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EDUCATION

Carnegie Mellon University	Ph.D.	Mechanical Engineering	**2011**
Seoul National University	MS	Mechanical Engineering	**2001**
Seoul National University	BS	Mechanical and Aerospace Engineering	**1999**

PROFESSIONAL ACTIVITIES

- Founder and CEO, Mepsgenlab Inc., Duluth, GA, USA (2019-present
- Founder and CEO, Mepsgen Co., Ltd., Republic of Korea (2019-present)
- Associate Professor with Tenure, G.W. Woodruff School of Mechanical Engineering, Georgia Tech, Atlanta, GA, USA (2019-present)
- Adjunct Professor, Medical Engineering, College of Medicine, Yonsei University, Seoul, South Korea (2019-present)
- Research Faculty, Regenerative Engineering and Medicine, Atlanta, GA, USA (2014-present)
- Research Faculty, Emory & Children's Pediatric Research Center, Atlanta, GA, USA (2014-present)
- Adjunct Professor, Wallace H. Coulter Department of Biomedical Engineering at Georgia Tech and Emory University, Atlanta, GA, USA (2014-present)
- Research Faculty, Institute for Electronics and Nanotechnology at Georgia Tech, Atlanta, GA, USA (2013-present)
- Research Faculty, Parker H. Petit Institute for Bioengineering and Bioscience at Georgia Tech, Atlanta, GA, USA (2013-present)
- Assistant Professor, G.W. Woodruff School of Mechanical Engineering, Georgia Tech, Atlanta, GA, USA (2013 – 19)
- Postdoctoral Associate, David H. Koch Institute for Integrative Cancer Research, MIT, Cambridge, MA, USA (2011 – 13)
- Researcher, Samsung Electronics Co., Ltd., Suwon, Republic of Korea (2003 – 07)
- Researcher, Hyundai-Kia R&D Center, Hwaseong, Republic of Korea (2001 – 03)

AWARD AND HONORS

- Young Investigator Award, Nanobiotechnology, Nano Research, Springer Nature, 2018
- NIH Director's New Innovator Award, 2017
- NSF CAREER Award, 2017
- George W. Woodruff School Teaching Fellow, 2017
- AHA National Scientist Development Grant, 2015

- Distinguished Panel Speaker, Annual Beckman Scholars and Young Investigators Symposium, 2014

MAIN SCIENTIFIC PUBLICATION

- Ahn SI, Sei YJ, …, and Kim Y, Microengineered human blood-brain barrier platform for understanding nanoparticle transport mechanisms (2020) *Nature Communications* 11: 175.
- Shin YC, Lee JB, …, Kim Y, and Sung HJ, Development of a shape memory tube to prevent vascular stenosis (2019) *Advanced Materials* 1904476.
- Kim J, Ahn SI, and Kim Y, Nanotherapeutics engineered to cross the blood-brain barrier for advanced drug delivery to the central nervous system (2019) *Journal of Industrial and Engineering Chemistry* 73: 8-18.
- Ahn SI*, Park HJ*, Yom J, Kim T, and Kim Y, High-density lipoprotein-mimetic nanotherapeutics for cardiovascular and neurovascular diseases (2018) *Nano Research.* 11 (10): 5130-5143.
- Sei YJ, Ahn J, …, and Kim Y, Detecting the functional complexities between high-density lipoprotein mimetics (2018) *Biomaterials* 170:58-69. Selected as Leading Opinion.
- Sei YJ, Ahn SI, Virtue T, Kim T, and Kim Y, Detection of frequency-dependent endothelial response to oscillatory shear stress using a microfluidic transcellular monitor (2017) *Scientific Reports* 7:10019.
- 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.
- Lee Chung B*, Toth MJ*, …, Kim Y*, and Langer R*, Nanomedicine for endothelial disorders (2015) *Nano Today* 10 (6): 759-776.
- 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.
- Kim Y, Hazar M, …, and LeDuc PR, Mechanochemical actuators of embryonic epithelial contractility (2014) *Proceedings of the National Academy of Sciences (PNAS)* 111 (40): 14366-14371.
- Kim Y*, Lobatto ME*, …, 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.
- Kim Y*, Fay F*, …, Langer R, and Fayad ZA, Single-step reconstitution of multifunctional high-density lipoprotein-derived nanomaterials using microfluidics (2013) *ACS Nano* 7 (11): 9975-9983.
- Kim Y, Lee Chung B, …, and Langer R, Mass production and size control of lipid-polymer hybrid nanoparticles through controlled microvortices (2012) *Nano Letters* 12 (7): 3587-3591.
- 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)
- 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.

RESEARCH INTERESTS

- Organ-on-a-chip
- Lab-on-a-chip
- Nanomedicine
- Microfluidics