. ASME Summer Bioengineering Conference, Big Sky, MT (June, 1999).
- Lee, K.Y., Bouhadir, K.H., and Mooney, D.J. Biodegradation of injectable hydrogels prepared from cross-linked poly(aldehyde guluronate). The 26th International Symposium on Controlled Release of Bioactive Materials, Boston, MA (June, 1999).
- Peters, M.C. and Mooney, D.J. VEGF delivery to promote vascularization for tissue engineering. The Whitaker Foundation, La Jolla, CA (August, 1999).
- Cunningham, J.J., Putnam, A.J., Linderman, J.J., and Mooney, D.J. Mechanical signals coordinately regulate focal contact composition, cytoskeletal assembly and gene expression in smooth muscle cells. Gordon Conference on Biological Structure and Gene Expression, Meriden, NH (August, 1999).
- Rowley, J.A. and Mooney, D.J. Alginate hydrogels for tissue engineering. Grand Rounds for the ENT Dept., University of Michigan Medical School, Ann Arbor, MI (September, 1999).
- Kim, B.-S. and Mooney, D.J. Engineering smooth muscle for reconstruction. Biomaterials and Tissue Engineering International Symposium, Taegu, Korea, (October, 1999).
- Lee, K.Y., Bouhadir, K.H., and Mooney, D.J. Biodegradation of covalently cross-linked hydrogels from alginate derivatives. The 23rd Annual Symposium on Macromolecular Science & Engineering, Ann Arbor, MI (October, 1999).
- Bouhadir, K.H., Kruger, G.M., Lee, K.Y., and Mooney, D.J. In vitro release of covalently linked daunomycin from injectable and biodegradable hydrogel. International Symposium on Control Release Bioactive Materials, Boston, MA (November, 1999).
- Lee, K.Y., Bouhadir, K.H., and Mooney, D.J. Biodegradable and injectable hydrogel prepared from cross-linked poly(aldehyde guluronate). International Symposium on Control Release Bioactive Materials, Boston, MA (November, 1999).
- Cunningham, J.J., Linderman, J.J., and Mooney, D.J. Mechanical strain alters focal contact composition in cultured smooth muscle cells. American Institute of Chemical Engineers, Dallas, TX (November, 1999).
- Peters, M.C. and Mooney, D.J. Growth factor delivery to promote the vascularization of tissue engineering matrices. American Institute of Chemical Engineers, Dallas, TX (November, 1999).
- Putnam, A.J. and Mooney, D.J. Mechanotransduction machinery: regulating cellular architecture via externally-applied strain. American Institute of Chemical Engineering Annual Meeting, Dallas, TX (November, 1999).

- Sy, G.A., Bouhadir, K.H., and Mooney, D.J. Controllable release of antineoplastic agents from biodegradable hydrogels. American Institute for Chemical Engineering Annual Meeting, Dallas, TX (November, 1999).
- Aframian, D.J., Cukierman, E., Nikolovski, J., Mooney, D.J., Yamada, K.M., and Baum, B.J. Cellular considerations in developing a first generation artificial salivary gland. VII International Symposium on Sjogren Syndrome (December, 1999).
- Bouhadir, K.H., Sy, G.A., and Mooney, D.J. Localized delivery of antineoplastic agents with injectable oxidized alginate hydrogels. 219th American Chemical Society National Meeting, San Francisco, CA (March, 2000).
- Eiselt, P., Lee, K.Y., and Mooney, D.J. Controlled mechanical properties of alginate hydrogels by cross-linking with poly(ethylene glycol)-diamines. The 219th National Meeting of American Chemical Society, San Francisco, CA (March, 2000).
- Lee, K.Y., Bouhadir, K.H., and Mooney, D.J. Decoupling the degradation behavior and mechanical properties of covalently cross-linked hydrogels. The 219th National Meeting of American Chemical Society, San Francisco, CA (March, 2000).
- Aframian, D.J., Cukierman, E., Nikolovski, J., Zheng, C., Goldsmith, C., Mooney, D.J., Yamada, K.M., and Baum, B.J. Use of a suicide gene in an allogeneic graft cell. International Association for Dental Research, Washington, DC (April, 2000).
- Aframian, D.J., Cukierman, E., Nikolovski, J., Mooney, D.J,. Yamada, K.M., and Baum, B.J. Polarization characteristics of a potential allogeneic graft cell for use in an artificial salivary gland. Sixth World Biomaterials Congress, Kamuela, HI (May, 2000).
- Burg, K., Austin, K., Mooney, D., Eiselt, P., Yeh, J., Rowley, J., Culberson, C., Greene, K., Wyatt, S., Loebsack, A., Holder, W., and Halberstadt, C. Optimizing microstructure of porous alginate-RGD beads for tissue engineering applications. Sixth World Biomaterials Congress, Kamuela, HI (May, 2000).
- Halberstadt, C., Mooney, D., Burg, K., Eiselt, P., Rowley, J.A., Beiler, R., Roland, W., Culberson, C., Greene, K., Wyatt, S., Loebsack, A., and Holder, W. The design and implementation of a novel alginate material for soft tissue engineering. Sixth World Biomaterials Congress, Kamuela, HI (May, 2000).
- Rowley, J.A., Chang, S.C.N., Genes, N.G., Roy, A.K., Mooney, D.J., Vacanti, C.A., and Bonassar, L.J. Injection molding of chondrocyte/alginate constructs in the shape of facial implants. Sixth World Biomaterials Congress, Kamuela, HI (May, 2000).
- Rowley, J.A. and Mooney, D.J. Injectable hydrogels for craniofacial tissue engineering. Sixth World Biomaterials Congress, Kamuela, HI (May, 2000).
- Putnam, A.J. and Mooney, D.J. Regulating cellular architecture via externally-applied strain. 3rd International Symposium on Molecular Control of Organogenesis, Ann Arbor, MI (May, 2000).
- Anderson, K.W., Alsberg, E., Rowley, J.R., and Mooney, D.M. Injectable polymers for cartilage tissue engineering. 24th Annual Frank A. Lamberson Lectureship, University of Michigan Department of Otolaryngology-Head and Neck Surgery, Ann Arbor, MI (2000).
- Murphy, W.L., Peters, M.C., Kohn, D.H., and Mooney, D.J. Sustained release of vascular endothelial growth factor from mineralized poly(lactide-co-glycolide) scaffolds for tissue engineering. World Congress on Medical Physics and Biomedical Engineering Meeting, Chicago, IL (July 23-28, 2000).
- Kaigler, D., Mooney, D.J., Krebsbach, P.H., and Polverini, P.J. Tissue Engineering-Science or Fiction? 87th Annual National Dental Association Convention, Washington DC (Aug. 3-8, 2000).
- Nikolovski, J. and Mooney, D.J. Controlling matrix synthesis and remodeling with strain in engineered smooth muscle tissues. Biomedical Engineering Society, Seattle, WA (October, 2000).
- Putnam, A.J. and Mooney, D.J. Equivalent control of microtubule assembly by strain and the extracellular matrix. Presented at the Biomedical Engineering Society Annual Meeting, Seattle, WA (October 2000).
- Cunningham, J.J., Linderman, J.J., and Mooney, D.J. Focal contact composition is altered by mechanical strain via the extracellular matrix. Biomedical Engineering Society, Seattle, WA (October, 2000).

- Kaigler, D., Mooney, D.J., Krebsbach, P.H., and Polverini, P.J. Tissue Engineering and Dentistry. Symposium: Exploring the Relationship Between Oral Health and Systemic Health Within the African American Population; sponsored by NIDCR, National Dental Association Foundation, and Colgate-Palmolive, Washington, DC (Dec. 8-9, 2000).
- Alsberg, E., Albeiruti, A., Anderson, K.W., and Mooney, D.J. Osteoblast and chondrocyte co-transplantation increases quantity of bone formation and recreates growth plate architecture. In: *Proceedings of the Fourth International Meeting of the Tissue Engineering Society International* (2001).
- Richardson, T.P., Peters, M.C., and Mooney, D.J. Sequential growth factor delivery directs the formation of mature blood vessels. Keystone Symposia, Keystone, CO (April, 2001).
- Richardson, T.P., Peters, M.C., and Mooney, D.J. Sequential growth factor delivery directs the formation of mature blood vessels. European Society for Engineering in Medicine, Belfast, Northern Ireland (May, 2001).
- Murphy, W.L and Mooney, D.J. Biomineralization via bioinspired variation in polymer surface chemistry. American Chemical Society National Conference, Chicago, IL (August, 2001).
- Simmons, C.A., and Mooney, D.J. Mechanical regulation of bone precursor cell function. BMES Annual Fall Meeting, Durham, NC (October, 2001).
- Smith, M.K., Peters, M.C., and Mooney, D.J. Localized angiogenic factor delivery increases engraftment of transplanted cells. Biomedical Engineering Society Meeting, Durham, NC (October, 2001).
- Nikolovski, J. and Mooney, D.J. Controlling matrix synthesis and remodeling of smooth muscle for tissue engineering. Biomedical Engineering Society, Durham, NC (October, 2001).
- Lee, K.Y. Peters, M.C., Anderson, K.W., and Mooney, D.J. Controlled growth factor delivery by mechanical stimulation. Materials Research Society Meeting, Boston, MA (November, 2001).
- Kong, H. and Mooney, D.J. Microstructural control in design of alginate hydrogels as extracellular matrix materials. Materials Research Society Fall Meeting, Boston, MA (November, 2001).
- Kaigler, D., Krebsbach, P.H., and Mooney, D.J. Bone marrow stromal cells and endothelial cells exhibit an instructional reciprocal relationship. International Association for Dental Research, San Diego, CA (March, 2002).
- Alsberg, E., Albeiruti, A., Anderson, K.W., and Mooney, D.J. Engineering growth plate-like structures *in vivo* with co-transplantation of osteoblasts and chondrocytes. In: *Proceedings of the International Association for Dental Research* (2002).
- Lee, K.Y., Alsberg, E., and Mooney, D.J. Degradable and injectable alginate-derived gels for bony tissue regeneration. 28th Annual Meeting of Society for Biomaterials, Tampa, FL (April, 2002).
- Kong, H., Alsberg, E., and Mooney, D.J. Controlling degradation of ionically cross-linked alginate hydrogels by adjusting intermolecular binding forces. Society for Biomaterials Annual Meeting, Tampa, FL (April, 2002).
- Grikscheit, T.C., Ochoa, E., Alsberg, E., Mooney, D., Gaissert, H., and Vacanti, J.P. Tissue engineered esophageal replacement in a rat model. In: *Proceedings of the Thirty-third Annul Meeting of the American Pediatric Surgical Association* (2002).
- Grikscheit, T.C., Ochoa, E., Alsberg, E., Mooney, D., and Vacanti, J. Experimental tissue engineered small intestine improves recovery after massive small bowel resection. In: *Proceedings of the Thirty-third Annul Meeting of the American Pediatric Surgical Association* (2002).
- Grikscheit, T.C., Ogilvie, J.B., Ochoa, E.R., Alsberg, E., Mooney, D.J., and Vacanti, J.P. Tissue engineered colon exhibits function *in vivo*. In: *Proceedings of the Sixty-Third Annual Meeting of the Society of University Surgeons* (2002)
- Nikolovski, J. and Mooney, D.J. Mechanical strain affects bone-specific gene expression in engineered smooth muscle tissues. Symposium on Tissue Engineering Science, Mykonos, Greece (May, 2002).

- Lee, K.Y. and Mooney, D.J. Controlled growth factor delivery for tissue engineering. *ACS Symposium Series*, in press, 2002.
- Kaigler, D., Krebsbach, P.H., Polverini, P.J., Mooney, D. Bone marrow stromal cells modulate angiogenesis. Gordon Research Conference on Signal Transduction by Engineered Extracellular Matrices, New London, CT (June, 2002).
- Kong, H.J., Mooney D.J. Constitutive control of rheological/mechanical/degradation properties of hydrogels in tissue engineering, Poster presentation at Gordon Conference, New London, CT (August, 2002).
- Nikolovski J., Simmons, C.A. Mooney, D.J. Regulation of bone-associated genes in smooth muscle with mechanical strain. Second Joint Meeting of the IEEE Engineering in Medicine and Biology Society and the Biomedical Engineering Society Annual Meeting, Houston, TX (October, 2002).
- Alsberg E, Kong H., Smith M., Mooney D.J. Controlled degradation of peptide modified hydrogels improves rate, quality and quantity of in vivo bone formation. Second Joint Meeting of the IEEE Engineering in Medicine and Biology Society and the Biomedical Engineering Society Annual Meeting, Houston, TX (October, 2002).
- Simmons CA, Nikolovski J, Mooney DJ. Calcification by vascular cells is regulated by mechanical strain and MAPK signaling. Second Joint EMBS-BMES Conference, Houston, TX, Oct. 23-26, 2002. (Poster)
- Murphy W.L., Simmons C., Mooney D.J. A combination approach to engineering bone regeneration: biomineral presentation and induced angiogenesis. Second Joint Meeting of the IEEE Engineering in Medicine and Biology Society and the Biomedical Engineering Society Annual Meeting, Houston, TX (October, 2002).
- Huang, Y.C., Rice, K.G., Mooney, D.J. Delivery of PEI-condensed DNA via a porous polymer scaffold for tissue engineering applications. Second Joint Meeting of the IEEE Engineering in Medicine and Biology Society and the Biomedical Engineering Society Annual Meeting, Houston, TX (October, 2002).
- Simmons CA, Murphy WL, Mooney DJ. Enhanced bone regeneration using a novel biomineralized tissue engineering scaffold that induces angiogenesis. 8th Conference of the International Society for Fracture Repair, Toronto, ON, Oct. 9-11, 2002. (Talk)
- Ennett, A.B., Richardson, T.P., Peters, M.C., Mooney, D.J. Time-appropriate delivery of multiple growth factors from polymer scaffolds to enhance neovascularization. American Institute of Chemical Engineers Annual meeting, Indianapolis, IN (November, 2002).
- Kong, H.J., Mooney D.J. Constitutive design of hydrogels in tissue engineering, American Institute of Chemical Engineers (AICHE) meeting, Indianapolis, IN (November, 2002).
- Kaigler, D., Krebsbach, P.H., Mooney, D.J. Endothelial cell modulation of bone marrow stromal cell osteogenic potential. American Association for Dental Research, San Antonio, TX (March, 2003).
- Kaigler, D., Krebsbach, P.H., Mooney, D. Reciprocal relationship of bone marrow stromal cells and endothelial cells. Keystone Symposium: From Stem Cells to Therapy, Steamboat Springs, CO (March-April, 2003).
- Simmons, C., Alsberg, E., Hsiong, S., Mooney, D., Enhanced Bone Regeneration By Dual Growth Factor Delivery and Controlled Scaffold Degradation, Biomedical Engineering Society 2003
- Lynch, J.B., Borschel, G. H., Heckler, A.M., Hill, E.E., Mooney, D.J., Cederna, P.S., Dennis, R.G., Kuzon, W.M. Hydrogels and Axonal Regeneration in an Acellular Nerve model. The 28th Sir Peter Freyer meeting, Galway, Ireland (September, 2003).
- Grimmer JF, Alsberg E, Murphy HS, Kong HJ, Mooney DJ, Weatherly RA: Tracheal reconstruction using auricular chondrocytes in polyglycolic-acid mesh. In: Proceedings of the Annual Meeting of the American Academy of Otolaryngology-Head and Neck Surgery, 2003.
- Huang, Y.C., Simmons, C.S., Mooney, D.J. (2003) "Sustained Expression and Delivery of PEI-Condensed DNA Via a Porous Polymer Scaffold for Bone Tissue Engineering"

at the 2003 Biomedical Engineering Society Annual Fall Meeting, Nashville, TN (October 3, 2003).

- Boontheekul, T., Mooney, D.J., Degradable alginate scaffolds for tissue engineering, *6th Tissue Engineering Society International*, December 2003, Orlando, FL
- Boontheekul, T., Mooney D.J., Degradable alginate hydrogels regulate skeletal muscle cell phenotype, *AICHE Annual Meeting*, November 2003 San Francisco, CA
- Boontheekul, T., Kong, H.J., Mooney, D.J., Biopolymer for tissue engineering, *1st Advances in Petrochemical and Polymers in the new millenium*, July 2003, Thailand
- Chen RR, Sun QH, Rajagopalan S, Grossman PM, Mooney DJ. Functional assessment of neovasculature in animal models of disease. 2003. Tissue Engineering Society International Annual Conference. Orlando, FL. (poster)
- Chen RR, Mooney DJ. Engineering neovascularization by VEGF delivery. 2003. Keystone Symposia on Angiogenesis. Santa Fe, NM. (Poster)
- Chen RR, Mooney DJ. Functional assessment of new vasculature induced by angiogenic growth factor delivery through a polymeric scaffold. 2003. Society for Women Engineers Graduate Symposium. Ann Arbor, MI. (poster)
- K. Y. Lee, H. J. Kong, R. G. Larson, and Mooney DJ, "Cell Cross-linked Hydrogels", The 227th National Meeting of American Chemical Society, Anaheim, CA, March 28-April 1, 2004.
- Kong HJ, Alsberg E, Mooney DJ: Non-destructively imaging and exploiting the degradation of hydrogels. In: Proceedings of the 277th American Chemical Society National Meeting, 2004.
- Leach JK, Mooney DJ. Prolonged nonviral gene expression from polymeric scaffolds. Tissue Engineering at Michigan Training Grant Symposium. May 11-12, 2004.
- Simmons, C., Alsberg, E., Hsiong, S., Mooney, D., Enhanced Bone Regeneration By Dual Growth Factor Delivery and Controlled Scaffold Degradation, Gordon Research Conference June 2004, Lewiston, MA
- Nakaoka R, Hsiong S, Tsuchiya T Mooney DJ, Effect of cell adhesive peptides on cell functions after their modification to alginate gel, Symposium '04 of the Japanese Society for Biomaterials, November 15-16, Tsukuba, Japan.
- Boontheekul, T, Drury, JL., Sirinutsomboon, B., Mooney, DJ., Peptide-Modified Hydrogels for Tissue Engineering, *3rd International conference on material processing for properties and performances*, Nov 2004, Singapore
- Boontheekul, T., Mooney, D.J., Regulating myoblast phenotype through controlled alginate scaffold degradation: a delivery vehicle for skeletal muscle tissue engineering, *10th Swiss Society of Biomaterials*, July 2004, Davos, Switzerland
- Boontheekul, T. Hill, E.E., Kong, H.J., Mooney, D.J., Role of scaffolding material degradation on cellular behavior, *40th Biomedical Engineering Symposium*, April 2004, Ann Arbor, MI
- Boontheekul, T. Hill, E.E., Kong, H.J., Mooney, D.J., Role of scaffolding material degradation on cellular behavior, *10th Society Women Engineering*, March 2004, Ann Arbor, MI
- Kong, H J. & Mooney, D J. “Independent control of mechanical properties of polymeric hydrogels”, MRS Symposium Proceedings, 2004.
- Kong, H.J., & Mooney, D.J. Independent control of rigidity and toughness of hydrogels. Oral presentation at MRS meeting Boston Dec. 2004.
- Kong, H.J., Alsberg, E., & Mooney, D.J. Imaging and exploiting the degradation of hydrogels. Oral presentation at ACS meeting Anaheim Mar. 2004.

- Chen RR, Sun QH, Rajagopalan S, Grossman PM, Mooney DJ. Functional assessment of new vasculature induced by VEGF delivery through a polymeric scaffold. 2004. Midwest Biomedical Engineering Conference. Ann Arbor, MI. (poster)
- Ennett, A.B. and Mooney, D.J. Polymeric system for multiple growth factor delivery to enhance vascularization. Oral presentation, 2004. *Biomedical Engineering Society (BMES) Fall Annual Meeting*, Philadelphia, PA
- Chen RR, Duvall CL, Palmer JP, Guldberg RE, Mooney DJ. Engineering functional vasculature by sustained and localized growth factor delivery. 2005. Biomedical Engineering Society Annual Fall Meeting; Baltimore, MD.
- Chen RR, Mooney DJ. Perfusion of VEGF-induced neovessel networks. 2005. Industrial Outreach Program. Cambridge, MA. (Poster)
- Kong, H.J. Functionalized hydrogels to regulate cellular phenotype. Department of Biomedical Engineering Purdue University Dec. 2005 (Invited).
- Kong, H.J., & Mooney, D.J. Kong, H.J., & Mooney, D.J. FRET measurements of cell-traction forces and nano-scale clustering of adhesion ligands varied by substrate stiffness. Oral presentation at MRS Meeting Boston Dec. 2005.
- Kong, H.J. Functionalized hydrogels to regulate cellular phenotype. Department of Pharmaceutical Sciences University of Iowa Nov. 2005 (Invited).
- Kong, H.J., & Mooney, D.J. FRET measurements of cell-traction forces and nano-scale clustering of adhesion ligands varied by substrate stiffness. Oral presentation at Biomedical Engineering Meeting Baltimore Sep. 2005.
- Kong, H.J. Mooney, D.J. Substrate stiffness regulates traction forces in parallel with cellular phenotype: Evaluation using FRET. Poster presentation at Gordon Conference (Organic Thin Film) July 2005.
- Kong, H.J. Visualizing interactions between cells and biomimetically designed extracellular matrices. University of CA-Irvine May 2005 (Invited).
- Kong, H.J. Functionalized hydrogels. American Association of Anatomists Annual Meeting at Experimental Biology San Francisco Apr. 2006 (Invited)
- Kong, H.J. Functionalizing hydrogels to regulate cell phenotype. Department of Chemical Engineering Stanford University Mar. 2006 (Invited).
- Kong, H.J. Functionalizing hydrogels to regulate cell phenotype. University of Illionis-Chicago Mar. 2006 (Invited).
- Kong, H.J. Functionalizing hydrogels to regulate cell phenotype. Department of Chemical Engineering State University of New York at Buffalo Mar. 2006 (Invited).
- Kong, H.J. Functionalizing hydrogels to regulate cell phenotype. Department of Chemical and Biomedical Engineering Florida State University Mar. 2006 (Invited).
- Kong, H.J. Cross-Talk between Cells and Functionalized hydrogels. School of Dentistry University of Toronto Feb. 2006 (Invited).
- Kong, H.J. Cross-Talk between Cells and Functionalized hydrogels. Department of Bioengineering University of Missouri Feb. 2006 (Invited).
- Kong, H.J. Cross-Talk between Cells and Functionalized hydrogels. School of Bioengineering Virginia Polytech University Feb. 2006 (Invited).
- Kong, H.J. Cross-Talk between Cells and Functionalized hydrogels. Department of Biomedical Engineering University of Alabama Feb. 2006 (Invited).
- Kong, H.J. Cross-Talk between Cells and Functionalized hydrogels. Department of Biological and Materials Sciences University of Michigan Feb. 2006 (Invited).
- Kong, H.J. Cross-Talk between Cells and Functionalized hydrogels. Department of Bioengineering University of California-Los Angeles Jan. 2006 (Invited).

- Kong, H.J. Cross-Talk between Cells and Functionalized hydrogels. University of Florida Jan. 2006 (Invited).
- Thorrez L, Shansky J, Wang L, VandenDriessche T, Chuah M, Mooney D, Vandenburgh H. Engineering of bio-artificial muscle for protein delivery. June 20, 2006, Gent, Belgium. (Oral presentation).
- Vandenburgh H, Thorrez L, Shansky J, Wang L, VandenDriessche T, Chuah M, Mooney D. Growth and Differentiation of Adult Human Skeletal Muscle Progenitor Cells on Gas-Foamed Polymeric Scaffolds. Meeting of the International Society for Tissue Engineering and Regenerative Medicine. Oktober 8-11, 2006, Rotterdam, The Netherlands. (Oral presentation).
- Fischbach C. Engineered 3-D tumor microenvironments as models for the study of cancer progression**,** Cancer Models & Mechanisms, July 30 - August 4, 2006, Bryant University, Smithfield, RI
- Storrie, H. Tapia, J.C. Lichtman, J.W. Mooney, D.J. Sustained delivery of vascular growth factors for neural tissue engineering. Biomedical Engineering Society Conference, Chicago, IL, October 2006.
- Storrie, H. Silva, E.A. Hill, E. Tapia, J.C. Lichtman, J.W. Mooney, D.J. Cell instructive polymers for tissue regeneration. American Society for Cell Biology Summer Meeting: Stem Cell Niches. Boston, MA, July 2006.
- Hsiong, S., Carampin, P., Kong, H.J., Lee, K.Y., Mooney. D.J., /Synthetic ECM Differentially Regulates Growth of Stem Cells and Preosteoblasts/, Materials Research Society Fall Meeting, MA, November 27-31, 2006.
- Hsiong, S., Carampin, P., Kong, H.J., Lee, K.Y., Mooney. D.J., /Nanoscale RGD Peptide Organization and Substrate Elastic Modulus Regulates Preosteoblast and Stem Cell Proliferation/, AiChE Annual Meeting, Tissue Engineering – Cell-Biomaterial Interactions in Tissue Engineering, San Francisco, CA, November 12-17, 2006