

CURRICULUM VITAE

Min Lee, Ph.D.

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Dr. Min Lee is a Professor in the School of Dentistry and affiliated faculty in the Department of Bioengineering at the University of California, Los Angeles. He received his Ph.D. in Biomedical Engineering from UCLA and joined the faculty of UCLA in 2007. Dr. Lee's research focuses on the design and development of new biomaterial systems to provide fundamental bases and translational approaches to tissue engineering and regenerative medicine. Specific areas of interest are orthobiologics, material-based therapeutics to repair craniofacial and orthopedic skeletal defects, novel liposomal platform for drug and gene delivery, photopolymerizable hydrogel systems.

Education

2007 Ph.D. Biomedical Engineering, University of California, Los Angeles, California
1999 M.S. Materials Science and Engineering, Yonsei University, Seoul, Korea
1997 B.S. Materials Science and Engineering, Yonsei University, Seoul, Korea

Academic Appointments

2017-present: Professor, Section of Biomaterials Science, School of Dentistry, UCLA
2013-2017 Associate Professor, Section of Biomaterials Science, School of Dentistry, UCLA
2010-2013 Assistant Professor, Section of Biomaterials Science, School of Dentistry, UCLA
2010-present Affiliate Faculty, Department of Bioengineering, School of Engineering, UCLA
2009- Adjunct Assistant Professor, Section of Orthodontics, School of Dentistry, UCLA
2007-2009 Visiting Assistant Professor, Section of Orthodontics, School of Dentistry, UCLA

Honors and Awards

- J.R. Neff Award, Musculoskeletal Transplant Foundation, 2018
- Dean's Groundbreaking Research Award, 2014
- Innovation in Implant Sciences Award, IADR/Academy of Osseointegration, 2011
- Academic Senate Research Award, 2011
- Dean's Faculty Research Seed Grant Award, 2009, 2011, 2013
- Best Poster Award, Annual California Tissue Engineering Meeting, 2003

Selected Publications

1. Fan J, Lee CS, Kim S, Zhang X, Pi-Anfruns J, Guo M, Chen C, Rahnama M, Li J, Wu BM, Aghaloo T, **Lee M.** Trb3 Controls Mesenchymal Stem Cell Lineage Fate and Enhances Bone Regeneration by Scaffold-Mediated Local Gene Delivery *Biomaterials* 264:120445, 2021.
2. Kim S, **Lee M.** Rational design of hydrogels to enhance osteogenic potential. *Chemistry of Materials* 32(22):9508-9530, 2020.
3. Fan J, Lee CS, Kim S, Chen C, Aghaloo T, **Lee M.** Generation of Small RNA-Modulated Exosome Mimetics for Bone Regeneration. *ACS Nano* 14(9):11973-11984, 2020.
4. Lee CS, Hwang HS, Kim S, Fan J, Aghaloo T, **Lee M.** Inspired by nature: facile design of nanoclay-organic hydrogel bone sealant with multifunctional properties for robust bone regeneration. *Advanced Functional Materials* 30(43):2003717, 2020.
5. Lee CS, Kim S, Fan J, Hwang HS, Aghaloo T, **Lee M.** Smoothed Agonist Sterosome Immobilized Hybrid Scaffold for Bone Regeneration. *Science Advances* 6(17):eaaz7822, 2020.
6. Zhang X, Fan J, Lee CS, Kim S, Chen C, **Lee M.** Supramolecular Hydrogels based on Nanoclay and Guanidine-Rich Chitosan: Injectable and Moldable Osteoinductive Carriers. *ACS Applied Materials & Interfaces* 12(48):6088-16096, 2020.
7. Zhang X, Fan J, Lee CS, Kim S, Chen C, Aghaloo T, **Lee M.** Apatite-binding nanoparticulate agonist of hedgehog signaling for bone repair. *Advanced Functional Materials* 30(12):1909218, 2020.
8. Cui Z, Kim S, Baljon J, Wu B, Aghaloo T, **Lee M.** Microporous chitosan-montmorillonite nanocomposite hydrogel for bone tissue engineering. *Nature Communications* 10(1):3523, 2019.
9. Kim S, Cui Z, Koo B, Zheng J, Aghaloo T, **Lee M.** Chitosan-Lysozyme Conjugates for Enzyme-Triggered Hydrogel Degradation in Tissue Engineering Applications. *ACS Applied Materials & Interfaces* 10(48):41138-

- 41145, 2018.
10. Cui Z, Kim S, Baljon J, Doroudgar M, Lafleur M, Wu B, Aghaloo T, **Lee M**. Design and characterization of a therapeutic non-phospholipid liposomal nanocarrier with osteoinductive characteristics to promote bone formation. *ACS Nano* 11(8):8055-8063, 2017.
 11. Hong C, Song D, Lee D, Lin L, Pan H, Lee D, Deng P, Liu Z, Hadaya D, Mohammad A, Zhang X, **Lee M**, Wang CY, Ho D. Reducing Post-Treatment Relapse in Cleft Lip Palatal Expansion Using an Injectable Estrogen-Nanodiamond Hydrogel. *Proceedings of the National Academy of Sciences*, 114(35):E7218-E7225, 2017.
 12. Fan J, Pi-Anfruns J, Guo M, Im C, Cui Z, Kim S, Wu BM, Aghaloo T, **Lee M**. Small molecule-mediated tribbles homolog 3 promotes bone formation induced by bone morphogenetic protein-2. *Scientific Reports* 7(1):7518, 2017.
 13. Cui Z, Sun J, Baljon J, Fan J, Kim S, Wu B, Aghaloo T, **Lee M**. Simultaneous Delivery of siRNA and Hydrophobic Small Molecules Using Sterosomes to Direct Mesenchymal Stem Cell Differentiation for Bone Repair. *Acta Biomaterialia* 58:214-224, 2017.
 14. Fan J, Guo M, Im C, Pi-Anfruns J, Cui Z, Kim S, Wu BM, Aghaloo T, **Lee M**. Enhanced mandibular bone repair by combined treatment of bone morphogenetic protein-2 and small molecule phenamil. *Tissue Engineering part A* 23(5-6):195-207, 2017. *Cover Article*
 15. Fan J, Im C, Guo M, Cui Z, Fartash A, Kim S, Patel N, Bezouglaia O, Wu BM, Wang CY, Aghaloo T, **Lee M**. Enhanced osteogenesis of adipose-derived stem cells by regulating BMP signaling antagonists and agonists. *Stem Cells Translational Medicine* 5(4):539-551, 2016.
 16. Cui Z, Fan J, Kim S, Bezouglaia O, Fartash A, Wu B, Aghaloo T, **Lee M**. Delivery of siRNA via cationic Sterosomes to enhance osteogenic differentiation of mesenchymal stem cells. *Journal of Controlled Release* 217:42-52, 2015.
 17. Choi B, Kim S, Fan J, Kowalski T, Petrigliano F, Evseenko D, **Lee M**. Covalently conjugated transforming growth factor- β 1 in modular chitosan hydrogels for the effective treatment of articular cartilage defects. *Biomaterials Science* 3:742-752, 2015.
 18. Choi B, Kim S, Lin B, Wu B, **Lee M**. Cartilaginous extracellular matrix-modified chitosan hydrogels for cartilage tissue engineering. *ACS Applied Materials & Interfaces* 6(22):20110-20121, 2014.
 19. Lee J, Choi B, Wu B. **Lee M**. Customized biomimetic scaffolds created by indirect three-dimensional printing for tissue engineering. *Biofabrication* 5(4):045003, 2013. *Featured article*
 20. Chang J, Liu F, **Lee M**, Wu BM, Ting K, Zara J, Soo C, Hezaiman KA, Zou W, Chen X, Mooney D, Wang CY. NF- κ B inhibits osteogenic differentiation of mesenchymal stem cells by promoting b-catenin degradation. *Proceedings of the National Academy of Sciences* 110(23):9469-74, 2013.
 21. Levi B, Hyun JS, Montoro DT, Lo D, Hu S, Sun N, Nag D, **Lee M**, Grova M, Nelson ER, Lee A, Connolly A, Wu JC, Gurtner GC, Wan DC, Longaker MT. *In Vivo* Directed Differentiation of Pluripotent Stem Cells for Skeletal Regeneration. *Proceedings of the National Academy of Sciences* 109(50):20379-84, 2012.
 22. Siu R, Zara J, Hou Y, Li W, Kwak J, James A, Zhang X, Ting K, Wu BM, Soo C, **Lee M**. Cartilage regeneration mediated by Nell-1 in a rabbit cartilage defect model. *Tissue Engineering part A* 18:252-61, 2012.
 23. **Lee M**, Li W, Siu R, Whang J, Zhang X, Soo C, Kang T, Wu BM. Biomimetic Apatite-Coated Alginate/Chitosan Microparticles as Osteogenic Protein Carriers. *Biomaterials* 30:6094-6101, 2009.
 24. **Lee M**, Chen TT, Iruela-Arispe ML, Wu BM, Dunn JC. Modulation of Protein Delivery from Modular Polymer Scaffolds. *Biomaterials* 28:1862-1870, 2007.
 25. **Lee M**, Dunn JC, Wu BM. Scaffold Fabrication by Indirect Three-dimensional Printing. *Biomaterials* 26:4281-4289, 2005

Book & Chapters

1. **Lee M**, Wu BM. Tissue Engineering of Maxillofacial Tissues. In: Maxillofacial Rehabilitation – Prosthodontic and Surgical Management of Cancer-Related, Acquired, and Congenital Defects of the Head and Neck, 3rd edition, Edited by J Beumer, M Marunick, and S Esposito, Quintessence Publishing Co, Inc, 2011.
2. **Lee M**, Wu BM. Three-dimensional (3D) Printing of Tissue Engineering Scaffolds. In: *Computer-Aided Tissue Engineering*, Edited by Liebschner, Michael A.K. Springer 2012.
3. Choi B, **Lee M**. Injectable Hydrogels for Cartilage Tissue Engineering. In: *Injectable Hydrogels for Tissue Regeneration*, Edited by Nair, Lakshmi S. Imperial College Press 2016.

Professional Affiliations

- Institute of Biological Engineering, Society for Biomaterials, Tissue Engineering & Regenerative Medicine International Society, American Association for Dental Research, Academy of Osseointegration