Eun Ji Chung, Ph.D.

University of Southern California
Department of Biomedical Engineering
University Park, DRB 140
1042 Downey Way, Los Angeles, CA 90089-1111

Office: 213-740-2925
Fax: (213) 821-3897
Email: eunchung@usc.edu
Web: http://biomaterials.usc.edu

Education

2007—2011 **Ph.D. Biomedical Engineering**
Northwestern University, Evanston, IL

2002—2006 **B.A. Honors in Molecular Biology**
Scripps College, Claremont, CA

Academic Positions

2016—Present **Assistant Professor, University of Southern California**
2019—Present Dr. Karl Jacob Jr. and Karl Jacob III Early Career Chair
2018—Present Courtesy: Dept. of Medicine-Division of Nephrology and Hypertension
2018—Present Courtesy: Dept. of Surgery-Division of Vascular Surgery and Endovascular Therapy
2018—Present Courtesy: Chemical Engineering and Materials Science
2017—Present Courtesy: Stem Cell Biology and Regenerative Medicine
2017—Present Associate Member: Norris Comprehensive Cancer Center
2016—Present Department of Biomedical Engineering

2012—2016 **Research Associate/Postdoctoral Fellow, University of Chicago**
Institute for Molecular Engineering

2011—2012 **Postdoctoral Fellow, Northwestern University**
Institute for BioNanotechnology in Medicine
Dept. of Materials Science and Engineering

Awards and Honors

2020 Selected Participant, Early Career Development (SEED) Workshop, Korean American Scientists and Engineers Association (KSEA)
2020 Young Investigator Award, Oral Drug Delivery Focus Group, Controlled Release Society
2020 Viterbi School of Engineering Junior Research Award, USC
2020 Young Investigator Award, Chinese Association for Biomaterials
2020 Outstanding Young Alumna Award, Scripps College
2020 Young Innovator in Cellular and Molecular Bioengineering, Biomedical Engineering Society (BMES)
2020 Rising Star in Cellular and Molecular Bioengineering, Biomedical Engineering Society (BMES)
2019 New Innovator, IEEE-Nanomed
2019-24 Karl Jacob Jr. and Karl Jacob III Early Career Chair
2019 Emerging Investigator, Journal of Materials Chemistry B
2019 Selected Participant, National Academy of Engineering Frontiers in Engineering
2019 Outstanding Young Engineer Award, Orange County Engineering Council

2018-23 DP2 New Innovator Award, National Institutes of Health
2018 Mentoring Award, Faculty Mentoring Undergraduate Students, USC
2018 Young Innovator Award in Nanobiotechnology, Nano Research journal
2018 Reviewer Excellence Award, Society for Laboratory Automation and Screening (SLAS)
2017 Eli and Edythe Broad Innovation Award, University of Southern California
2017 Career Development Award, Biomedical Engineering Society (BMES)
2017 35 Under 35, American Institute for Chemical Engineers (AIChE)
2017 Emerging Investigator, Biomaterials Science journal
2017 Tony B. Academic Travel Award, Society for Laboratory Automation and Screening Annual Conference
2017 Ph.D. Recruitment Program Award, Women in Science and Engineering (WiSE), USC
2016 Young Investigator Session at IEEE, Micro and Nanotechnology in Medicine Conference
2016-19 Gabilan Assistant Professorship, Women in Science and Engineering (WiSE), USC
2016-19 R00 Pathway to Independence Award, National Institutes of Health
2016, 17, 18, 19 Faculty Supplement Award, Women in Science and Engineering (WiSE), USC
2016, 17, 18, 19 Junior Faculty Travel Award, Viterbi School of Engineering, USC

Prior to University of Southern California

2015-16 K99 Pathway to Independence Award, National Institutes of Health
2014-15 Postdoctoral Research Grant, Chicago Biomedical Consortium
2014 Prospective Faculty Workshop, Selected Participant, Purdue University
2013 NSF-ADVANCE Future Faculty Workshop, Selected Participant, Northeastern University
2013 NextProf Workshop, Selected Participant, University of Michigan
2012-14 Postdoctoral Fellowship, American Heart Association
2011-12 Early Career Award, Institute for BioNanotechnology in Medicine-Baxter
2010 Certificate for Management for Scientists and Engineers, Kellogg School of Management, Northwestern University
2010 Semi-finalist, Venture Challenge, Northwestern University
2009, 10 Travel Award, Interdisciplinary Biological Sciences, Northwestern University
2008, 09 Travel Award, The Graduate School, Northwestern University

Research Funding

Current

WiSE Major Support (PI) 01/2021-12/2022
Title: Combination Nanotherapy for Metastatic Prostate Cancer
Funding Agency: Women in Science (WiSE), USC
Total Costs: $25,000

NIH Director's New Innovator Award, DP2 DK121328 (PI) 09/2018-06/2023
Title: A Revolutionary Approach for Polycystic Kidney Disease: Oral Nanotherapeutics
Funding Agency: NIDDK, National Institutes of Health
Total Costs: $2,433,330

Established Investigator Award (PI: Madhur (Vanderbilt), Role: Co-I) 04/2019-06/2022
Title: Defining Novel Inflammatory Pathways in Hypertension and Aortic Dissection
Funding Agency: American Heart Association

Total Costs: $240,000

Predoctoral Award, 19PRE34380998 (PI: Chin, Role: Sponsor) 01/2019-12/2020
Title: Targeting Atherosclerotic Calcification by Multimodal miR-145 Micelles
Funding Agency: American Heart Association
Total Costs: $53,688

Innovation in Engineering Fellowship (PI: Wang, Role: Sponsor) 08/2018-08/2021
Title: Oral Delivery of Peptide Amphiphile Micelles for Polycystic Kidney Disease
Funding Agency: Alfred E. Mann Institute for Biomedical Engineering, USC
Total Costs: $99,000

Completed

R00 Pathway to Independence Award, R00 HL124279 (PI) 08/2016-08/2020
Title: Multimodal Peptide Amphiphile Micelles for Atherosclerosis
Funding Agency: NHLBI, National Institutes of Health
Total Costs: $747,000 (no cost extension)

Research on Engineering-Medicine for Cancer Award (PI) 07/2018-7/2019
Title: Monocyte Chemoattractant Protein-1 Mimetic Micelles for Prostate Cancer Therapy and Immunomodulation
Funding Agency: Ming Hsieh Institute, USC
Total Costs: $140,000

Gabilan Assistant Professorship (PI)
Funding Agency: USC Women in Science and Engineering (WiSE) 08/2016-08/2019
Total Costs: $45,000

Undergraduate Research Associates Program (PI) 08/2018-05/2019
Title: Shape Effects of Nanoparticles for Targeting Atherosclerosis
Funding Agency: USC Provost's Office
Total Costs: $3,000

Non-Cancer Translational Research Award (PI: Rodriguez, Co-PI: Chung) 03/2017-06/2018
Title: Tissue Regeneration of the Urethra with Adipose Derived Stem Cells and Heparin-Binding Peptide Amphiphile Hydrogels for the Treatment of Stress Urinary Incontinence
Funding Agency: L.K. Whittier Foundation, USC
Total Costs: $50,000

Powell Research Award (PI) 2017-2018
Equipment Fund
Funding Agency: Charles Lee Powell Foundation, USC
Total Costs: $100,610

Broad Innovation Award (PI: Chung, Co-PI: Rodriguez) 01/2017-12/2017
Title: Heparin-Binding Peptide Amphiphile Hydrogels for Urethral Regeneration
Funding Agency: Eli and Edythe Broad Foundation, USC
Total Costs: $120,000

Completed Prior to University of Southern California

K99 Pathway to Independence Award, K99 HL124279 (PI) 05/2014-08/2016
Title: Multimodal Peptide Amphiphile Micelles for Atherosclerosis
Funding Agency: National Institutes of Health
Total Costs: $179,928

CBC Postdoctoral Research Grant (PI) 07/2014-12/2015

Title: Multimodal Peptide Amphiphile Micelles for Atherosclerosis at the Lynn S. Florsheim Magnetic Resonance Imaging and Spectroscopy (MRIS) Laboratory
Funding Agency: Chicago Biomedical Consortium
Total Costs: $15,000

AHA Postdoctoral Fellowship, 12POST11730002 (PI) 07/2012-07/2014
Title: Monocyte-Targeting, Peptide Micelles for the Early Detection of Vulnerable Plaques
Funding Agency: American Heart Association
Total Costs: $90,772

IBNAM-Baxter Early Career Development Award in Bioengineering (PI) 09/2011-07/2012
Title: Bioactive Self-Assembling Coatings for Tendon-to-Bone Healing in Rotator Cuff Injuries
Funding Agency: Institute for BioNanotechnology in Medicine (IBNAM) – Northwestern University, Baxter Corporation
Total Costs: $110,000

Publications

**Graduate student #Postdoctoral researcher ^Undergraduate student ^^High school student*
Corresponding author

47. Chin, D.* Poon, C.#, Wang, J.*, Joo, J.^, Ong, V.^, Jiang, Z.^, Cheng, K.^, Plotkin, A., Magee, G., Chung, E.J. miR-145 Micelles mitigate atherosclerosis by modulating vascular smooth muscle cell phenotype: Under Review.

46. Chin, D.D.*, Poon, C.#, Wang, J.*, Joo, J.^, Ong, V.^, Jiang, Z.^, Cheng, K.^, Magee, G., Plotkin, A., **Chung, E.J.** Multifunctional peptide micelles for smooth muscle cell targeting and microRNA therapy to prevent and reduce atherosclerosis. bioRxiv (2020).

45. Wang, J.*, Li, H., Rivera, D., Hallows, K., **Chung, E.J.** Chitosan nanocapsules for oral drug delivery in polycystic kidney disease. J of Controlled Release: In Press (2020).

44. Trac, N.*, Chen, L., Zhang, A., Liao, C., Poon, C.#, Ando, Y., Joo, J.^, Garri, C., Shen, K., Kani, K., Gross, M., **Chung, E.J.** CCR2-targeted micelles for anti-cancer peptide delivery and immune stimulation. J of Controlled Release: In Press (2020).

43. Wang, J.*, Tripathy, N.#, **Chung, E.J.** Peptide-based strategies for polycystic kidney disease. Advanced Drug Delivery Reviews: In Press (2020).

42. Huang, Y.*, Jiang, K.^, Zhang, X.*, and **Chung, E.J.** The effect of size, charge, and peptide ligand length on kidney targeting by small, organic nanoparticles. Bioengineering and Translational Medicine, 5(3): 2020. ***Featured in the Futures issue***

41. Tripathy, N.#, Wang, J.*, Tung, M.^, Conway, C.^, **Chung, E.J.**, Transdermal delivery of kidney-targeting nanoparticles using dissolvable microneedles. Cellular and Molecular Bioengineering: In Press. ***Featured in the Young Innovator issue***

40. Chin, D.D.*, Poon, C.#, Trac, N.*, Wang, J.*, Cook, J.^, Joo, J.^, Jiang, Z.^, Sulit Sta Maria, M., Jacobs, R., **Chung, E.J.** Collagenase-cleavable, therapeutic micelles for theranostic applications in atherosclerosis. Advanced Therapeutics, 3(3): 1900196 (2020).

39. Trac, N.* and **Chung, E.J.** Peptide-based targeting of immunosuppressive cells in cancer. Bioactive Materials, 5(1):92-101 (2020).

38. Chin, D.D.*, Wang, J.*, Mel de Fontenay, M.^, Plotkin, A. Magee, G., **Chung, E.J.** Hydroxyapatite-binding micelles for the detection of vascular calcification in atherosclerosis. J of Materials Chemistry B, 7: 6449-57 (2019). ***Featured in the Emerging Investigators issue***

37. Chung, E.J. Nanoparticle strategies for biomedical applications: Reviews from the University of Southern California Viterbi School of Engineering. SLAS Technology, 24(2): 135-136 (2019). ***Featured in the USC (BME459) Students Nanoparticle Strategies for Biomedical Applications special issue***

36. Ong, V.^, Cao, L.^, Lee, K.^, Mei, V.^, **Chung, E.J.** Nanomedicine for cystic fibrosis. SLAS Technology, 242(2): 169-180 (2019). ***Featured in the USC Students Nanomedicine special issue***

35. Halbur, C.^, Choudhury, N.^, Chen, M.^, Kim, J.H.^, **Chung, E.J.** siRNA-conjugated nanoparticles to treat ovarian cancer. SLAS Technology, 24(2): 137-150 (2019). ***Featured in the USC Students Nanomedicine special issue***

34. Kurtanich, T.^, Roos, N.^, Wang, G.^, Yang, J.^, Wang, A.^, **Chung, E.J.** Pancreatic cancer gene therapy delivery by nanoparticles. SLAS Technology, 24(2): 151-160 (2019). ***Featured in the USC Students Nanomedicine special issue***

33. Chin, D.*, Chowdhuri, S.^, **Chung, E.J.** Calcium-targeting nanoparticles for vascular disease. Regenerative Engineering and Translational Medicine, 5(1): 74-85 (2019).

32. Joo, J.^, Poon, C.#, Yoo, S.P., **Chung, E.J.** Shape effects of peptide amphiphile micelles for targeting monocytes. Molecules, 23(11): 2786 (2018).

31. Poon, C.#, Gallo, J., Joo, J.^, Chang, T.^, Banobre-Lopez, M., **Chung, E.J.** Hybrid, metal oxide-peptide amphiphile micelles for molecular magnetic resonance imaging of atherosclerosis. Journal of Bionanotechnology, (2018).

30. Chung, E.J. and Hallows, K.R. First do no harm: Kidney drug targeting to avoid toxicity in ADPKD. American Journal of Physiology-Renal Physiology, 3(15): F535-F536 (2018).

29. Wang, J.*, Poon, C.#, Chin, D.*, Milkowski, S.^, Lu, V.^^, Hallows, K.R., **Chung, E.J.** Design and in vivo characterization of kidney-targeting multimodal micelles toward renal drug delivery. **Back Cover** of Nano Research, 11(10): 5584-5595 (2018). ***Featured in the Young Innovator in Nanobiotechnology issue***

28. Zavaleta, C., Ho, D., **Chung, E.J.** Theranostic nanoparticles for tracking and monitoring disease state. SLAS Technology, 23(3): 281-293 (2018).

27. Poon, C.#, Chowdhuri, S.^, Kuo, C.H., Fang, Y., Alenghat,F., Hyatt, D., Kani, K., Gross, M., **Chung, E.J**. Protein mimetic properties of monocyte-targeting peptide amphiphile micelles. ACS Biomaterials Science and Engineering, 3(12): 3273-3282 (2017).

26. Poon, C.#, Sarkar, M.^, **Chung, E.J.** Monocyte-targeting peptide amphiphile micelles for atherosclerosis. JoVE, 129 (2017).

25. Wang, J.*, Masehi-Lano, J.J., **Chung, E.J.** Peptide and antibody ligands for renal targeting: Nanomedicine strategies for kidney disease. Biomaterials Science, 5(8): 1450-1459 (2017). ***Featured in the Emerging Investigators issue***

24. Khodabandehlou, K.#, Masehi-Lano, J. J., Poon, C.#, Wang, J.*, **Chung, E.J.** Targeting cell adhesion molecules with nanoparticles using in vivo and flow-based in vitro models of atherosclerosis. Experimental Biology and Medicine, 242(8): 799-812 (2017).

23. Marciel, A.B., **Chung. E.J**., Brettmann, B.K. Leon, L. Bulk and nanoscale polypeptide based polyelectrolyte complexes. Adv. Colloid and Interface Science, 239: 187-198 (2017).

22. **Chung, E.J.** Targeting and therapeutic peptides in nanomedicine for atherosclerosis. Experimental Biology and Medicine, 241(9): 891-898 (2016).

21. Yoo, S. P., Pineda, F., Barrett, J.C., Poon, C.[#], Tirrell, M., **Chung, E.J.** Gadolinium-functionalized peptide amphiphile micelles for multimodal imaging of atherosclerotic lesions. ACS Omega, 1(5): 996-1003 (2016).

20. Chung, E.J., Tirrell, M. Recent advances in targeted, self-assembling nanoparticles to address vascular damage due to atherosclerosis. **Cover** of Advanced Healthcare Materials, 4(16):2408-2422 (2015).

Prior to University of Southern California

19. Chung, E.J., Sugimoto, M., Koh, J., Ameer, G.A. A biodegradable tri-component graft for anterior cruciate ligament reconstruction. **Cover** of J Tissue Engineering and Regenerative Medicine, 11(3): 704-712 (2017).

18. Acar, H., Srivastava, S., **Chung, E.J.**, Schnorenberg, M.R., Barrett, J.C., LaBelle, J.L., Tirrell, M. Self-assembling peptide-based building blocks in medical applications. Advanced Drug Delivery Reviews, 110-111: 65-79 (2016).

17. Black, K., Lin, B., Wonder, E., Desai, S., **Chung, E.J.**, Ulery, B., Katari, R., Tirrell, M.V. Biocompatibility and optimization of a peptide amphiphile hydrogel for peripheral nerve tissue regeneration. Tissue Engineering 21(7-8): 1333-1342 (2015).

16. Chung, E.J., Mlinar, L.B., Sugimoto, M.J., Nord, K., Roman, B.B., Tirrell, M.V. In vivo biodistribution and clearance of peptide amphiphile micelles. Nanomedicine 11(2): 479-487 (2015).

15. Chung, E.J., Mlinar, L.B., Nord, K., Sugimoto, M., Wonder, E., Alenghat, F., Fang, Y., Tirrell, M.V. Monocyte-targeting supramolecular micellar assemblies: A molecular diagnostic tool for atherosclerosis. **Inside Cover** of Advanced Healthcare Materials 4(3): 323-475 (2015).

14. Chung, E.J., Pineda, F., Karczmar, G., Lee, S.K., Tirrell, M. Fibrin-targeting, peptide amphiphile micelles as contrast agents for molecular MRI. Journal of Cell Science and Therapy 5(5): 1000181 (2014).

13. Kuo, C-H., Leon, L.F., **Chung, E.J**., Sontag, T.J., Reardon, C.A., Getz, G.S., Tirrell, M., Fang, Y. Inhibition of atherosclerosis-promoting microRNAs via targeted polyelectrolyte complex micelles. **Inside Cover** of Journal of Materials Chemistry B 2(46): 8142-8153 (2014).

12. Mlinar, L.B., **Chung, E.J**., Wonder, E., Tirrell, M. Active targeting of early and mid-stage atherosclerotic plaques using self-assembled peptide amphiphile micelles. Biomaterials 35(30): 8678-86 (2014).

11. Chung, E. J., Cheng, Y., Morshed, R., Nord, K., Han, Y., Wegscheid, M., Auffinger, B., Wainwright, D.A., Lesniak, M.S., Tirrell, M.V. Peptide amphiphile micelles for targeting glioblastomas. Biomaterials 35(4): 1249-1256 (2014).

10. Chien, K.B., **Chung, E.J**., and Shah, R.N. Investigation of soy protein hydrogels for biomedical applications: Materials characterization, drug release, and biocompatibility. Journal of Biomaterials Applications 28(7): 1085-1096 (2014).

9. E.J. Chung, K.B. Chien, B.A. Aguado, and R.N. Shah. Osteogenic potential of BMP-2-releasing self-assembled membranes, Tissue Engineering Part A, 19(23-24), 2664-2673 (2013).

8. Chung, E.J., Jakus, A.E., and Shah, R.N. In situ forming collagen-hyaluronic acid membrane structures: Mechanism of self-assembly and applications in regenerative medicine. Acta Biomaterialia 9(2): 5153-61 (2013).

7. Chung, E.J., Sugimoto, M., Koh, J., Ameer, G.A. Low pressure foaming: A novel method for the fabrication of porous scaffolds for tissue engineering. **Cover** of Tissue Engin. Part C 18(2): 113-121 (2012).

6. Chung, E.J., Sugimoto, M., Ameer, G.A. The role of hydroxyapatite in citric acid-based nanocomposites: Surface characteristic, degradation, and osteogenicity. Acta Biomaterilia 7(11): 4057-4063 (2011).

5. Chung, E.J., Kodali, P., Yang, S., Laskin, W., Koh, J., Ameer, GA. Long-term in vivo response to citric acid-based nanocomposites for orthopaedic tissue engineering. Journal of Materials Science: Materials in Medicine 22(9): 2131-2138 (2011).

4. Chung, E.J., Qiu, H.J., Kodali, P., Yang, S., Hwong, J., Koh, J., Ameer, G.A. Early tissue response to citric acid-based micro- and nanocomposites. J Biomedical Materials Research: Part A 96A(1): 29-37 (2011).

3. Wang, J., Singh, C., Liu, L., Irwin, R., Chen, S., **Chung, E.J.**, Thompson, R., Brinton, R. Allopregnanolone reverses neurogenic and cognitive deficits in mouse model of Alzheimer's disease. PNAS 107(14): 6498-6503 (2010).

2. Serrano, M.C., **Chung, E.J.**, Ameer, G.A. Advances and applications of biodegradable elastomers in regenerative medicine. Advanced Functional Materials 20(2): 192-208 (2010).

1. Lee, S.Y., Kim, T.Y., Lee, M.S., Kim, Y.B., **Chung, E.J.**, Lee, J.W. Focal adhesion and actin organization by a cross-talk of TM4SF5 with integrin alpha2 are regulated by serum treatment. Experimental Cell Research 312(16): 2983-2999 (2006).

Books and Book Chapters

6. Chung, E.J., Leon, L., Rinaldi, C. (co-Editors) Nanoparticles for Biomedical Applications: Fundamental Concepts, Biological Interactions, and Clinical Applications, Elsevier (book, 2019).

5. Leon, L, **Chung, E.J.**, Rindali, C. A brief history of nanotechnology and introduction to nanoparticles for biomedical applications, Nanoparticles for biomedical applications: Fundamental concepts, biological interactions, and clinical applications, Elsevier (2019).

4. Wang, J.*, Mellas, M., Tirrell, M., **Chung, E.J.** Chapter 13: Hydrophobically-assembled nanoparticles, Nanoparticles for biomedical applications: Fundamental concepts, biological interactions, and clinical applications, Elsevier (2019).

3. Masehi-Lano, J.J. and **Chung, E.J.** Chapter 1: Engineering citric-acid based porous scaffolds for bone regeneration, Methods in molecular biology, biomaterials for tissue engineering: Methods and protocols, Springer (2018).

2. Chung, E.J., Leon, L., Hunt, K., Tirrell, M. Peptide amphiphile micelles from structure to function, Handbook of lipid membranes: Molecular, functional, and materials aspects (2016).

1. Chung, E.J., Shah, N., and Shah, R.N. Chapter 13: Nanomaterials for cartilage regeneration, Nanomaterials in tissue engineering: Characterization, fabrication and applications (2013).

Other Publications

16. Chung, E.J. Office Hours. "Personalized Medicine" podcast (March 2018).

15. Chung, E.J. Viterbi Voices. "Nanomedicine, Tissue Engineering and Biomaterials Research" podcast (Nov. 22, 2017).

14. Chung, E.J. Globalgirl Media podcast (July 2017).

13. Chung, E.J. NextGen Voices. Science 352(6288): online issue (May 20, 2016).

12. Chung, E. J. March Scientist of the Month: Sharon Feng. Association of Women in Science, Chicago (2014).

11. Chung, E.J. CRIXlabs, Inc. "Nanomedicine" podcast (2013).

10. Chung, E.J. NextGen Voices. Science 342(6154): online issue (Oct. 4, 2013).

9. Chung, E.J. January Scientist of the Month: Christine McCary. Association of Women in Science (AWIS), Chicago (2013).

8. Chung, E.J. November Scientist of the Month: Chinonye Nnakwe. AWIS, Chicago (2012).

7. Chung, E.J. January Scientist of the Month: Tracy Gluckman. AWIS, Chicago (2012).

6. Chung, E.J. and Ameer, G.A. Twenty (or more) things you might not know about nanotechnology. Northwestern University, Office for Research, CenterPiece 11(1): 3 (2011).

5. Chung, E.J. October Scientist of the Month: Ramille N. Shah. AWIS, Chicago (2011).

4. Chung, E.J. March Scientist of the Month: Louise Giam. AWIS, Chicago (2011).

3. Chung, E.J. November 200 Scientist of the Month: Sacha Patera. AWIS, Chicago (2010).

2. Chung, E.J. July Scientist of the Month: Deborah Quock. AWIS, Chicago (2010).

1. Chung, E.J. April Scientist of the Month: Guillermo A. Ameer. AWIS, Chicago

Patents

2. Chung, E.J. and Wang, J.* Oral Delivery of Chitosan Nanocapsules for Polycystic Kidney Disease, USC0232PRV1, 2018 (Provisional Patent)

1. Poon, C.[#] and **Chung, E.J.** Multifunctional Peptide Micelles for Smooth Muscle Cell Targeting and MicroRNA Therapy to Prevent and Reduce Atherosclerosis, USC0265PRV, 2019 (Provisional Patent)

Invited Presentations

Academia

44. Rising Stars in Drug Delivery and Novel Carriers, University of North Carolina, Chapel Hill, April 26, 2021

43. Marquette University & Medical College of Wisconsin Grad Seminar Series, March 26, 2021

42. Exploiting the body's barriers for nanomedicine targeting. BME Leadership Seminar Series. Dept. of Biomedical Engineering, University of Florida, Gainesville, FL, Nov. 30, 2020

41. Designing nanomedicine past the body's barriers**.** Dept. of Biomedical Engineering, University of Virginia, Nov. 6, 2020

40. Delivering nanomedicine to the kidneys. USC MESH Academy Research Virtual Seminar Series, Sept. 24, 2020

39. Exploiting the body's barriers for nanomedicine. Applied Bioengineering Seminar, Seoul National University, Seoul, South Korea, Sept. 16, 2020

38. Harnessing the body's barriers for nanomedicine. e-Seminar for Pre-Tenure Faculty in Bioengineering, May 15, 2020

37. Exploring the potential of nano-based diagnostics and therapeutics. USC BRIDGE Faculty Luncheon Seminar Series, April 29, 2020

36. Harnessing the body's barriers for nanomedicine targeting. Dept. of Chemical Engineering, University of Texas at Austin, Austin, TX, February 25, 2020

35. Harnessing the body's barriers for nanomedicine targeting. Dept. of Medicine, Division of Nephrology, University of Miami, Miami, FL, February 21, 2020

34. Nanomicelles for targeting diseases. UCSB, Dept. of Molecular, Cellular, and Development Biology, Dec. 12, 2019

33. Harnessing the body's barriers for nanomedicine targeting. Hanyang University, Dept. of Bioengineering, Seoul, South Korea, November 21, 2019

32. Micelles in bionanotechnology and translation. Micro and Nanotechnologies for Medicine Workshop. UCLA, Los Angeles, CA, July 8-12. 2019

31. Peptide-based nanomedicine for kidney and cardiovascular diseases. Korean government sponsored, Korean physician-scientists symposium. UC Irvine, Los Angeles, CA, June 24, 2019

30. Toward theranostic applications using peptide-based nanomedicine. Georgia Tech, Bioengineering Seminar, May 9, 2019

29. Kidney-targeting multimodal micelles toward polycystic kidney disease therapy. ASBME USC BIOMED Research Symposium. Sept. 7, 2018

28. Peptide-based nanomedicine for biomedical applications. CHLA/USC Summer Oncology Research Fellowship Program. July 26th, 2018

27. Peptide-based nanoassemblies toward targeted, theranostic applications. UCLA, Dept. of Bioengineering, May 10, 2018

26. Peptide-metformin nanomedicine for polycystic kidney disease therapy. Mayo Translational Polycystic Disease Center, Mayo Clinic, Rochester, MN, April 6th, 2018

25. Molecular engineering for theranostic applications. University of Southern California, Dept. of Medicine, Division of Nephrology, Kidney Disease Research Team Seminar Series, Dec. 5, 2017

24. Molecular engineering for regenerative medicine theranostic applications. University of Southern California, Dept. of Chemical Engineering, Nov. 30, 2017

23. Nanomedicine for atherosclerosis. 3rd Biennial Los Angeles Cardiovascular Symposium. Cedars Sinai, Los Angeles, CA, May 15, 2017

22. Biomaterials-based design for targeting imaging and therapy. USC BRIDGE Faculty Luncheon Seminar Series, May 3, 2017

21. Molecular engineering for theranostics. UC Riverside, Dept. of Bioengineering, May 11, 2016

20. Biomaterials design for tissue regeneration and theranostic applications. University of Southern California, Dept, of Stem Cells and Regenerative Medicine, May 10, 2016

19. Molecular engineering for regenerative medicine and theranostic applications. Johns Hopkins, Dept. of Materials Science, March 16, 2015

18. Molecular engineering for regenerative medicine and theranostic applications. University of Southern California, Dept. of Biomedical Engineering, Feb. 27, 2015

17. Molecular engineering for regenerative medicine and theranostic applications. Washington University in St. Louis, Dept. of Biomedical Engineering, Feb. 12, 2015

16. Molecular engineering for regenerative medicine and theranostic applications. Case Western Reserve University, Dept. of Chemical and Biomolecular Engineering, Dec. 11, 2014

Conferences

15. Targeting ADPKD using nanomedicine, Annual Southern California Kidney Symposium, USC, Dec. 4, 2020

14. Exploiting barriers of the body for targeted nanomedicine. Biomaterials for Drug Delivery, AIChE, 2020 San Francisco, CA Nov. 17, 2020

13. Exploiting peptides to overcome barriers in nanomedicine and drug delivery. Biology and Chemistry of Peptides. Gordon Research Conference, Ventura, CA, February 9-14, 2020

12. MMP-1 binding nanoparticles for inhibiting plaque rupture in atherosclerosis. BMES Cellular and Molecular Bioengineering Conference, Puerto Rico, Jan. 2-6, 2020

11. Peptide-based micelles for nanomedicine. IEEE NANOMED, Gwangju, South Korea, Nov. 21-24, 2019

10. Kidney-targeting nanoparticles for autosomal dominant polycystic kidney disease: Advances and lessons learned. Korea Joint Biomedical Engineering Workshop, Biomedical Engineering Society, Philadelphia, PA, Oct. 16-19, 2019

9. Kidney-targeting peptide amphiphile micelles toward renal drug delivery. ACS National Meeting, Division of Colloid and Surface Chemistry, Understanding Nano-Bio Interactions: Implications for Bio-Imaging, Diagnosis, and Treatment, Boston, MA, August 19-20, 2018

8. Targeting peptides for nanomedicine. Biology and Chemistry of Peptides. Gordon Research Conference, Ventura, CA, February 11-16, 2018

7. Toward theranostic peptide amphiphile micelles. 9th International Conference on Materials for Advanced Technologies (ICMAT), Materials Research Society, Singapore, June 19-23, 2017

6. Peptide amphiphile micelles for targeting glioblastoma. Society for Brain Mapping and Therapeutics. Los Angeles, CA, April 18-20, 2017

5. Designer micelles for molecular (thera) diagnostics. Young Investigator Session, Micro and Nanotechnology in Medicine (MNMC), Engineering in Medicine and Biology Society (EMBS), IEEE, Waikoloa, HI, Dec. 12-16, 2016

4. Targeting atherosclerosis using supramolecular micellar assemblies. Nanotechnology in Medicine, Engineering Conferences International, Hernstein, Austria, July 4, 2016

3. Self-assembled nanoparticles for medicine. Pint of Science, Prairie Moon, Evanston, IL. May 19, 2015

Industry

2. Peptide amphiphile micelles for kidney targeting. Chinook Therapeutics, Dec. 11, 2019

1. Molecular engineering for theranostic applications and regenerative medicine. 3M, St. Paul, MN, May 15, 2018

Contributed Meeting Presentations

(*presenting author*)

69. ***Chung, E.J.*** Development of kidney-targeting nanoparticles for ADPKD therapy. World Congress Biomaterials, virtual, December 11-15, 20202 (oral)

68. Wang, J.*, Chin, D.*, Poon, C.#, Mancino, V., Pham, J., Li, H., Ho, P., Hallows, K.R., **Chung, E.J.** Oral Delivery of Nanoparticles for Renal Disease. ASN Kidney Week, virtual, Oct. 23, 2020 (poster)

67. *Trac, N.**, Chen, L., Zhang, A., Liao, C., Poon, C.#, Ando, Y., Joo, J.^, Garri, C., Shen, K., Kani, K., Gross, M., **Chung, E.J.** CCR2-targeted micelles for anti-cancer peptide delivery and immune stimulation. BMES, virtual, Oct. 17, 2020 (oral)

66. ***Chung, E.J.*** Oral delivery of nanoparticles for polycystic kidney disease. Controlled Release Society, virtual, June 30-July 2, 2020 (oral)

65. *Chin, D.*,* Poon, C.#, Trac, N., Wang, J., Cook, J., Jiang, Z., Sulit Sta Maria, N., Jacobs, R, **Chung, E.J.** Collagenase-cleavable peptide amphiphile micelles as a novel theranostic strategy in atherosclerosis. USC Graduate Research Symposium, Feb. 5, 2020 (oral)

64. *Wang, J.*,* Chin, D*., Poon, C#., Mancino, V., Pham, J., Li, Hui, Ho, P., Hallows, K., **Chung, E.J.** Oral nanocapsule formulation for renal disease. USC Graduate Research Symposium, Feb. 5, 2020 (oral)

63. *Tripathy, N.#* and **Chung, E.J.** Transdermal delivery of kidney-targeting nanoparticles. Kidney Week, Washington, DC, November 5-10, 2019 (oral)

62. *Huang, Y.** and **Chung, E.J.** Nanoparticles for renal targeting in polycystic kidney disease. Kidney Week, Washington, DC, November 5-10, 2019 (poster)

61. *Chin, D.**, Mel de Fontenay, M.^, Pltokin, A., Magee, G., **Chung, E.J.** Development of a hydroxyapatite targeting peptide micelle nanoparticle for atherosclerosis. BMES, Pittsburgh, PA, October 16-19, 2019 (oral)

60. *Wang, J.**, Hallows, K., **Chung, E.J.** Oral nanoparticle formulation for renal disease. BMES, Pittsburgh, PA, October 16-19, 2019 (oral)

59. *Trac, N.** , Poon, C.# , Liao, C.P.^^, Wang, J.* , Shen, K., Kani, K., Gross, M.E., **Chung, E.J.** CCR2-targeted dual-peptide amphiphile micelles toward cancer immunotherapy. BMES, Pittsburgh, PA, October 16-19, 2019 (poster).

58. ***Chung, E.J.***, Rodriguez, R., Zhang, R., Yeh, J. Peptide-based nanohydrogels for urinary incontinence in women, Military Health System Research Symposium, Kissimmee, FL, August 19-22, 2019 (poster)

57. *Trac, N.** and **Chung, E.J.** Dual-peptide amphiphile micelles towards targeted cancer immunotherapy. Cancer Nanotechnology Gordon Research Conference, West Dover, VT, June 23-28, 2019 (poster)

56. *Chin, D.** and **Chung, E.J.** Development of a peptide micelle nanoparticle to target vascular calcification. Atherosclerosis Gordon Research Conference, Newry, MN, June 16-21, 2019 (poster)

55. ***Chung, E.J.*** A nanomedicine approach to polycystic kidney disease. NIH High Risk, High Reward Research Symposium. Bethesda, MD, June 5-7, 2019 (poster)

54. *Trac, N.**, Poon, C.#, Liao, C.P.^^, Wang, J.*, Shen, K., Kani, K., Gross, M.E., **Chung, E.J.** Dual-peptide amphiphile micelles for cancer immunotherapy. Grodins Graduate Research Symposium, USC, Los Angeles, CA, April 2019 (poster).

53. *Chin, D.**, Poon, C., Mel de Fontenay, M.^, Magee G., **Chung, E.J.** Development of a hydroxyapatite targeting peptide micelle nanoparticle for atherosclerosis. Grodins Graduate Research Symposium, USC, Los Angeles, CA, April 2019 (poster).

52. *Poon, C.*[#], Wang, J.[*], Chin, D.[*], Joo, J.[^], Ong, V.[^], Jiang, Z.[^], Cheng, K.[^], Chang, T.[^], **Chung, E.J.** Multifunctional peptide micelles for gene therapy in atherosclerosis. Society for Laboratory Automation and Screening. Washington D.C., February 2-6, 2019 (poster)

51. *Milkowski, S.* [^], Wang, J.[*], **Chung, E.J.** Design and in vivo characterization of kidney-targeting multimodal micelles for renal drug delivery. BMES, Undergraduate Research and Design I session, Atlanta, GA, Oct. 17-20, 2018 (podium)

50. *Wang, J.*[*] and **Chung, E.J.** Kidney-targeting nanoparticles for drug delivery in polycystic kidney disease. BMES, Atlanta, GA, Oct. 17-20. 2018 (poster)

49. *Chin, D.*[*], Chowdhuri, S.[^], **Chung, E.J.** Calcium detection for atherosclerosis using hydroxyapatite-binding micelles. BMES, Atlanta, GA, Oct. 17-20, 2018 (poster)

48. *Aruma, J.*[^], Yeh, J.[#], Zhang, R., **Chung, E.J.**, Rodriguez, L. Using HBPA hydrogel to control growth factor release and induce adipose stem cell differentiation in vitro. Biomedical Research Conference for Minority Students (ABRCMS). Indiana, IN, Nov. 14-17, 2018 (poster)

47. *Wang, J.*[*] and **Chung, E.J.** Kidney-targeting nanoparticles for drug delivery in polycystic kidney disease. American Society of Nephrology, Kidney Week. San Diego, CA, Oct. 23-28, 2018 (poster)

46. Wang, J.* and ***Chung, E.J.*** Kidney-targeting multimodal micelles for renal drug delivery. Micro and Nanotechnologies for Medicine: Emerging Frontiers and Applications. Los Angeles, CA, July 16-July 20, 2018 (poster)

45. Wang, J.[*], Milkowski, S.[^], Lu, V.[^^], Hallows, K., ***Chung, E.J.*** Kidney-targeting multimodal micelles toward polycystic kidney disease therapy. PKD Connect Conference, Kansas City, MO, June 29-July 1, 2018 (podium)

44. *Chowdhuri, S.*[^], Chin, D.*, and **Chung, E.J.** Diagnosis of calcium risk in atherosclerosis by peptide amphiphile micelles. Undergraduate Symposium for Scholarly and Creative Work, USC, Los Angeles, CA, April 11, 2018 (poster)

43. *Chin, D.**, Chowdhuri, S.[^], and **Chung, E.J.** In vitro detection of hydroxyapatite using peptide amphiphile micelles for atherosclerosis. Grodins Graduate Research Symposium, USC, Los Angeles, CA, April 13, 2018 (poster)

42. *Wang, J.**, Poon, C.[#], Chin, D.*, Milkowski, S.[^], Vu, L.[^^] and **Chung, E.J.** Kidney-targeting peptide amphiphile micelles for renal disease. Grodins Graduate Research Symposium, USC, Los Angeles, CA, April 13, 2018 (poster)

41. *Poon, C.*[#], Chowdhuri, S.[^], Kuo, C-H., Fang, Y., Alenghat, F.J., Hyatt, D., Kani, K., Gross, M.E., **Chung, E.J.** Protein mimetic and anticancer properties of monocyte-targeting peptide amphiphile micelles. Society for Biomaterials, Atlanta, GA, April 11-14, 2018 (podium)

40. *Wang, J.** and **Chung, E.J**. Design and *in vivo* characterization of kidney-targeting peptide amphiphile micelles toward renal drug delivery. Western Epithelial Biology Society, Avila Beach, CA. March 2-4, 2018 (podium)

39. *Bharadwaj, P.*[^], Khodabandhelou, K.[#], Luhar, M., and **Chung, E.J.** In vitro vascular model for atherosclerosis. BMES, Phoenix, AZ, October 11-14, 2017 (poster)

38. *Sarkar, M.*[^], Poon, C.[#], **Chung, E.J.** Multifunctional peptide micelle for monocyte targeting and gene therapy to reduce atherosclerosis. National Academy of Engineering (NAE) Grand Challenges, July 2017 (poster)

37. *Wang, J.** and **Chung, E.J.** Oral delivery of therapeutic peptide amphiphiles for polycystic kidney disease. Grodins Graduate Research Symposium, USC, Los Angeles, CA, April 14, 2017 (poster)

36. *Poon, C.*[#], Sarkar, M.^, **Chung, E.J.** Multifunctional peptide micelle for monocyte targeting and gene therapy to reduce atherosclerosis. Society for Biomaterials, Minneapolis, MN, April 4-8, 2017 (podium)

35. ***Chung, E.J.*** Targeting stage-specific disease markers using supramolecular micellar assemblies. Society for Laboratory Automation and Screening (SLAS) Conference, Washington, DC, Feb. 4-8, 2017 (poster)

34. Poon, C.[#], Park, D.Y., ***Chung, E.J.*** Designer micelles for molecular diagnostics. Micro and Nanotechnology in Medicine (MNMC), Engineering in Medicine and Biology Society (EMBS), IEEE, Waikoloa, HI, Dec. 12-16, 2016 (poster)

33. Yoo, S.P. Tirrell, M., ***Chung, E.J****.* The design of micelles for molecular diagnostics. AIChE, San Francisco, CA, Nov. 13-18,2016. (podium)

32. Yoo, S.P., Tirrell, M., ***Chung, E.J****.* Imaging and targeting efficacy of nanoparticles for atherosclerosis with varying gadolinium chelators. BMES, Minneapolis, MN, Oct 5-8, 2016. (podium)

31. ***Chung, E.J.***, Yoo, S.P., Tirrell, M. The design of gadolinium containing peptide amphiphile micelles for molecular MRI. World Biomaterials Congress, Montreal, Canada, May 17-22, 2016. (poster)

30. ***Chung, E.J.***, Yoo, S.P., Tirrell, M. Peptide amphiphile micelles as contrast agents for molecular MRI. Materials Research Society, Boston, MA, Nov. 29-Dec. 4, 2015. (podium)

29. ***Chung, E.J.***, Mlinar, L.B., Nord, K., Tirrell, M. Peptide amphiphile micelle-mediated molecular imaging of cardiovascular disease. BMES, Tampa, FL. Oct. 7-10, 2015. (poster)

28. Wu, C.Q., Huang, R.T., Leon, L., **Chung, E.J**., Reardon, C., Tirrell, M., *Fang, Y.* Modulation of miR92a-PPAP2B signaling axis in athero-susceptible endothelia employing targeting polyelectrolyte complex nanoparticles. American Heart Association Chicago Research Network Symposium, Chicago, IL. Sept. 18, 2015. (podium)

27. *Yoo, S.P.*, **Chung, E.J.**, Castle, C., Tirrell, M. Investigation of micelle shape on monocyte targeting. American Heart Association Chicago Research Network Symposium, Chicago, IL. Sept. 18, 2015. (poster)

26. ***Chung, E.J.***, Mlinar, L.B., Nord, K., Tirrell, M. Theranostic peptide amphiphile micelles for atherosclerosis. K to R01 Meeting, NHLBI, National Institutes of Health, Bethesda, MD. July 28-29, 2015. (poster)

25. ***Chung, E.J.***, Mlinar, L.B., Nord, K., Tirrell, M. Theranostic peptide amphiphile micelles for atherosclerosis. Biomaterials and Tissue Engineering, Gordon Research Conference, Girona, Spain. July 18-24, 2015. (poster)

24. ***Chung, E.J.***, Mlinar, L.B., Nord, K., Tirrell, M. Supramolecular micellar assemblies for molecular targeting of cardiovascular disease and cancer. AIChE, Atlanta, GA. Nov. 16-21, 2014. (podium)

23. ***Chung, E.J.***, Drews, L.B., Nord, K., Tirrell, M. Biomimetic, monocyte-targeting supramolecular micellar assemblies for atherosclerosis theranostics. BMES, San Antonio, TX. Oct. 22-25, 2014. (podium)

22. *Hyatt, D.*, **Chung, E.J.,** Tirrell, M., Alenghat, F.J. Monocyte and macrophage-directed peptide amphiphile micelles modulate cytoskeletal organization and target atherosclerosis. American Heart Association, Scientific Sessions, Chicago, IL. Nov. 15-19, 2014. (poster)

21. ***Chung, E.J.*** and Tirrell, M. Multimodal peptide amphiphile micelles for atherosclerosis. Chicago Biomedical Consortium Tech Day, Chicago, IL. June 16, 2014. (poster)

20. *Chung, E.J*., Mlinar, L.B., Nord, K., Sugimoto, M.J., Wonder, E., Zhang, C., Kuo, C.H., Andrade, J., Fang, Y., Huang, L., Alenghat, A.J., Tirrell, M. Peptide amphiphile micelles for the early detection atherosclerotic plaques. Arnsdorf Cardiovascular Research Day, Chicago, IL. April 25, 2014. (poster)

19. *Chung, E.J.*, Cheng, Y., Morshed, R., Nord, K., Han, Y., Wegscheid, M., Wainwright, D., Lesniak, M.S., Tirrell, M. Fibrin-binding, peptide amphiphile micelles for targeting glioblastoma. Society for Biomaterials, Denver, CO. April 16-19, 2014. (podium)

18. *Chung, E.J.*, Drews, L.B., Tirrell, M. The design of peptide amphiphile micelles for diagnostic applications in atherosclerosis. AIChE, San Francisco, CA. Nov. 3-8, 2013. (podium)

17. *Drews, L.B.*, Chung, E.J., Wonder, E., Tirrell, M. Investigation of self-assembled peptide amphiphile micelles for targeting early stage atherosclerotic plaques. AIChE, San Francisco, CA. Nov. 3-8, 2013. (podium)

16. *Chung, E.J.*, Drews, L.B., Tirrell, M. Peptide amphiphile micelles for early detection of vulnerable atherosclerotic plaques. American Heart Association Chicago Research Network Symposium, Chicago, IL. Sept. 20, 2013. (poster)

15. *Tirrell, M.*, **Chung, E.J.**, Ulery, B., Leon, L., Kade, M.J. Protein analogous micelles: Versatile, modular nanoparticles. ACS, Indianapolis, IN. Sept. 8-12, 2013. (podium)

14. *Chung, E.J.*, Drews, L.B., Tirrell, M. The investigation of peptide amphiphile micelles for detection of vulnerable atherosclerotic plaques. American Heart Association Basic Cardiovascular Sciences Scientific Sessions, Las Vegas, NV. July 22-25, 2013. (poster)

13. *Chung, E.J.*, Drews, L.B., Tirrell, M. Monocyte-targeting, peptide amphiphile micelles for the early detection of plaques in atherosclerosis. Arnsdorf Cardiovascular Research Day, Chicago, IL. May 31, 2013. (poster)

12. *Chung, E.J.*, Drews, L.B., and Tirrell, M. Monocyte-targeting, peptide micelles for the early detection of plaques in atherosclerosis. Materials Research Society, San Francisco, CA. April 1-5, 2013. (podium)

11. *Drews, L.B.*, **Chung, E.J.**, Tirrell, M. Targeting early stage atherosclerotic plaques using multi-component self-assembled peptide amphiphile micelles. Materials Research Society, San Francisco, CA. April 1-5, 2013. (podium(

10. *Chung, E.J.* and Shah, R.N. Self-assembling, collagen-hyaluronic acid membranes. Bioinspired Materials, Gordon Research Conference, Davidson, NC. June 24-29, 2012. (poster)

9. *Chung, E.J.*, Sugimoto, M., Koh, J., and Ameer, G.A. Investigation of a tri-component biodegradable scaffold for ACL tissue engineering. Orthopaedic Research Society, Long Beach, CA. Jan. 13-16, 2011. (poster)

8. *Chung, E.J.* and Ameer, G.A. Biomimetic citric acid-based nanocomposites for orthopaedic tissue engineering. International Conference of Composites/Nano Engineering, Anchorage, AK. July 4-10, 2010. (podium)

7. *Chung, E.J.* and Ameer, G.A. Investigation of citric acid-based calcium phosphate nanocomposites as an osteogenic biomaterial. Orthopaedic Research Society, New Orleans, LA. March 6-9, 2010. (poster)

6. *Chung, E.J.* and Ameer, G.A. Orthopaedic nanocomposites based on citric acid and calcium phosphates. Tissue Engineering and Regenerative Medicine International Society (TERMIS) World Congress, Seoul, South Korea. Aug. 31-Sept. 3, 2009. (poster)

5. *Chung, E.J.*, Qiu, H., Ameer, G.A. Tissue response to citric acid-based micro-/nanocomposites.

Orthopaedic Research Society, Las Vegas, NV. Feb. 22-25, 2009. (poster)

4. *Chung, E.J.* and Ameer, G.A. Biocomposite screws based on citric acid and hydroxyapatite. InNUvention Applied Research Day, Evanston, IL. 2009. (poster)

3. *Chung, E.J.*, Qiu, H., Kodali, P., Koh, J., Ameer, G.A. Mechanical property and biocompatibility of poly(diol citrate) micro- and nano-composites for bone tissue engineering. Society of Engineering Sciences, Urbana-Champaign, IL. Oct. 12-15, 2008. (podium)

2. *Chung, E.J.*, Zou, C., and Gao, Q. Centrobin, a potential therapeutic for cancer. InNUvention Applied Research Day, Evanston, IL. 2009. (poster)

1. *Chung, E.J.* and Wiley, E. Searching for the role of a class II histone deacetylase in *T. Thermophila*. Chapter Sigma Xi, Claremont, CA. 2005. (poster)

Teaching

Course Developer and Instructor, University of Southern California

Spring 2021	BME 459L: Introduction to Nanomedicine and Drug Delivery (with lab section) *Enrollment: 17 undergraduate students*
Spring 2020	BME 499: Practical Concepts and Methods in Nanomedicine *Enrollment: 5 undergraduate students*
Spring 2018, 20	BME 459: Introduction to Nanomedicine and Drug Delivery *Enrollment: 17-22 undergraduate students*
Fall 2016, 17, 18, 19	BME 559: Nanomedicine and Drug Delivery *Enrollment: 6-20 Masters and Ph.D. students*

Guest Lecturer

Fall 2015	University of Chicago, MENG 20000: Introduction to Emerging Technologies
Spring 2015	Northwestern University, CHEM_ENG 275-0: Molecular and Cell Biology for Engineers

High School Laboratory Program Developer and Instructor, University of Chicago

Spring 2014	"Collagen Hydrogels for Nerve Regeneration"

Teaching Assistant, Northwestern University

Fall 2010	BIOL SCI 315-0: Advanced Cell Biology
Spring 2010	BIOL SCI 219-0: Cell Biology

Research Supervision

Visiting Scholar

2019-20	Jeong-Ho Yun, Associate Professor, Dept. of Periodontology, College of Dentistry, Chonbuk National University, South Korea

Postdoctoral Fellows

2020-	Alysia Cox
2017-	Jihchao "Stanley" Yeh *Joint postdoc with Larissa Rodriguez, USC School of Medicine, Dept. of Urology*
2018-2020	Nirmalya Tripathy *Current Affiliation: Postdoc at Oregon State University*
2016-2019	Christopher Poon *Current Affiliation: Scientist at Emergent BioSolutions*

2016-2017 Khosrow Khodabandehlou

Ph.D. Students

Fall 2020- Neil Patel, Biomedical Engineering
Fall 2020- Siyoung Abby Lim, Biomedical Engineering
Summer 2019- Yi Huang, Biomedical Engineering
Passed screening exam June 2020
Fall 2018- Noah Trac, Biomedical Engineering
Passed screening exam June 2019
Fall 2017- Deborah Chin, Biomedical Engineering
Passed screening exam June 2018, passed candidacy exam Nov. 2020
Fall 2016- Jonathan Wang, Biomedical Engineering
Passed screening exam June 2017, passed candidacy exam June 2019
Fall 2016 Sahak Makryan, Biomedical Engineering (rotation student)
Current Affiliation: PhD student in Stacey Finley's lab

Masters Students

2019 Xuting Zhang, Translational Biotechnology
2017-2019 Yi Huang, Chemical Engineering
Current Affiliation: PhD student at USC Biomedical Engineering
Summer 2017 Lekshmi Pillai, Biomedical Engineering

Post-Bac Researcher

2020- Kane (Chun Yat) Ong, Biochemistry 19'

Undergraduate Researchers

2019- Colette O'Grady, Biomedical Engineering
2019- Woori Lee, Biological Sciences
2019- Kairui Jiang, Biomedical Engineering
2019- Madelynn, Biomedical Engineering
2019- Jackson Cook, Biomedical Engineering
2019-2020 Julia Lee, Chemical Engineering
2019-2020 Nick Enrique, Biomedical Engineering
2019-2020 Claire Conway, Biomedical Engineering
2019 Alexander Tseng, Biomedical Engineering
2018-2019 Margot Melafonte, Biomedical Engineering
2018-2019 Clarence Dureg, Biomedical Engineering
2018-2019 Victor Ong, Biomedical Engineering
Current Affiliation: PhD student at USC Biomedical Engineering
2018-2019 Kelly (Zhangjingyi) Jiang, Biomedical Engineering
Spring 2018 Taedong Ko, Accounting
Current Affiliation: Lotte Chemical
2017-2020 Kayley Cheng, Biomedical Engineering
Current Affiliation: Medtronic
2017-2020 Johan Joo, Biomedical Engineering
Current Affiliation: applying to medical school
Summer 2017 James "Trip" McComas, Biomedical Engineering
Summer 2017 Shivani Gupta, The College of New Jersey, Biomedical Engineering
Current Affiliation: Medical student at Rutgers New Jersey Medical School
2017-2019 Sarah Milkowski, Biomedical Engineering
Current Affiliation: Abbott Laboratories
2016-2018 Sampreeti Chowdhuri, Biomedical Engineering

Current Affiliation: Medical student at Kaiser Permanente School of Medicine

2016-2018 Timothy Chang, Biomedical Engineering
Current Affiliation: Dental student at Columbia University, College of Dentistry

2016-2017 Prajwal Bharadwaj, Biomedical Engineering

2016-2017 Manjima Sarkar, Biomedical Engineering
Current Affiliation: Master's student at the University of Oxford

High School Students

Summer 2020 YuChen Jason Lu

Summer 2020 Ethan Lee

Summer 2019 Elisa Kim
Current Affiliation: undergrad at Brown Biomedical Engineering

Summer 2019 Michelle Arrendondo
Current Affiliation: undergrad at USC Biomedical Engineering

Summer 2019 Joelle De Jesus
Current Affiliation: undergrad at USC Biomedical Engineering

Summer 2019 Kristofer Thomaso
Current Affiliation: undergrad at USC Biomedical Engineering

Summer 2019 Daniela Sotela
Current Affiliation: undergrad at USC Biomedical Engineering

Summer 2019 Jiwoo You

2019-2020 Jaya Hamkins

Summer 2018 Iris Hsu
Current Affiliation: undergrad at UC Berkeley Bioengineering

Summer 2018 Evan Kowal

2017-2018 Vivian Lu
Current Affiliation: undergrad at the University of Chicago

Teachers

Summer 2017 Riann Williams, 32nd Street School, 6th grade science teacher

Service to Professional Organizations

Grant Review Panel (Ad Hoc)

2017 National Science Foundation (NSF), Biological and Environmental Interactions of Nanoscale Interactions Study Section

2017 National Institutes of Health, Nanotechnology Study Section (NANO)

2017 Israel Science Foundation (ISF)

2016, 17, 18 American Heart Association (AHA), Bioengineering Study Section

Associate Editor

2019-Present Bioactive Materials

2019-Present Frontiers in Digital Health and Health Technologies

Editorial Boards

2019-Present IEEE Open Access Journal of Engineering in Medicine and Biology (OJEMB)

2017-Present Society for Laboratory Automation and Screening (SLAS) Technology

2016-Present Experimental Biology and Medicine

2014-2015 Journal of Cell Science and Therapy

Ad Hoc Editor

2020 Frontiers in Cardiovascular Medicine

2017 Proceedings of the National Academy of Sciences (PNAS)

Journal Reviewer

Nanomedicine and Drug Delivery: *Small, Drug Discovery Today, Nanomaterials, International Journal of Nanomedicine, Advanced Therapeutics, Journal of Biomedical Nanotechnology, Nanoscale Horizons, Anti-Cancer Agents in Medicinal Chemistry, Advanced Drug Delivery Reviews, ACS Nano, Advances in Clinical Chemistry, Theranostics, International Journal of Theranostics*

Materials: *Advanced Healthcare Materials, Tissue Engineering, Soft Matter, Acta Biomaterialia, ACS Biomaterials Science, Molecular Systems Design and Engineering, ACS Applied Materials and Interfaces, Macromolecules, Biomaterials Science*

Interdisciplinary: *PNAS, Scientific Reports, RSC Advances Life Sciences, Journal of Stem Cell Research & Therapy, Journal of Cell Research & Therapy, Experimental Biology and Medicine, Society for Laboratory Automation and Screening (SLAS) Technology, Journal of Biomedical Applications, Cellular and Molecular Bioengineering, Physical Biology, Science Advances, Nature Reviews Nephrology, Advanced Biosystems*

Conference Service

Biomedical Engineering Society (BMES)

2020	Abstract Reviewer, Rising Star Award, Cellular and Molecular and Bioengineering
2020	Panelist, Grant Writing Workshop, Cellular and Molecular and Bioengineering Conference, Puerto Rico
2020	Session Co-Chair, Multicellular Emerging Behavior, Cellular and Molecular and Bioengineering Conference, Puerto Rico
2019	Session Co-Chair, Targeted/Responsive Drug Delivery Systems, Philadelphia, PA
2018	Session Co-Chair, US-Korea Joint BME Workshop, Atlanta, GA
2017, 18, 19, 20	Abstract Reviewer
2017	Session Co-Chair, Organs-on-Chip Models, Phoenix, AZ
2017	Undergraduate Awards and Poster Reviewer, Phoenix, AZ

American Institute of Chemical Engineers (AIChE)

2020	Organizing Committee, Regenerative Engineering Conference, Virtual
2020	Session Co-Chair, Biomaterials in Industry and the Clinic
2018	Organizing Committee, Regenerative Engineering Symposium, Pittsburgh, PA
2018	Planning Committee, Women's Initiative Committee (WIC)
2018	Panelist, Women Undergraduate Workshop, Women's Initiative Committee (WIC)
2017, 18, 19	Session Co-Chair, Area Plenary: Leaders in Biomaterials

Society for Biomaterials (SFB)

2018, 19, 20, 21	Session Co-Chair, Supramolecular Nanomaterials for Drug Delivery, Imaging, and Immunoengineering
2017-	Abstract Reviewer
2017-2020	Forum Reporter, Drug Delivery Special Interest Group
2017	Session Co-Chair, Supramolecular Biomaterials for Biomedical Applications, Minnesota, MN
2016	Session Co-Chair, New Frontiers Symposium: Nanobiomaterials and Nanotechnology for Implants, Devices, and Theranostics, World Biomaterials Congress, Montreal, Canada

IEEE Nano/Molecular Medicine and Engineering (IEEE-Nanomed)

2019	Session Chair, Electrostatic Interactions and Considerations in Drug Delivery and Biomedical Applications, Gwangju, South Korea
2018	Session Chair, Peptides in Nanomedicine and Biomedical Applications, Waikiki Beach, HI

Pacific Chem

2021 Session Chair, Bioinspired Materials and Architectures for Cell, Tissue, and Regenerative Engineering, Waikiki, HI

American Society for Nephrology (ASN)

2017-18 Advisory Committee, Women in Nephrology

AAAS Annual Meeting

2014 Exhibition Organizer, "The role of model organisms in understanding disease and development," Family Science Days, Chicago, IL,

Society of Engineering Science

2011 Session Co-Chair, Mineralized Tissues and Implants, Evanston, IL

Other Professional Service

University of Chicago

2017 Panelist, STEM Faculty Panel, GRADUCon annual career conference

Association of Women in Science (AWIS)

2014 VP of Communications, Chicago Chapter
2010-2015 Science Writer, Chicago Chapter

White House, Office of Science and Technology Policy (OSTP)

2013-14 Judge, InnoCentive Program, "Identifying revolutionary platform technologies for advancing life sciences research"

NSF, Materials Genome Initiative

2013 Participant, Boston, MA

NIH, Office of Research on Women's Health

2009 Science Writer, Chicago, IL

Service to University of Southern California

University of Southern California

2020 USC Reopening Post-COVID-19 Task Force, BME Committee
2020 Faculty Panel with PhD Students on "Navigating research during COVID-19"
2020 Mentoring Awards Selection Committee
2019 Commencement Marshal
2019 Keynote Speaker, Explore Parent Lunch,
2018 Faculty Speaker, Tuesday Tea, Speaker Series for Residential Students, "A life and career in biomedical engineering"
2018 Reviewer, Zumberge Individual Grant
2018 Faculty Speaker, Research Horizons Symposium, Women in Science and Engineering (WiSE)
2017- Faculty Mentor, Ph.D. Advisory Committee, Women in Science and Engineering (WiSE)
2017 Faculty Panelist, "Beyond the Ph.D." conference, USC Career Center
2016 Faculty Speaker, STEM Bytes seminar, Women in Science and Engineering (WiSE)

Viterbi School of Engineering

2021 First Year Scholarship Selection
2020 Faculty Presenter, Viterbi Board of Councilors Meeting
2020 BME Faculty Roundtable for prospective students and parents

2016, 17, 18 BME Representative, Ph.D. Council
2017, 18 Faculty Panelist, “Applying to a Ph.D. Program”, Graduate and Professional Programs office
2017 Faculty Speaker, “Explore USC”, Biomedical Engineering breakout session
2016, 17 Faculty Advisor, Maseeh Entrepreneurship Prize Competition and Min Family Engineering Social Entrepreneurship Undergraduate Students Challenge
2016 Faculty Panelist, Mentoring Panel, Pursuing a Career in Academia
2016 Faculty Speaker, Ph.D. Preview Day, Women in Science and Engineering (WiSE)

Department of Biomedical Engineering

2017, 2020 BMES booth/Faculty Meet and Greet, Annual BMES Conference
2017, 18, 19-20 Faculty Search Committee
2019- Curriculum Committee
2017, 18, 20-21 Graduate Admissions Committee
2016, 17, 18, 19 Teaching Lab Design Committee
2016- Co-Organizer, Distinguished Speaker Seminar Series
2017, 18, 20 Ph.D. Graduate Student Screening Exam Committee
2017 Judge, Grodins Graduate Research Symposium
2016 Judge, End-of-Dissertation Award, Alfred Mann Institute for BME
2016 Representative, BME Advisory Board meeting

Screening Committees

2020 Tristan McPhail (Chemical Engineering)
2020 Justin Ong (Chemical Engineering)

Candidacy Committees

2020 Zachary Dunn (Chemical Engineering)
2020 Tristan McPhail (Chemical Engineering)
2020 Justin Ong (Chemical Engineering)
2020 Brock Plumier (Neuroscience)
2019 Jonathan Wang (Biomedical Engineering)
2018 Andrew Petersen (Biomedical Engineering)
Nathan Cho (Biomedical Engineering)
Hsiao-Chuan Liu (Biomedical Engineering)
2017 Nethika Ariyasinghe (Biomedical Engineering)
Bryant Thompson (Biomedical Engineering)
Elizabeth Seigler (Biomedical Engineering)
Alexa Hudnut (Biomedical Engineering)
2016 Shih Jye Tan (Biomedical Engineering)
Samantha McBirney (Biomedical Engineering)

Thesis Defense Committees

2018 Alexa Hudnut (Biomedical Engineering)
Bryant Thompson (Biomedical Engineering)

Outreach

2020 Women in Chemical Engineering WChE Webinar, USC
2020 preK-12 Webinar on Cell Biology and Coloring Book
2018- Program Developer and Leader, NanoDays, California Science Center
2017- Program Developer and Leader, “NanoPeek,” 32nd Street Middle School
2017 Invited Speaker and Presenter, “Biomaterials for Medicine and Everyday Life,” Women in STEAM, Mirman School

2017-	Summer High School Intensive in Next-Generation Engineering (SHINE) mentor
2016	Lab Tours and Presentation, STEM Spotlight for Compton middle school students
2016	Representative, “Careers in Biomedical Engineering,” Introduce a Girl to Engineering Day, Argonne National Laboratory
2015, 16	Program Developer and Leader, “Experiences in Molecular Engineering”, Parker High School, University of Chicago
2013, 14	Workshop Developer and Leader, “Biomaterials,” Expanding Your Horizons (middle school girls)
2013	Workshop Developer and Leader, Physics with a Bang!, University of Chicago
2009, 10, 11	Co-Chair, “Distinguished Role Models in Life Sciences”, Northwestern University

Professional Memberships

Korean-American Scientists and Engineers Association, 2018-
American Society of Nephrology (ASN), 2017-
Women in Nephrology, 2017-
Society for Laboratory Automation and Screening Conference (SLAS), 2016-
Engineering Medicine and Biology Society (EMBS IEEE), 2016-
Society for Biomaterials (SFB), 2014-
Biomedical Engineering Society (BMES), 2014-
American Institute of Chemical Engineers (AIChE), 2013-
American Heart Association (AHA), 2012-

Chung Lab Member Achievements

Postdoctoral Researchers

Christopher Poon

2019	Best Student Poster Award, SLAS Annual Conference, Washington, DC
2019	Tony B. Academic Travel Award, SLAS Annual Conference, Washington, DC
2018	USC Postdoctoral Scholar Training and Travel Award
2018	Tony B. Academic Travel Award, SLAS Annual Conference, San Diego, CA

Graduate Students

Siyoung Abby Lim

2020-2021	Andrew and Erna Viterbi Fellowship

Neil Patel

2020-2023	NSF Graduate Research Fellowship

Deborah Chin

2020	ARCS Foundation Scholar, Los Angeles Chapter
2020	North American Vascular Biology Organization-International Vascular Biology Meeting 2020 Poster Award (NAVBO-IVBM)
2020	USC Graduate Research Symposium, 3rd place in STEM oral talks
2019	BMES Career Development Award
2019	Grodins Research Symposium, Best Poster Award
2019-20	American Heart Association, Predoctoral Fellowship
2018	NextProf Workshop Scholarship and Attendee, Ann Arbor, MI
2018	Vasculata Travel Scholarship, St. Louis, MO

Jonathan Wang

2020 USC Graduate Research Symposium, 1st place in STEM oral talks
2019 Viterbi Undergraduate Research Mentoring Award
2018-21 Alfred E. Mann Innovation in Engineering Doctoral Fellowship
2016-17 USC Provost Ph.D. Fellowship
2017-18 Andrew and Erna Viterbi Fellowship

Undergraduate Students

Jackson Cook
2020 USC Provost Undergraduate Research Fellowship

Kerry (Kairui) Jiang
2020, 2021 USC Provost Undergraduate Research Fellowship

Claire Conway
2019-20 Genomics and Geology Undergraduate Research Experience (GGURE)
2019 USC Bridge Undergraduate Science (BUGS) Program Fellowship
2019 Society for Biomaterials, Drug Delivery Special Interest Group, Student Research Award

Margot Meldefontenay
2019 Best poster (first place), Undergraduate Symposium for Scholarly and Creative Work

Kayley Cheng
2019 Alfred E. Mann Institute Undergraduate Award for Academic Excellence in Biomedical Engineering

Sarah Milkowski
2019 Alfred E. Mann Institute Undergraduate Award for Outstanding Research in Biomedical Engineering
2018-19 Genomics and Geology Undergraduate Research Experience (GGURE)
2017 USC Women in Science and Engineering (WiSE) Undergraduate Research Experience Fellowship

Johan Joo
2020 Alfred E. Mann Institute Undergraduate Award for Outstanding Research in Biomedical Engineering
2019 Best poster (first place), Undergraduate Symposium for Scholarly and Creative Work
2017, 18-19 Genomics and Geology Undergraduate Research Experience (GGURE)

Kelly (Zhangjingyi) Jiang
2018 USC Bridge Undergraduate Science (BUGS) Program Fellowship
2018 Society for Biomaterials, Drug Delivery Special Interest Group, Student Research Award

Sampreeti Chowdhuri
2017,18 USC Women in Science and Engineering (WiSE) Undergraduate Research Experience Fellowship
2017, 18 USC Provost Undergraduate Research Fellowship

Timothy Chang
2017 Genomics and Geology Undergraduate Research Experience (GGURE)
2017 USC Provost Undergraduate Research Fellowship

Prajwal Bharadwaj
2017 Genomics and Geology Undergraduate Research Experience (GGURE)

Media Coverage

Awards

November 21st, 2019—IEEE New Innovator and BMES Rising Star
https://viterbischool.usc.edu/news/2019/11/eun-ji-chung-named-as-ieee-new-innovator-and-bmes-rising-star/

October 2nd, 2018—NIH New Innovator Award
https://directorsblog.nih.gov/2019/01/31/building-nanoparticles-for-kidney-disease/
https://www.nih.gov/news-events/news-releases/2018-nih-directors-awards-high-risk-high-reward-research-program-announced?utm_source=dlvr.it&utm_medium=twitter
https://commonfund.nih.gov/newinnovator/AwardRecipients?utm_source=twitter.com&utm_medium=social&utm_campaign=nihhighrisk
https://viterbischool.usc.edu/news/2018/10/eun-ji-chung-awarded-nih-new-innovator-award/
https://news.usc.edu/149828/usc-eun-ji-chung-andy-mcmahon-receive-prestigious-nih-grants/

April 19th, 2018—USC Mentoring Award, Undergraduate Students
https://bme.usc.edu/2018/04/eun-ji-chung-receives-2018-usc-mentoring-award/

August 7th, 2017—American Institute for Chemical Engineers (AIChE) 35 Under 35
https://www.aiche.org/resources/publications/cep/2017/august/aiche-r-35-under-35
https://www.aiche.org/chenected/2017/07/aiche-35-under-35-bioengineering?utm_campaign=coschedule&utm_source=twitter&utm_medium=ChEnected&utm_content=AIChE%2035%20Under%2035:%20Bioengineering
http://www.scrippscollege.edu/news/releases/alumnae/eun-ji-chung-06-named-35-under-35-in-bioengineering
https://viterbischool.usc.edu/news/2017/08/eun-ji-chung-receives-2017-aiche-35-35-award/

July 19th, 2017—Emerging Investigator in Biomaterials Science
http://pubs.rsc.org/en/content/articlehtml/2017/bm/c7bm90033c?page=search

Research

November 2020-Nanotherapeutic micelles: An 'Amazon package' to target cancer, Biospace
https://www.biospace.com/article/nanotherapeutic-micelles-an-amazon-package-to-target-cancer/?utm_campaign=Daily%20Article&utm_content=144855212&utm_medium=social&utm_source=twitter&hss_channel=tw-21793154

March 2020-Collagenase-cleavable nanoparticles, USC
https://viterbischool.usc.edu/news/2020/03/a-super-particle-to-help-stop-heart-attacks-and-strokes/

December 2019-Calcium-targeting nanoparticles, USC
https://viterbischool.usc.edu/news/2019/12/lighting-up-cardiovascular-problems-using-nanoparticles/

October 2018–Biomaterials for smooth muscle cell regeneration in urinary incontinence, USC Viterbi Magazine
https://magazine.viterbi.usc.edu/fall-2018/features/how-uscs-michelson-center-is-like-a-hollywood-buddy-movie/

Fall 2018—Kidney-targeting nanoparticles, USC
https://news.usc.edu/148242/nanoparticle-targets-kidney-disease-for-drug-delivery/
https://viterbischool.usc.edu/news/2018/08/this-tiny-particle-might-change-millions-of-lives/

2017—Gyros Technologies research highlight
https://cdn2.hubspot.net/hubfs/378579/1-PTI/emailers/Review%20Article/Micelles%20selectively%20target%20atherosclerosis%20plaques%20through%20peptide-based%20targeting.pdf?utm_campaign=Peptides&utm_medium=email&_hsenc=p2ANqtz-_70FPcMynmJpFch4WxuU5SwdYpn1_wUg2G9GBBLJjxWVe1twkhZIpU0ReJXZ13-

gl2cdgQYCTHYFwsTy_HABr4k9l5KQ&_hsmi=56807093&utm_content=56807282&utm_source=hs_email&hsCtaTracking=64ab994d-f16e-497e-b5c0-1c493d03ddbb%7C6838ded4-e537-412f-a1da-6e2a0f3ac09e

September 19th, 2017—Undergraduates present at BMES
https://viterbischool.usc.edu/news/2017/09/perseverance-pays-off/

February 1, 2017—Broad Innovation Award, USC
https://viterbischool.usc.edu/news/2017/02/living-biomaterial-world/
http://news.usc.edu/115948/viterbi-researcher-work-seeks-to-help-those-who-really-have-to-go/

Outreach
June 25, 20200—Cell Coloring and Activity Book for COVID-19 Relief Efforts
https://viterbischool.usc.edu/news/2020/06/top-nanomedicine-researcher-releases-cell-biology-coloring-book-for-kids/

October 19, 2018—Summer High School Intensive in Next-Generation Engineering (SHINE), USC
https://viterbipk12.usc.edu/2018/10/seeing-chemistry-solve-real-world-problems-inspires-high-school-students/

October 2, 2017—NanoPeek, USC
https://viterbischool.usc.edu/news/2017/10/peeking-science-world/
May 25, 2017—NanoPeek, USC
https://viterbipk12.usc.edu/2017/05/usc-viterbi-professors-partner-with-k-12-schools-throughout-the-southland/

March 15, 2017—Women in STEAM 2017, Mirman School
https://mirman.org/news-resources/newsroom/women-steam-2017-resounding-success

October 28, 2016—STEM Spotlight, USC
https://viterbi.usc.edu/news/news/2016/viterbi-vast-hosts.htm
http://comptonherald.com/students-dabble-biomedical-engineering-usc/

Lab Member Awards
March 6, 2019—Christopher Poon, Society for Laboratory Automation and Screening (SLAS) Conference, Best Student Poster Award
https://bme.usc.edu/2019/03/christopher-poon-wins-best-paper-at-slas-annual-conference/

November 14, 2018—Deborah Chin, American Heart Association Predoctoral Fellowship
https://bme.usc.edu/2018/11/deborah-chin-awarded-american-heart-association-predoctoral-fellowship/