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EDUCATION

PH.D. MECHANICAL ENGINEERING, May 2011

DISSERTATION: Closed-Loop Microfluidic Control for Probing Multicellular Dynamics

Carnegie Mellon University, Pittsburgh, PA

Advisers: Dr. Philip R. LeDuc, Dr. William C. Messner

M.S. MECHANICAL ENGINEERING, February 2001

Seoul National University, Seoul, Republic of Korea

Adviser: Dr. Kyungdoug Min

B.S. MECHANICAL AND AEROSPACE ENGINEERING, February 1999

*Seoul National University, Seoul, Republic of Korea***PROFESSIONAL APPOINTMENTS**

- 2018 – ADJUNCT PROFESSOR, Biomedical Engineering, College of Medicine, Yonsei University, Seoul, South Korea
- 2014 – RESEARCH FACULTY, Regenerative Engineering and Medicine, Atlanta, GA
- 2014 – RESEARCH FACULTY, Emory & Children’s Pediatric Research Center, Atlanta, GA
- 2014 – ADJUNCT PROFESSOR, Wallace H. Coulter Department of Biomedical Engineering at Georgia Tech and Emory University, Atlanta, GA
- 2013 – AFFILIATE FACULTY, Institute for Electronics and Nanotechnology at Georgia Tech, Atlanta, GA
- 2013 – AFFILIATE FACULTY, Parker H. Petit Institute for Bioengineering and Bioscience at Georgia Tech, Atlanta, GA
- 2013 – DIRECTOR, Laboratory of Multiscale Biosystems and Multifunctional Nanomaterials (www.mbm.n.gatech.edu) at Georgia Tech, Atlanta, GA
- 2013 – ASSISTANT PROFESSOR, George W. Woodruff School of Mechanical Engineering at Georgia Tech, Atlanta, GA
- 2011 – 13 POSTDOCTORAL ASSOCIATE, The Langer Laboratory, David H. Koch Institute for Integrative Cancer Research at MIT, Cambridge, MA
- 2003 – 07 SENIOR RESEARCHER, Digital R&D Center, Samsung Electronics Co., Ltd., Republic of Korea
- 2001 – 03 RESEARCHER, Hyundai-Kia R&D Center, KIA Motors Inc., Republic of Korea
- 2001 RESEARCHER, Hyundai-Kia R&D Center, Hyundai Motor Company, Republic of Korea

HONORS AND AWARDS

Young Investigator Award in Nanobiotechnology, Nano Research, 2018.

NIH Director’s New Innovator Award, National Institutes of Health, 2017.
 George W. Woodruff School Teaching Fellow, 2017
 NSF CAREER, CMMI Nanomanufacturing, National Science Foundation, 2017.
 National Scientist Development Grant Award, American Heart Association, 2015.
 Coins for Alzheimer’s Research Trust Award, 2015.
 Distinguished Panel Speaker, Annual Beckman Scholars and Young Investigators Symposium, 2014.
 Best Presentation Award, American Control Conference, 2010.
 Bennett Competition 2nd Place Award, Carnegie Mellon University, 2010.
 Dowd ICES Predoctoral Fellowship, Philip & Marsha Dowd Engineering Seed Fund, 2008.
 Dean’s Fellowship, Carnegie Mellon University, 2007.
 Army Commendation Gold Medal, Ministry of National Defense, Republic of Korea, 2002.
 BrainKorea21 Project Scholarship, Ministry of National Education, Republic of Korea, 1999.

PEER-REVIEWED JOURNAL ARTICLES

1. Toth MJ, Kawahara T, and **Kim Y**, High-precision microfluidic pressure control through modulation of dual fluidic resistances. *International Journal of Dynamics and Control*. Accepted. In press.
2. Ahn SI*, Park HJ*, Yom J, Kim T, and **Kim Y**, High-density lipoprotein-mimetic nanotherapeutics for cardiovascular and neurovascular diseases (2018) *Nano Research*. Accepted. In press.
3. Ahn J, Ko J, Lee S, Yu J, **Kim Y**, and Jeon NL, Microfluidics in Nanoparticle Drug Delivery; From Synthesis to Pre-clinical Screening (2018) *Advanced Drug Delivery Review*. Accepted. In press.
4. Sei YJ, Ahn J, Kim T, Shin EJ, Santiago-Lopez AJ, Jang SS, Jeon NL, Jang Y, and **Kim Y**, Detecting the functional complexities between high-density lipoprotein mimetics (2018) *Biomaterials* 170:58-69. Selected as Leading Opinion.
5. Ahn JH, Sei YJ, Jeon NL*, and **Kim Y***, Probing the effect of bioinspired nanomaterials on angiogenic sprouting using a microengineered vascular system (2018) *IEEE Transactions on Nanotechnology; in Special Issue “Micro/Nanosystems Mechanobiology”* 17 (3): 393-397.
6. Lee Y, Thi PL, Seon GM, Ryu SB, Brophy CM, **Kim Y**, Park JC, Park KD, Cheung-Flynn J, and Sung HJ, Heparin-Functionalized Polymer Graft Surface Eluting MK2 Inhibitory Peptide to Improve Hemocompatibility and Anti-Neointimal Activity (2017) *Journal of Controlled Release* 266 (28): 321-330.
7. Sei YJ, Ahn SI, Virtue T, Kim T, and **Kim Y**, Detection of frequency-dependent endothelial response to oscillatory shear stress using a microfluidic transcultural monitor (2017) *Scientific Reports* 7:10019.
8. Toth MJ, Kim T, and **Kim Y**, Robust manufacturing of lipid-polymer nanoparticles through feedback control of parallelized swirling microvortices (2017) *Lab on a Chip* 17: 2805-2813.
9. Ahn JH, Sei YJ, Jeon NL, and **Kim Y**, Tumor microenvironment on a chip: the progress and future perspective (2017) *Bioengineering* 4 (3): 64.
10. Lee Chung B*, Toth MJ*, Kamaly N, Sei YJ, Becraft J, Mulder W, Fayad Z, Farokhzad OC, **Kim Y***, and Langer R*, Nanomedicine for endothelial disorders (2015) *Nano Today* 10 (6): 759-776.
11. Hazar M, **Kim Y**, Song J, Davidson LA, LeDuc PR, and Messner WC, 3D bio-etching of a complex composite-like embryonic tissue (2015) *Lab on a Chip* 15: 3293-3299.
12. Water JJ, **Kim Y**, Maltesen M, Franzyk H, Foged C, and Nielsen HM, Hyaluronic acid-based nanogels produced by microfluidics-facilitated self-assembly improves the safety profile of the cationic host defense peptide novicidin (2015) *Pharmaceutical Research* 32 (8): 2727-2735.

13. Sanchez-Gaytan B, Fay F, Lobatto M, Tang J, Ouimet M, **Kim Y**, van der Staay S, van Rijs S, Priem B, Zhang L, Fisher E, Moore K, Langer R, Fayad Z, Mulder W, HDL-mimetic PLGA nanoparticle for the targeting of atherosclerosis plaque macrophages (2015) *Bioconjugate Chemistry* 26 (3): 443-451.
14. Song J, Shawky J, **Kim Y**, Hazar M, LeDuc PR, Sitti M, and Davidson LA, Controlled surface topography regulates collective 3D migration by epithelial-mesenchymal composite embryonic tissues (2015) *Biomaterials* 58: 1-9.
15. Hovell CM*, Sei YJ*, and **Kim Y**, Microengineered vascular systems for drug development (2015) *Journal of Laboratory Automation* 20: 251-258.
16. Sei YJ*, Justus K*, LeDuc PR, and **Kim Y**, Engineering living systems on chip: from cells to human on chips (2014) *Microfluidics and Nanofluidics* 16 (5): 907-920.
17. **Kim Y**, Hazar M, Vijayraghavan D, Song J, Jackson TR, Joshi SD, Messner WC, Davidson LA, and LeDuc PR, Mechanochemical actuators of embryonic epithelial contractility (2014) *Proceedings of the National Academy of Sciences (PNAS)* 111 (40): 14366-14371.
18. **Kim Y***, Lobatto ME*, Kawahara T, Lee Chung B, Mieszawska AJ, Sanchez-Gaytan BL, Fay F, Senders M, Calcagno C, Becraft J, Saung MT, Gordon RE, Ma M, Farokhzad OC, Fayad ZA, Mulder WJM, and Langer R, Probing nanoparticle translocation across the permeable endothelium in experimental atherosclerosis (2014) *Proceedings of the National Academy of Sciences (PNAS)* 111 (3): 1078-1083.
19. **Kim Y***, Fay F*, Cormode DP, Sanchez-Gaytan BL, Tang J, Hennessy E, Ma M, Moore KJ, Farokhzad OC, Fisher EA, Mulder WJM, Langer R, and Fayad ZA, Single-step reconstitution of multifunctional high-density lipoprotein-derived nanomaterials using microfluidics (2013) *ACS Nano* 7 (11): 9975-9983.
20. Mieszawska AJ, **Kim Y**, Gianella A, van Rooy I, Priem B, Labarre MP, Ozcan C, Cormode DP, Petrov A, Langer R, Farokhzad OC, Fayad ZA, and Mulder WJM, Synthesis of polymer-lipid nanoparticles for image guided delivery of dual modality therapy (2013) *Bioconjugate Chemistry* 24 (9): 1429-1434.
21. Cheng CM, Yang CY, **Kim Y**, and LeDuc PR, Probing the dynamic responses of individual actin filaments under fluidic mechanical stimulation via microfluidics (2013) *Applied Physics Letters* 102: 193704.
22. **Kim Y**, LeDuc PR, and Messner WC, Modeling and control of a nonlinear mechanism for high performance microfluidic systems (2013) *IEEE Transactions on Control Systems Technology* 21 (1): 203-211.
23. **Kim Y**, Lee Chung B, Ma M, Mulder WJM, Fayad ZA, Farokhzad OC, and Langer R, Mass production and size control of lipid-polymer hybrid nanoparticles through controlled microvortices (2012) *Nano Letters* 12 (7): 3587-3591.
24. **Kim Y**, Messner WC, and LeDuc PR, Disruptive microfluidics: from life sciences to world health to energy (2012) *Disruptive Science and Technology* 1 (1): 41-53.
25. **Kim Y**, Joshi SD, Davidson LA, LeDuc PR, and Messner WC, Dynamic control of 3D chemical profiles with a single 2D microfluidic platform (2011) *Lab on a Chip*, 11(13), 2182-2188.
26. Wilson ME, Kota N, **Kim Y**, Stolz DB, Wang Y, LeDuc PR, and Ozdoganlar OB, Fabrication of circular microfluidic channels by combining mechanical micromilling and soft lithography (2011) *Lab on a Chip* 11 (8): 1550-1555.
27. Kang J, Steward R, **Kim Y**, Schewartz R, LeDuc PR, and Puskar K, Response of an actin filament

- network model under cyclic stretching through a coarse grained Monte Carlo approach (2011) *Journal of Theoretical Biology* 274 (1): 109-119.
28. **Kim Y***, Joshi SD*, Messner WC, LeDuc PR, and Davidson LA, Detection of dynamic spatiotemporal response to periodic chemical stimulation in a *Xenopus* embryonic tissue (2011) *PLoS ONE* 6 (1): e14624. (* equally contributed)
 29. **Kim Y**, Pekkan K, Messner WC, and LeDuc PR, Three-dimensional chemical profile manipulation using two-dimensional autonomous microfluidic control (2010) *Journal of the American Chemical Society* 132 (4): 1339-1347.
 30. **Kim Y**, Kuczynski B, LeDuc PR, and Messner WC, Modulation of fluidic resistance and capacitance for long-term high-speed feedback control of a microfluidic interface (2009) *Lab on a Chip* 9 (17): 2603-2609.
 31. Cheng CM, **Kim Y**, Yang JM, Leuba SH, and LeDuc PR, Dynamics of individual polymers using microfluidic based microcurvilinear flow (2009) *Lab on a Chip* 9 (16): 2339-2347.

BOOK CHAPTERS

1. Lee Y, Ahn SI, and **Kim Y**, Organs-on-chips (2017) *the Encyclopedia of Biomedical Engineering*. Invited Book Chapter (Elsevier). In press.
2. Santiago-Lopez A, Hovell CM, Lee HJ, and **Kim Y**, Neuroregeneration: Disease Modeling and Therapeutic Strategies for Alzheimer's and Parkinson's Disease (2015) *Frontiers in Biomedical Engineering: Convergence Technology* 293-325.
3. **Kim Y** and Langer R, Microfluidics in nanomedicine (2015) *Reviews in Cell Biology and Molecular Medicine* 1:127-152.

REFERRED CONFERENCE PROCEEDINGS AND PRESENTATIONS

1. Lee Y, Thi PL, Seon GM, Brophy CM, **Kim Y**, Park JC, Park KD, Cheung-Flynn J, and Sung HJ, Heparin-functionalized polymer graft surface eluting MK2 inhibitory peptide for vascular graft applications, Annual Meeting of the Society for Biomaterials (SFB), 2018.
2. Lee Y, Ahn SI, Yom J, Shin E, Choi J, Jang YC, and **Kim Y**, Reconstituting microvascularized muscle satellite cell niche on a chip, Annual Meeting of the Society for Biomaterials (SFB), 2018.
3. Sei YJ, Ahn J, Shin E, Santiago-Lopez AJ, Jeon NL, Jang YC, and **Kim Y**, Therapeutic and diagnostic applications of HDL-mimetic nanoparticles engineered in microfluidics, Annual Meeting of the Society for Biomaterials (SFB), 2018.
4. Sei YJ, Ahn SI, Virtue T, Kim T, and **Kim Y**, On chip reconstitution of atherogenic microenvironment reveals frequency-dependent endothelial response, Annual Meeting of the Society for Biomaterials (SFB), 2018.
5. Ahn SI, Yom JW, Sei YJ, and **Kim Y**, Recapitulating the 3D microenvironment of the human neural microinterface with the blood brain barrier, Annual Meeting of the Society for Biomaterials (SFB), 2018.
6. Sei YJ, Ahn SI, Virtue T, and **Kim Y**, Microfluidic transcellular monitor for probing the frequency response of the vascular endothelium to oscillatory shear stress, MicroTAS, 2017. (*Poster Presentation*)
7. Ahn J, Sei YJ, Jeon NL, and **Kim Y**, Probing the effect of HDL-mimetic nanoparticles on

- angiogenesis using microengineered vascular mimicry, MicroTAS, 2017. (*Podium Presentation*)
8. Toth MJ, and **Kim Y**, Parallelized microfluidics for large-scale synthesis of multicomponent nanoparticles, MicroTAS, 2017. (*Podium Presentation*)
 9. Ahn J, Sei YJ, Jeon NL, and **Kim Y**, Conditional regulation of inflammation-driven angiogenesis using engineered HDL-mimetic nanoparticles, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2017. (*Poster Presentation*)
 10. Kim T, Sei YJ, Jang SS, and **Kim Y**, Prediction and validation of engineered high-density lipoprotein-mimetic nanoparticle formulations for multifunctional drug carrier development, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2017. (*Podium Presentation*)
 11. Sei YJ, Ahn SI, Virtue T, and **Kim Y**, Detecting the endothelial conditional response to oscillatory shear stress, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2017. (*Podium Presentation*)
 12. Ahn SI, Yom JW, Hovell CM, and **Kim Y**, Microengineering of vascularized 3D glial network for the development of a neurovascular unit, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2017. (*Podium Presentation*)
 13. Jee SE, **Kim Y**, and Jang SS, Binding of apolipoprotein-based nanoparticles to amyloid beta and the effect of amyloid beta misfolding for the treatment of Alzheimer's disease: a molecular simulation study, 252nd American Chemical Society (ACS) National Meeting and Exposition, 2016. (*Poster Presentation*)
 14. Santiago-Lopez AJ, Sei YJ, and **Kim Y**, Probing biomolecular interactions of high-density lipoprotein mimetic nanomaterials with amyloid-beta peptide for the treatment of Alzheimer's disease, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2016. (*Podium Presentation*)
 15. Toth MJ, and **Kim Y**, Parallelized microfluidics for large-scale synthesis of multicomponent nanoparticles, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2016. (*Podium Presentation*)
 16. Hovell CM, Sei YJ, Ahn SI, Weiler C, Yom J, Barabino G, Taite L, and **Kim Y**, Comprehensive investigation of endothelial specializations for physiologically relevant BBB models, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2016. (*Podium Presentation*)
 17. Hovell CM, Toth MJ, and **Kim Y**, Selective customization of preformed multicomponent nanoparticles using microvortices, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2016. (*Poster Presentation*)
 18. Sei YJ, Sula E, and **Kim Y**, Microfluidic transcellular monitoring of cell-nanomaterial interaction for translational nanomedicine, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2016. (*Poster Presentation*)
 19. Sei YJ and **Kim Y**, Propagating microvortices to engineer drug loaded high-density lipoprotein mimetic nanomaterials, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2016. (*Poster Presentation*)
 20. Toy R, Pradhan P, DiPaolo N, Ramesh V, Sei YJ, **Kim Y**, Shayakhmetov D, and Roy K, Simple chemical modification reduces acute systemic toxicity and improves tissue penetration of polysaccharide nanoparticles, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2016. (*Poster Presentation*)
 21. Hovell CM, Sei YJ, Weiler C, Barabino G, Taite L, and **Kim Y**, Microfluidic hydrogel system provides improved in vitro platform for blood brain barrier studies, ASME NanoEngineering for

- Medicine and Biology Conference (NEMB), 2016. (*Podium Presentation*)
22. Toth M and **Kim Y**, Large-Scale Nanoparticle Synthesis through High Precision Feedback Control of Parallelized Microfluidic Reactors, ASME NanoEngineering for Medicine and Biology Conference (NEMB), 2016. (*Podium Presentation*)
 23. Stone N, Santiago-Lopez A, and **Kim Y**, Multimodal measurement of electrical signals in neuronal network, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2015. (*Poster Presentation*)
 24. Santiago-Lopez A, Stone N, Lee H, and **Kim Y**, Collagen-graphene film patterning for spatial control of neuronal networks, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2015. (*Poster Presentation*)
 25. Hovell CM, Barabino G, Taite L, and **Kim Y**, Engineering hybrid biomaterials for in vitro blood brain barrier model development, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2015. (*Poster Presentation*)
 26. Sei YJ and **Kim Y**, Advanced reconstitution of HDL using a series of microvortices, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2015. (*Poster Presentation*)
 27. Toth M and **Kim Y**, Parallelization of microfluidic mixers for large-scale production of lipid-polymer nanoparticles, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2015. (*Poster Presentation*)
 28. Santiago-Lopez A, Sei YJ, and **Kim Y**, Microfluidic reconstitution of HDL-apoE for CNS therapeutics, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2015. (*Podium Presentation*)
 29. Hazar M, **Kim Y**, Davidson LA, LeDuc PR, and Messner WC, Probing a complex 3D embryonic tissue through novel spatiotemporally controlled Bio-Etching, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2015. (*Podium Presentation*)
 30. Song J, Shawky J, **Kim Y**, Hazar M, Sitti M, LeDuc PR, and Davidson LA, Collective 3D migration of embryonic epithelial mesenchymal composite tissues are regulated by surface topology, Biophysical Society 59th Annual Meeting. 2015. (*Poster Presentation*)
 31. Hazar M, **Kim Y**, Song J, Messner WC, Davidson LA, and LeDuc PR, Probing dynamic reassembly of chemically-etched 3D embryonic tissue. Biophysical Society 59th Annual Meeting. 2015. (*Poster Presentation*)
 32. Sei Y and **Kim Y**, Engineering microchip modules for monitoring vascular permeability, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2014. (*Poster Presentation*)
 33. Hovell, Barabino G, Taite L, and **Kim Y**, A novel in vitro blood brain barrier platform for preliminary drug studies, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2014. (*Poster Presentation*)
 34. Kim S, Toth M, Bao G, Giddens D, and **Kim Y**, Micro and Millifluidic Platforms for Scalable Production of Multifunctional Nanoparticles, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2014. (*Poster Presentation*)
 35. Hazar M, **Kim Y**, Davidson LA, Messner WC, and LeDuc PR, Probing collective migration of a complex multi-cellular embryonic tissue through novel 3D bioetching, World Congress of Biomechanics (WCB), 2014. (*Poster Presentation*)
 36. Sei Y and **Kim Y**, Dynamic Control of Vascular Endothelial Permeability in a Microvessel-on-a-Chip, the 7th World Congress of Biomechanics (WCB), 2014. (*Poster Presentation*)

37. Hovell C, Barabino G, **Kim Y**, and Taite L, A Novel In Vitro Blood Brain Barrier Platform, the 7th World Congress of Biomechanics (WCB), 2014. (*Poster Presentation*)
38. Hazar M, **Kim Y**, LeDuc PR, Davidson LA and Messner WC, Probing collective migration of a complex tissue through novel 3D tissue etching, BMES Cellular & Molecular Bioengineering (CMBE) Conference, 2014. (*Poster Presentation*)
39. Song J, Shawky J, **Kim Y**, Hazar M, Sitti M, Davidson LA, and LeDuc PR, 3D Integrated multicellular embryonic response to topological control, Materials Research Society (MRS) Fall Meeting & Exhibit, 2013. (*Poster Presentation*)
40. Hazar M, **Kim Y**, Davidson LA, LeDuc PR, and Messner WC, Controlling embryonic cell sheet migration using microfluidics, Society of Engineering Science 50th Annual Technical Meeting (ASME-AMD Summer meeting), 2013. (*Poster Presentation*)
41. Hazar M, **Kim Y**, Messner WC, LeDuc PR, and Davidson LA, Collective migration of a complex tissue studied with 3D tissue etching, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2013. (*Podium Presentation*)
42. **Kim Y**, Fay F, Cormode DP, Sanchez BL, Tang J, Fisher EA, Fayad ZA, Mulder WJM, Farokhzad OC, and Langer R, Microfluidic reconstitution of multimodal high-density lipoprotein-derived nanomaterials, Annual Fall Meeting of Biomedical Engineering Society (BMES), 2013. (*Podium Presentation*)
43. Sanchez BL, Lobatto ME, Tang J, Fay F, Ozcan C, **Kim Y**, Farokhzad OC, Fisher EA, Langer R, Fayad ZA, and Mulder WJM, A multifunctional lipoprotein/polymer hybrid nanoparticle for controlled drug delivery to atherosclerotic plaques, World Molecular Imaging Congress, 2013. (*Podium Presentation*)
44. Fay F, **Kim Y**, Cormode DP, Sanchez BL, Tang J, Langer R, Farokhzad OC, Fisher EA, Fayad ZA, and Mulder WJM, A modular method to synthesize multimodal high-density lipoprotein-derived nanoparticle contrast agents using microfluidics, World Molecular Imaging Congress, 2013. (*Podium Presentation*)
45. Song J, **Kim Y**, Hazar M, LeDuc PR, Davidson LA, and Sitti M, Topological control of cell sheet migration by the 3D microenvironment, Biophysical Society 57th Annual Meeting. 2013. (*Poster Presentation*)
46. Hazar M, **Kim Y**, Song J, Davidson LA, Messner WC, and LeDuc PR, Analyzing the early tissue mechanical response to chemokine signaling using microfluidics, Biophysical Society 57th Annual Meeting. 2013. (*Poster Presentation*)
47. **Kim Y**, Lee Chung B, Ma M, Mulder WJM, Fayad ZA, Farokhzad OC, and Langer R, Large-scale production and size control of lipid-polymer hybrid nanoparticles in microfluidics, *Annual Fall Meeting of Biomedical Engineering Society (BMES)*, 2012. (*Podium Presentation*)
48. Mieszawska AJ, **Kim Y**, Sanchez-Gaytan B, Farokhzad OC, Langer R, Fayad ZA, and Mulder WJM, Theranostic lipid-polymer hybrid nanoparticles for image guided delivery of dual modality cancer therapy, *World Molecular Imaging Congress*, 2012. (*Podium Presentation*)
49. Hazar M, **Kim Y**, Song J, LeDuc PR, Messner WC, and Davidson LA, Controlling embryonic cell sheet migration using microfluidics, *AIChE Annual Meeting*, 2012. (*Podium Presentation*)
50. Song J, **Kim Y**, Hazar M, Davidson LA, Sitti M, and LeDuc PR, Controlling Localized Xenopus Embryonic Tissue Migration in 3D Microenvironment, *AIChE Annual Meeting*, 2012. Podium Presentation. (*Podium Presentation*)
51. Hazar M, **Kim Y**, Song J, Davidson LA, Messner WC, and LeDuc PR, Controlling embryonic cell

- sheet migration using microfluidics, *Annual Fall Meeting of Biomedical Engineering Society (BMES)*, 2012. (Podium Presentation)
52. Song J, **Kim Y**, Hazar M, Davidson LA, Sitti M, and LeDuc PR, Controlling Localized Xenopus Embryonic Tissue Migration in 3D Microenvironment, *Annual Fall Meeting of Biomedical Engineering Society (BMES)*, 2012. (Poster Presentation)
 53. **Kim Y**, Davidson LA, Messner WC, and LeDuc PR, Mechanochemical control of epithelial contractility in a Xenopus embryonic tissue, *Annual Fall Meeting of Biomedical Engineering Society (BMES)*, 2012. (Podium Presentation)
 54. Hazar M, **Kim Y**, Song J, LeDuc PR, Davidson LA, and Messner WC, Controlling embryonic cell sheet migration using microfluidics, *14th International Congress of Biorheology and the 7th International Conference of Clinical Hemorheology*, 2012. (Podium Presentation)
 55. Hazar M, **Kim Y**, Song J, LeDuc PR, and Davidson LA, Controlling embryonic cell sheet migration using microfluidics, *Biophysical Society 56th Annual Meeting*, 2012. *Biophysical Journal* 102 (3), 417a. (Podium Presentation)
 56. Kang J, Steward S, **Kim Y**, LeDuc PR, Puskar KM, and Schewartz R, Coarse-grained modeling of actin cytoskeletal alignment to mechanical stimulation, *The Fifth q-bio Conference on Cellular Information Processing*, 2011. (Poster Presentation)
 57. Kang J, Steward S, **Kim Y**, LeDuc PR, Puskar K, and Schewartz R, Examining cell mechanics and structure through a minimal coarse-grained Monte Carlo model, *Annual Fall Meeting of Biomedical Engineering Society (BMES)*, 2011. (Podium Presentation)
 58. **Kim Y**, LeDuc PR, Messner WC, and Davidson LA, Probing the morphogenetic response of a Xenopus tissue to dynamic stimulation of extracellular ATP, *Annual Fall Meeting of Biomedical Engineering Society (BMES)*, 2011. (Podium Presentation in the track of *New Frontiers in Biomedical Engineering*)
 59. Kang J, Steward S, **Kim Y**, Schewartz R, LeDuc PR, and Puskar K, A coarse grained Monte Carlo model of cytoskeletal actin filament alignment under cyclic stretch, *Biophysical Society 55th Annual Meeting*, 2011. (Podium Presentation)
 60. **Kim Y**, Joshi SD, Messner WC, LeDuc PR, and Davidson LA, Detection of predictive dynamics of glucocorticoid receptors in Xenopus laevis embryonic tissues, *Biophysical Society 55th Annual Meeting*, 2011. (Podium Presentation in the Platform Session of *Regulatory Network and Systems Biology*)
 61. **Kim Y**, LeDuc PR, and Messner WC, Microvortex-induced 3D profile manipulation using 2D autonomous microfluidic control, *ASME International Mechanical Engineering Congress and Exposition (IMECE)*, 2010. (Podium Presentation)
 62. Wilson ME, Kota N, **Kim Y**, Stolz DB, Wang Y, Ozdoganlar OB, and P. R. LeDuc, Micromilling for fabricating biologically inspired microfluidic channels for regenerative medicine, *Annual Fall Meeting of Biomedical Engineering Society (BMES)*, 2010.
 63. **Kim Y**, Joshi SD, Davidson LA, Messner WC, and LeDuc PR, Frequency response detection and prediction of first-order spatiotemporal dynamics in a Xenopus embryonic tissue using microfluidics, *Annual Fall Meeting of Biomedical Engineering Society (BMES)*, 2010. (Podium Presentation)
 64. **Kim Y**, LeDuc PR, and Messner WC, Nonlinear modeling for interface control in a three lane microfluidic system, *ASME Dynamic Systems and Control Conference (DSCC)*, 2010. *Invited Session (Podium Presentation)*

65. Kang J, Steward S, **Kim Y**, Schewartz R, Puskar K, and LeDuc PR, Response of an actin filament network model under cyclic stretching through a coarse grained Monte Carlo approach, *ASME Summer Bioengineering Conference (SBC)*, 2010.
66. **Kim Y**, Joshi SD, LeDuc PR, Davidson LA, and Messner WC, Probing multicellular dynamics in *Xenopus laevis* embryonic development using a mechanical engineering based microfluidic feedback approach, *ASME Summer Bioengineering Conference (SBC)*, 2010. (*Podium Presentation*)
67. **Kim Y**, LeDuc PR, and Messner WC, Nonlinear modeling and control of a mechanically coupled variable resistance and squeeze pump for pressure regulation in microfluidics, *American Control Conference (ACC)*, 2010. Proceedings 4199-4204, 2010. (*Podium Presentation*) This talk was selected as the Best Presentation in Session Award at 2010 ACC by the Operating and the Program Committees.
68. **Kim Y**, Joshi SD, Messner WC, Davidson LA, and LeDuc PR, Emerging cell behavior through fluid mechanics to control chemical input, 16th National Congress of Theoretical and Applied Mechanics, 2010. (*Podium Presentation*)
69. **Kim Y**, Joshi SD, LeDuc PR, Messner WC, and Davidson LA, Probing multicellular dynamics in *Xenopus laevis* embryonic development through microfluidic feedback control, *Biophysical Society 54th Annual Meeting*, 2010. (*Podium Presentation in the Platform Session of Regulatory Network and Systems Biology*)
70. **Kim Y**, Joshi SD, Davidson LA, Messner WC, and LeDuc PR, Probing spatiotemporal dynamics in the integrated multi-cellular environment of *Xenopus laevis*: embryonic development regulated through a microfluidic feedback approach, *Annual Fall Meeting of Biomedical Engineering Society (BMES)*, 2009. (*Poster Presentation*)
71. **Kim Y**, Kuczenski B, Messner WC, and LeDuc PR, Feedback approach for controlling fluid interfaces to probe cell responses with microfluidics, *Annual Fall Meeting of Biomedical Engineering Society (BMES)*, 2008. (*Poster Presentation*)
72. **Kim Y**, Kuczenski B, LeDuc PR, and Messner WC, Pressure modulation using fluidic resistance and capacitance for fluid interface control in microfluidic networks, *International Conference of Mechanics in Medicine and Biology*, 2008. (*Podium Presentation*)

PATENTS

1. Ahn SI and **Kim Y**, Microfluidic tissue barrier system. Invention Disclosure, (Assignee: Georgia Institute of Technology). Oct. 11, 2017.
2. Sei YJ and **Kim Y**, Microfluidic transcellular monitor. Invention Disclosure, (Assignee: Georgia Institute of Technology). Aug. 29, 2017.
3. Toth MJ and **Kim Y**, Integrated microfluidic system for nanomanufacturing. Invention Disclosure, (Assignee: Georgia Institute of Technology). Nov. 21, 2016.
4. **Kim Y**, Kuczenski B, LeDuc PR, Messner WC, Fluid-Pressure Regulation Systems and Software, US 20160004261 A1, (Assignee: Carnegie Mellon University), Published Jan. 7, 2016.
5. **Kim Y**, Messner WC, LeDuc PR, 3D Chemical Pattern Control in 2D Fluidics Devices (Assignee: Carnegie Mellon University); US 8695618 B2, Published Apr. 15, 2014. US 20130014828 A1, Published Jan. 17, 2013.
6. Kim D, Wee H, Hong J, **Kim Y**, Chung W, Robot cleaner with improved dust collector (Assignee: Samsung Electronics Co., Ltd.); EP 2380475 B1, Published Apr. 8, 2015; US 8857012 B2, Published Oct. 14, 2014; US 8627542 B2, Published Jan 14, 2014; EP 2380475 A3, Published Aug.

- 14, 2013; US 20130227812 A1, Published Sep. 5, 2013; US 8438698 B2, Published May 14, 2013; EP 1980188 B1, Published Nov. 14, 2012; US 20110227269 A1, Published Nov. 17, 2011; EP 2380475 A2, Published Oct. 26, 2011; EP 1980188 A3, Published Feb. 25, 2009; US 20080235897 A1, Published Oct. 2, 2008; EP 1980188, Published Oct. 15, 2008.
7. **Kim Y**, Fayad Z, Mulder W, Fisher E, Fay F, Farokhzad O, Langer R, Mass production and size control of nanoparticles through controlled microvortices, (Assignee: Massachusetts Institute of Technology and Icahn School of Medicine at Mount Sinai), PCT Application No. PCT/US2013/046581 Jun. 19, 2013.
 8. Kim D, Wee H, Hong J, **Kim Y**, Chung W, Robot cleaner with improved dust collector, US 20110277269 A1, (Assignee: Samsung Electronics Co., Ltd.), Published Nov. 17, 2011.
 9. **Kim Y**, Kuczynski B, LeDuc PR, Messner WC, Fluid-Pressure Regulator and Related Methods and Systems, US 20110017312 A1, (Assignee: Carnegie Mellon University), Published Jan. 27, 2011.
 10. **Kim Y**, Wee H, Kim D, Robot cleaner system having robot cleaner and docking station, US 7891045 B2, (Assignee: Samsung Electronics Co., Ltd.), Published Feb. 22, 2011.
 11. Chung W, Joo J, Wee H, Kim D, Hong J, **Kim Y**, Robot cleaner system and method of controlling the same (Assignee: Samsung Electronics Co., Ltd.); US 20080004751 A1, Published Jan.3, 2008; EP 1873605, Published Jan.2, 2008.
 12. Hong J, Chung W, Yoo K, Joo J, Wee H, Kim D, **Kim Y**, Wall-following robot cleaner and method to control the same (Assignee: Samsung Electronics Co., Ltd.); US 20080249661 A1, Published Oct. 9, 2008; EP 1977673, Published Oct. 8, 2008.
 13. **Kim Y**, Wee H, Kim D, Robot cleaner system having robot cleaner and docking station, EP 1961358, (Assignee: Samsung Electronics Co., Ltd.), Published Aug. 27, 2008.
 14. **Kim Y**, Apparatus of monitoring rear of vehicle (Assignee: KIA Motors Corp.); US 20030202096 A1, Published Oct. 30, 2003; EP 1356988, published Oct. 29, 2003.

INVITED LECTURES

1. **Kim Y**, Microfluidics in Nanomedicine: From Synthesis and Manufacturing to Preclinical Screening for Accelerating the Clinical Translation, Korea University, Seoul, South Korea, June, 2018.
2. **Kim Y**, Microengineered physiological systems: from disease modeling to drug testing, Yonsei University, Seoul, South Korea, June, 2018.
3. **Kim Y**, Engineered Biomimetic Microsystems for Disease Modeling and Nanomedicine Testing, The 10th International Symposium on Microchemistry and Microsystems, Busan, South Korea, June, 2018. Keynote presentation.
4. **Kim Y**, Engineered microfluidic systems for accelerating the clinical translation of nanomedicine, the Neural Tumors Research Chalk Talk Series, Department of Pediatrics Emory University School of Medicine, Atlanta, GA, May, 2018.
5. **Kim Y**, Human Microphysiological Systems: Farewell to Animal Testing, BASF Georgia Tech Symposium, Atlanta, GA, March, 2018
6. **Kim Y**, Engineered microfluidic systems for accelerating the clinical translation of nanomedicine, Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, February, 2018.
7. **Kim Y**, Engineered microfluidic systems for accelerating the clinical translation of nanomedicine,

- Department of Bioengineering, University of California at San Diego, San Diego, CA, November, 2017.
8. **Kim Y**, Engineered microfluidic systems for accelerating the clinical translation of nanomedicine, the Center for Targeted Therapeutics and Translational Nanomedicine, University of Pennsylvania, Philadelphia, PA, November, 2017.
 9. **Kim Y**, Engineered microfluidic systems for accelerating the clinical translation of nanomedicine, Department of Biomedical Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, October, 2017.
 10. **Kim Y**, Engineered microfluidic systems for disease modeling and nanomedicine testing, NanoFANS forum, GT-Emory, Atlanta GA, October, 2017.
 11. **Kim Y**, Probing the effect of engineered high-density lipoprotein-mimetic nanoparticles on the vascular endothelium using physiological biomimicry, UKC 2017, Washington DC, August, 2017.
 12. **Kim Y**, Microengineered human blood-brain barrier system for CNS disease modeling and drug efficacy testing, Seoul National University Hospital, Seoul, South Korea, May, 2017.
 13. **Kim Y**, Nano- and Microengineered biomimicry for accelerating clinical translation of nanomedicine, Ajou University, Suwon, South Korea, May, 2017.
 14. **Kim Y**, Nano- and Microengineered biomimicry for accelerating clinical translation of nanomedicine, Yonsei University, Seoul, South Korea, May, 2017.
 15. **Kim Y**, Microfluidics for nanobiotechnology, Youngnam University, Kyungsan, South Korea, May, 2017.
 16. **Kim Y**, Nano- and Microengineered biomimicry for accelerating clinical translation of nanomedicine. Cardiovascular Biology Seminar, School of Medicine, Emory University, Atlanta GA, April, 2017.
 17. **Kim Y**, Microfluidic Assembly, Evaluation, and Manufacturing of Multicomponent Nanoparticles, Annual Fall Meeting of Biomedical Engineering Society (BMES), Minneapolis, MN, October, 2016. **Keynote presentation.**
 18. **Kim Y**, Microfluidic Assembly, Evaluation, and Manufacturing of Multicomponent Nanoparticles, US-Korea Conference on Science, Technology, and Entrepreneurship (UKC 2016), Dallas, TX, August, 2016.
 19. **Kim Y**, Microfluidics in Nanomedicine – Accelerating the Clinical Translation, Samsung Electronics Co. Ltd, Suwon, South Korea, June, 2016.
 20. **Kim Y**, Microfluidics in Nanomedicine – Accelerating the Clinical Translation, POSTECH, Pohang, South Korea, June, 2016.
 21. **Kim Y**, Microfluidics in Nanomedicine – Accelerating the Clinical Translation, Kyungpook National University, Daegu, South Korea, June 2016.
 22. **Kim Y**, Microfluidics in Nanomedicine – Accelerating the Clinical Translation, KAIST, Daejeon, South Korea, June, 2016.
 23. **Kim Y**, Microfluidics in Nanomedicine – Accelerating the Clinical Translation, Sogang University, Seoul, South Korea, June, 2016.
 24. **Kim Y**, Microfluidics in Nanomedicine – Accelerating the Clinical Translation, Yonsei University, Seoul, South Korea, June, 2016.
 25. **Kim Y**, Microfluidics in Nanomedicine – Accelerating the Clinical Translation, Konkuk University,

Seoul, South Korea, June, 2016.

26. **Kim Y**, Microfluidics in Nanomedicine – Accelerating the Clinical Translation, Seoul National University, Seoul, South Korea, June, 2016.
27. **Kim Y**, Engineering Microsystems for Nanomedicine, University of Alabama at Birmingham, Birmingham, AL, November, 2015.
28. **Kim Y**, Engineering Microsystems for Nanomedicine Development, The 9th IEEE International Conference on Nano/Molecular Medicine and Engineering, Honolulu, HI, November, 2015
29. **Kim Y**, Microfluidic Engineering of Nanomedicines for CNS Therapeutics, US-Korea Conference on Science, Technology, and Entrepreneurship (UKC 2015), Atlanta, GA, July, 2015.
30. **Kim Y**, The Fast Pace Progress and Multidisciplinary Approach to Problem Solving: Biomimicry - The New Direction: Engineering Microfluidic Systems for Nanomedicine. The Annual Beckman Scholars and Young Investigators Symposium, Irvine, CA, August, 2014.
31. **Kim Y**, Engineering Microfluidic Systems for Accelerating the Clinical Translation of Nanoparticles, Seoul National University, Seoul, South Korea, May, 2014.
32. **Kim Y**, Engineering Biomimetic Microsystems for Nanomedicine, Kyushu Institute of Technology, Japan, May, 2014.
33. **Kim Y**, Engineering Biomimetic Microsystems for Nanomedicine. Nano@Tech Seminar Series Spring, Georgia Tech, Atlanta, March, 2014.
34. **Kim Y**, Large-scale Microfluidic Formulation of Multifunctional Nanomaterials. KSEA Southeastern Regional Conference, Duluth, GA, March, 2014.
35. **Kim Y**, Control of Micro- and Millifluid Dynamics: From Tissue Morphodynamics to Nanomaterial Formulation. Department of Mechanical Engineering, Vanderbilt University, Nashville, TN, March, 2013.
36. **Kim Y**, Control of Micro- and Millifluid Dynamics: From Tissue Morphodynamics to Nanomaterial Formulation. The George W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, March, 2013.
37. **Kim Y**, Control of Micro- and Millifluid Dynamics: From Tissue Morphodynamics to Nanomaterial Formulation. Department of Mechanical Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, March, 2013.
38. **Kim Y**, Control of Micro- and Millifluid Dynamics: From Tissue Morphodynamics to Nanomaterial Formulation. Department of Industrial and Systems Engineering, North Carolina State University, Raleigh, NC, February, 2013.
39. **Kim Y**, Dynamics and Control in Microfluidic Systems for Biology and Nanotechnology. Department of Bio and Brain Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea, December, 2012.
40. **Kim Y**, Closed-loop Microfluidic Control for Probing Multicellular Dynamics. Department of Bioengineering, University of California at Berkeley, Berkeley, CA, March, 2011.
41. **Kim Y**, Closed-loop Microfluidic Control for Probing Multicellular Dynamics. Harvard-MIT's Division of Health Sciences and Technology (HST), Cambridge, MA, February, 2011.

GRANTS

1. Advanced Delivery of Microglial Kv1.3 Channel Blocker for Attenuation of Neuroinflammation of

- Alzheimer's Disease, **NIH/NIA**, PI (MPI: Rangaraju), 4/1/2018 – 3/30/2020, \$424,221.
2. Probing the functional heterogeneity of high-density lipoprotein using physiological biomimicry, **NIH Director's New Innovator Award, NHLBI**, PI, 9/30/2017 – 6/30/2022, \$2,346,000.
 3. CAREER: Integrated Microfluidic Systems for Scalable Manufacturing of Hybrid Nanoparticles for Drug Delivery, **NSF CAREER AWARD, NSF, CMMI, Nanomanufacturing**, PI, 9/1/2017 – 8/31/2022, \$500,000.
 4. HDL-mimetic nanocarriers for miRNA-mediated direct cell reprogramming for vascular regeneration, **Regenerative Engineering and Medicine**, Co-PI (Co-PI: Yoon), 9/1/2016 – 6/30/2017, \$35,000.
 5. Targeted delivery of a sonic hedgehog inhibitor for the study of medulloblastoma therapeutics, **NIH/NINDS**, PI (Co-I, MacDonald), 9/01/2015 – 8/31/2017, \$423,732.
 6. Engineering of anti-miRNA transporting HDL for treating endothelial inflammation in experimental atherosclerosis, **National Scientist Development Grant, American Heart Association**, PI (Collaborator: Jo), 7/01/2015 – 6/30/2019, \$308,000.
 7. Advanced CNS drug delivery via lipoprotein-polymer nanocomplexes in experimental Alzheimer's disease, **Coins For Alzheimer's Research Trust Foundation**, PI (Co-PI: Tansey), 5/02/2015 – 5/01/2017, \$100,000
 8. Engineering multifunctional nanoparticles for AML, **Center for Pediatric Nanomedicine**, Emory and CHO, PI (Co-PI: Lam), 8/01/2014 – 7/31/2015, \$57,917.
 9. Dominant-negative-TNF-transporting HDL-polymer nanoparticle for treating neuroinflammation associated with Alzheimer's-like pathology, **Regenerative Engineering and Medicine**, Georgia Tech and Emory, Co-PI (Co-PI: Tansey), 10/1/2014 – 6/30/2015, \$30,000.
 10. Center for Translational Cardiovascular Nanomedicine (Program of Excellence in Nanotechnology), **NIH, NHLBI**, Co-I (PI: Bao, G), 4/1/2014 – 8/30/2015, \$78,140.

EDITORIAL BOARD, COMMITTEE, AND SYMPOSIUM CONTRIBUTION

Board Member, Korean Biomedical Engineering Society (KBMES), 2018
 Review Panel, American Heart Association (Bioengineering), 2017.
 Review Panel, NIH, Small Business: Biomaterials, Delivery, and Nanotechnology, 2017.
 BMES Student Affairs Committee, Biomedical Engineering Society, 2016.
 Editorial Board Member of Scholarena Journal of Nanoscience and Nanotechnology
 Chair, Novel printing and synthesis techniques for biomaterial scaffold, ASME NanoEngineering for Medicine and Biology (NEMB), 2016.
 Review Panel, American Heart Association (Bioengineering), 2015.
 Review Panel, National Science Foundation (CBET, Particulate and Multiphase Processes), 2015.
 Review Panel, National Science Foundation (CMMI, Nanomanufacturing), 2015.
 Program Committee, Session Organizer, BioMEMS: Gene Circuits to Physiological Biomimicry, The 9th IEEE International Conference on Nano/Molecular Medicine and Engineering, 2015.
 Co-Chair, Biomechanics in Biomaterials and Tissue Engineering, BMES, 2015.
 Co-Chair, Multifunctional Drug Delivery, BMES, 2014.
 Co-Chair, Session, Point-of-Care Microfluidics-Based Diagnostics, 7th World Congress of Biomechanics, Boston, 2014.
 Co-Chair, Session, Organ on Chip Systems, 7th World Congress of Biomechanics, Boston, 2014.
 Co-Chair, Session, Molecular Imaging and Therapeutic Approaches, 7th World Congress of Biomechanics, Boston, 2014.

PROFESSIONAL SOCIETY MEMBERSHIPS

Member of the American Society of Mechanical Engineers
 Member of the Biomedical Engineering Society

Member of the Biophysical Society
 Member of Sigma Xi, the Honorary Scientific Research Society

JOURNAL REFEREE

Analytical Chemistry, ACS Nano, ACS Applied Materials and Interfaces, ASME Dynamic Systems and Control Conference, Bioengineering, Bioinspiration and Biomimetics, Biomaterials, Biomicrofluidics, Biophysical Journal, Chemical Reviews, Current Opinion in Biomedical Engineering, Developmental Dynamics, Encyclopedia of Molecular Cell Biology and Molecular Medicine, IEEE Conference on Decision and Control, IEEE Transactions on Control Systems Technology, IEEE Transactions on Nanotechnology, International Journal of Dynamics and Control, Journal of Controlled Release, Journal of Pharmaceutical Sciences, Lab on a Chip, Microfluidics and Nanofluidics, Micromachines, Nano Letters, Nano Today, Nanomedicine: Nanotechnology, Biology, and Medicine, Nanoscale, Proceedings of the National Academy of Sciences (PNAS), Public Library of Science ONE (PLOS ONE), Scientific Reports, Small, Tissue Engineering

CURRENT TRAINEES

Visiting Research Faculty

Jaeseok Kim, M.D. (2017~, Assistant Professor, Nephrology, Yonsei University College of Medicine, Wonju, South Korea)

Postdoctoral Associate

Yunki Lee, Ph.D. (2017~, ME, Georgia Tech)
Hyun-Ji Park, Ph.D. (2018~, ME, Georgia Tech)
Jinhwan Kim, Ph.D. (2018~, ME, Georgia Tech)

Graduate Students

Yoshitaka Sei (2013~, ME and BoiE, Georgia Tech)
Song Ih Ahn (2015~, ME and BioE, Georgia Tech)
Jungho Ahn (2016~, ME, Georgia Tech; ME, Seoul National University)
Taeyoung Kim (2016~, ME, Georgia Tech)
Jiwon Yom (2017~, ME and BioE, Georgia Tech)

Undergraduate Students

Athena Michelle Prine (2017~, BME, Georgia Tech)
Disha Vaswani (2017~, BME, Georgia Tech)

FORMER TRAINEES

Visiting Research Faculty

Gye Sun Jeon, Ph.D. (2017~2018), Research Professor, Neurology, Seoul National University Hospital, Seoul, South Korea)
Jin Joo, Ph.D. (2016~2018) Associate Professor, Chemistry; Kyungpook National University, Daegu, South Korea)

Postdoctoral Associate

Viola Morris, Ph.D. (2016~2017) Current position: Research Scientist at Emory University
Sungho Kim, Ph.D. (2013~2014) Current position: R&D Engineer at BD

Graduate Students

Michael Toth (2013~2018) ME, Georgia Tech. Current position: Systems Engineer of Lockheed

Marin, Dallas, Texas.

Candice Hovell, Ph.D. (2013~2017) BME, Georgia Tech. Current position: Director of R&D division at SpacePharma

Undergraduate Students

Jiwon Yom (BME; Spring 2016 ~ Spring 2017)

Yu Jung (Iris) Ryu (ME; Fall 2016 ~ Spring 2017)

Theodore Virtue (ME; Spring 2016 ~ Spring 2017)

Cole Weiler (ME; Fall 2014 ~ Fall 2016), Recipient of a President's Undergraduate Research Salary Award (PURA)

Matthew Lee (ECE; Fall 2015 ~ Fall 2016), Recipient of a President's Undergraduate Research Salary Award (PURA)

Juhyeong "Canny" Jeon (ME; Fall 2015 ~ Fall 2016)

Eloise Yount (ChBE, Spring 2016)

Shinjae Kwon (ME; Fall 2016)

Tiffany Yang (ME; Fall 2015 ~ Fall 2016)

Erisa Sula (BME; Spring 2015 ~ Spring 2016)

Vivek Shimpi (BME; Summer 2015 ~ Fall 2015)

Ye Lim Lee (BME; Fall 2014 ~ Spring 2015) at GT BME

Yuanda Li (ME; Spring 2014 ~ Spring 2015) Recipient of a President's Undergraduate Research Salary Award (PURA) for Spring 2015, Admitted to graduate schools in Mechanical Engineering at MIT in 2015

Jaehyung "Jason" Choi (BME; Summer ~ Fall 2014)

Kyu-Ho "Q" Hwang (ME; Spring 2014)