

NANO KOREA 2020

July 1~3, KINTEX, Korea

Dongeun Huh

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EDUCATION

Harvard University	Postdoc	Bioengineering	2012
University of Michigan	PhD	Biomedical Engineering	2007
University of Michigan	MS	Mechanical Engineering	2002
University of Michigan	MS	Biomedical Engineering	2001
Seoul National University	BS	Mechanical Engineering	2000

PROFESSIONAL ACTIVITIES

- Associate Professor, Department of Bioengineering, University of Pennsylvania (2019-present)
- Assistant Professor, Department of Bioengineering, University of Pennsylvania (2013-2019)
- Wilf Family Term Endowed Chair, University of Pennsylvania (2013-2019)
- Assistant Professor, Department of Biomedical Engineering, Seoul National University College of Medicine (2012-2013/2019)

SELECT AWARD AND HONORS

- Bernard Langer Distinguished Lectureship, University of Toronto (2019)
- Lush Prize (with a monetary prize of £50,000), Lush (2018)
- Alice R. McPherson Distinguished Lectureship, University of Wisconsin, Madison (2018)
- The CRI Technology Impact Award, Cancer Research Institute (2017)
- John J. Ryan Medal, Royal College of Surgeons in Ireland (2017)
- *Analytical Chemistry* Young Innovator Award, *Analytical Chemistry* and the Chemical and Biological Microsystems Society (CBMS) (2016)
- Design of the Year Award, London Design Museum (2015)
- Best Product Design of the Year Award, London Design Museum (2015)
- TEDx Fellow, Technology, Entertainment, and Design (TED) (2015)
- Lifetime Membership, Museum of Modern Art (MoMA) (2015-present)
- NIH Director's New Innovator Award, National Institutes of Health (NIH) (2014)
- Wilf Family Term Endowed Chair, University of Pennsylvania (2013 – 2019)
- NC3Rs Annual Award, National Centre for the Replacement, Refinement, and Reduction of Animals in Research, London (2013)
- SLAS Innovation Award, Society for Lab Automation and Screening (2012)
- Scientific Breakthrough of the Year, American Thoracic Society (2011)
- Best Publication Award, Nanotoxicology Specialty Section, Society of Toxicology (2011)
- Best Postdoctoral Award, In Vitro and Alternative Methods Annual Competition, Society of Toxicology (2011)

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- Wyss Technology Development Fellowship, Wyss Institute for Biologically Inspired Engineering, Harvard University (2009 – 2012)
- Distinguished Achievement Award, University of Michigan (2005)
- Horace H. Rackham Predoctoral Fellowship, University of Michigan (2005)
- Widmer Best Poster Award, 2004 International Conference on Miniaturized Systems in Chemistry and Life Sciences (microTAS 2004)

MAIN SCIENTIFIC PUBLICATION

- J Seo, WY Byun, F Alisafaei, A Georgescu, M Massaro-Giordano, VB Shenoy, V Lee, V Bunya, **D. Huh**, “Multiscale reverse engineering of the human ocular surface,” *Nat. Med.* 2019, 25, 1310-1318.
- S.E. Park, A. Georgescu, **D. Huh**, “Organoids-on-a-chip,” *Science* 2019, 364, 960-965.
- J Paek, SE Park, Q Lu, KT Park, M Cho, JM Oh, KW Kwon, YY Yi, JW Song, H.I. Edelstein, J. Ishibashi, W. Yang, JW Myerson, RY Kiseleva, P Aprelev, ED Hood, D Stambolian, P Seale, VR Muzykantov, **D. Huh**, “Microphysiological engineering self-assembled and perfusable microvascular beds for the production of vascularized three-dimensional human microtissues,” *ACS Nano* 2019, 13, 7627-7643.
- C. Blundell, Y.S. Yi, L. Ma, E. Tess, M. Farrell, A. Georgescu, L. Aleksunes, **D. Huh**, “Placental drug transport-on-a-chip: a microengineered *in vitro* model of transporter-mediated drug efflux in the human placental barrier,” *Adv. Healthc. Mater.* 2017, doi: 10.1002/adhm.201700786.
- E. Esch, A. Bahinski, **D. Huh**, “Organs-on-chips at the frontiers of drug discovery,” *Nat. Rev. Drug Discov.* 2014, 14, 248-260.
- **D. Huh***, H.J. Kim, J.P. Fraser, D.E. Shea, M. Khan, A. Bahinski, G.A. Hamilton, D.E. Ingber*, “Microfabrication of human organs-on-chips,” *Nat. Protoc.* 2013, 8, 2135-2157.
- **D. Huh**, D.C. Leslie, B.D. Matthews, J.P. Fraser, S. Jurek, G.A. Hamilton, K.S. Thorneloe, M.A. McAlexander, D.E. Ingber, “A human disease model of drug toxicity-induced pulmonary edema in a lung-on-a-chip microdevice,” *Science Trans. Med.* 2012, 4, 1-8.
- **D. Huh**, G.A. Hamilton, D.E. Ingber, “From three-dimensional cell culture to organs-on-chips,” *Trends Cell Biol.* 2011, 21, 745-754.
- **D. Huh**, B. D. Matthews, A. Mammoto, M. Montoya, H.Y. Hsin, D.E. Ingber, “Reconstituting organ-level lung functions on a chip,” *Science* 2010, 328, 1662-1668
- Mammoto, K.M. Connor, T. Mammoto, C.W. Yung, **D. Huh**, C.M. Aderman, G. Mostoslavsky, L.E.H. Smith, D.E. Ingber, “A Mechanosensitive Transcriptional Mechanism that Controls Angiogenesis,” *Nature* 2009, 457, 1103-1111.
- **D. Huh**, K. L. Mills, X. Zhu, M.A. Burns, M. D. Thouless, S. Takayama, “Tuneable Elastomeric Nanochannels for Nanofluidic Manipulation,” *Nat. Mater.* 2007, 6, 424-428.
- **D. Huh**, H. Fujioka, Y.-C. Tung, N. Futai, R. Paine III, J.B. Grotberg, S. Takayama, “Acoustically Detectable Cellular-Level Lung Injury Induced by Fluid Mechanical Stresses in Microfluidic Airway Systems,” *Proc. Nat. Acad. Sci. U. S. A.* 2007, 104, 18886-18891.

RESEARCH INTERESTS

- Bioengineering
- Organ-on-a-chip
- Microfluidics
- Physiology