HOWON LEE

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ORCID: 0000-0001-5778-2398 | WEB OF SCIENCE RESEARCHER ID: A-1486-2012 | GOOGLE SCHOLAR:

EDUCATION

Aug 2006 – Sep 2011	**University of Illinois at Urbana-Champaign** *Ph.D.* in Mechanical Engineering Advisor: Prof. Nicholas X. Fang	Champaign, IL
Mar 2004 – Feb 2006	**Seoul National University** *M.S.* in Mechanical Engineering Advisor: Prof. Jang Moo Lee	Seoul, Korea
Mar 1997 – Feb 2004	**Seoul National University** *B.S.* in Mechanical Engineering	Seoul, Korea

APPOINTMENTS

Mar 2021 – present	Associate Professor, **Seoul National University** Department of Mechanical Engineering	Seoul, Korea
Jan 2014 – Feb 2021	Assistant Professor, **Rutgers University** Department of Mechanical and Aerospace Engineering	New Brunswick, NJ
Oct 2011 – Dec 2013	Postdoctoral Associate, **Massachusetts Institute of Technology** Battelle/MIT Postdoctoral Fellow Advisor: Prof. Nicholas X. Fang	Cambridge, MA
Aug 2006 – Sep 2011	**University of Illinois at Urbana-Champaign** Graduate Research Assistant Graduate Teaching Assistant	Champaign, IL
Mar 2004 – Feb 2006	**Seoul National University** Graduate Research Assistant Graduate Teaching Assistant	Seoul, Korea

RESEARCH INTERESTS

- Additive manufacturing of active and reconfigurable materials (3D/4D printing)
- Bio-inspired designs and devices
- Mechanical metamaterials
- Mechanics of soft materials
- Biomedical micro-devices

HONORS / AWARDS

- SNU School of Engineering Excellent Teaching Award, Spring 2022
- Professor of the Year Award elected by Rutgers Engineering Governing Council Students, 2020
- ***Materials Horizons* Outstanding Paper Award**, 2019
- Best Poster Award, 10th Northeast Complex Fluids and Soft Matter Workshop, 2019
- Best Paper Award, World Congress on Micro and Nano Manufacturing, 2018
- **Young Researcher Award**, International Symposium on Green Manufacturing and Applications, 2017
- **Haythornthwaite Young Investigator Award** by ASME Applied Mechanics Division, 2016
- Battelle/MIT Postdoctoral Associate Fellowship, 2012-2013
- NSF fellowship for Summer Institute Short Course on Materiomics, Cambridge, MA, May 2012
- NSF Student Fellowship, CMMI Research and Innovation Conference, Atlanta, GA, Jan 2011
- Schaller Fund Travel Award, UIUC, Apr 2010
- The Incomplete List of Teachers Ranked as Excellent by Their Students, UIUC, Spring 2007

I. SCHOLARSHIP

PUBLICATIONS

PATENT

1. "Apparatus and method for controlling 3D printer for multi-material 3D printing," Kyujin Cho, Sangjoon Ahn, Howon Lee, Korean Patent, Application number: 1020230070884
2. "Apparatus and method for 3D spatial alignment and 3D printing of liquid crystal polymers using permanent magnets," Howon Lee and Sehui Jeong, Korean Patent, Application number: 1020230067608
3. "Methods and Devices for Thickness-Limited Electrospray Additive Manufacturing," Jonathan P. Singer and Howon Lee, PCT/US20/33020, US 17/595,341
4. "3D Printed Microneedles with Backward-Facing Barbs for Enhanced Tissue Adhesion," Howon Lee, Giuseppe Barillaro, Riddish Morde, Emanuele Vignali, U.S. Patent No. 11,697,008
5. "Expandable Arrays and Methods of Use," H. Sabaawy, Howon Lee, C. Yang, and D. Han, U.S. Patent No. 11,565,264 B2
6. "High Resolution Projection Micro Stereolithography System and Method," C. M. Spadaccini, G. Farquar, T. Weisgraber, S. Gemberling, N. X. Fang, J. Xu, M. Alonso, and Howon Lee, U.S. Patent No. 9,492,969

BOOK CHAPTER

1. Duoss E. et al., Ch.2. Additive Micro-Manufacturing of Designer Materials. In: Udomkichdecha W., Böllinghaus T., Manonukul A., Lexow J. (eds) Materials Challenges and Testing for Manufacturing, Mobility, Biomedical Applications and Climate. Springer, Cham (2014)

REFEREED JOURNAL ARTICLES (Students I advised or co-advised are underlined; Corresponding authors* are identified by *)

1. J. Tobia, D. Han, C. Yang, J. Kim, and **Howon Lee***, Droplet-Based Resin Supply for Material-Efficient Multimaterial Projection Micro-Stereolithography, *submitted*
2. S. Ahn, **Howon Lee***, KJ Cho*, 3D Printing with a 3D Printed Digital Material Filament for Programming Functional Gradients, *in revision*
3. C. Owens, Y. Wang, S. Farzinazar, C. Yang, **Howon Lee***, Jaeho Lee*, Tunable Thermal Transport in 4D Printed Mechanical Metamaterials, ***Materials & Design***, 111992 (2023) [link]

4. H. Kim, S. Hajra, **Howon Lee**, N. Kim*, and H. Kim*, Additively Manufactured Mechanical Metamaterial Based Pressure Sensor with Tunable Sensing Properties for Stance and Motion Analysis, ***Advanced Engineering Materials***, 2201499 (2023) [link]
5. Y. Wang, J. An, and **Howon Lee***, Recent Advances in Molecular Programming of Liquid Crystal Elastomers with Additive Manufacturing for 4D Printing, ***Molecular Systems Design & Engineering,*** 7, 1588-1601 (2022) – **invited paper** [link] – Special issue on *Additive Manufacturing*
6. S. Farzinazar, Y. Wang, C.A. Owens, C. Yang, **Howon Lee***, J. Lee*, Thermal Transport in 4D Printed Shape Memory Polymers, ***APL Materials*** 10, 081105 (2022) [link]
7. K. Alkhoury, N. Bosnjak, Y. Wang, **Howon Lee**, S. Nadimpalli, S. A. Chester*, Experiments and Modeling of the Thermo-Mechanically Coupled Behavior of VHB, ***International Journal of Solids and Structures*** 242, 111523 (2022) [link]
8. P. Sphabmixay, M.S.B. Raredon, A. J-S Wang, **Howon Lee**, P. Hammond, N. Fang, L. G. Griffith*, High resolution stereolithography fabrication of perfusable scaffolds to enable long- term meso-scale hepatic culture for disease modeling, ***Biofabrication*** 13, 045024 (2021) [link]
9. D. Han[#], Y. Wang[#] ([#]equal contribution), C. Yang, and **Howon Lee***, Multi-Material Printing for Cephalopod-Inspired Light-Responsive Artificial Chromatophores, ***ACS Applied Materials and Interfaces*** 13, 12735 (2021) – **invited paper** [link] – Special issue (Forum) on *Novel Stimuli-Responsive Materials for 3D Printing*
10. C. Yang, J. Luo, M., Polunas, N. Bosnjak, S. D. Cheung, M. Chadwick, H. E. Sabaawy, S. A. Chester, K.-B. Lee* and **Howon Lee***, 4D Printed Transformable Tube Array for High-Throughput 3D Cell Culture and Histology, ***Advanced Materials*** 7, 2004285-7 (2020) [link]
11. M. Chadwick[#], C. Yang[#], L. Liu[#] ([#]equal contribution), C. M. Gamboa, K. Jara, **Howon Lee***, and H. Sabaawy*, Rapid Processing and Drug Evaluation in Glioblastoma Patient Derived Organoid Models with 4D Bioprinted Arrays, ***iScience*** 23, 101365 (2020) [link]
12. D. Han and **Howon Lee***, Recent Advances in Multi-material Additive Manufacturing: Methods and Applications, ***Current Opinion in Chemical Engineering*** 28, 158-166 (2020) - **invited review** [link]
13. D.A. Kovacevich, L. Lei, D. Han, C. Kutznetsova, S.E. Kooi, **Howon Lee**, and J.P. Singer*, Self-Limiting Electrospray Deposition for the Surface Modification of Additively Manufactured Parts, ***ACS Applied Materials and Interfaces*** 12 (18), 20901-20911 (2020) [link]
14. T. Yoon, I. Baek, S. Lee, H. Choi, S. Yoon, **Howon Lee**, S. Kim, S. Na*, Immobilization of Laccase on a Graphene Interface: Direct Electron Transfer and Molecular Dynamics Study, ***Applied Surface Science*** 521, 146378 (2020) [link]
15. D. Han[#], R. S. Morde[#], S. Mariani[#] ([#]equal contribution), A.A. La Mattina, E. Vignali, C. Yang, G. Barilaro*, and **Howon Lee***, 4D Printing of a Bio-inspired Microneedle with Backward-facing Barbs for Enhanced Tissue Adhesion, ***Advanced Functional Materials*** 3, 1909197 (2020) [link]
    - Highlighted in Wiley's *Advanced Science News* and *ACS Sensors*
    - Featured in news outlets including *Science Daily*, *Eurekalert*, *Phys.Org*, *etc*.
16. C. Yang, M. Boorugu, J. Ren, A. Dopp, R. Martin, D. Han, W. Choi, and **Howon Lee***, 4D Printing Reconfigurable, Deployable and Mechanically Tunable Metamaterials, ***Materials Horizons*** 6, 1244-1250 (2019) [link]
    - **Awarded *Materials Horizons* Outstanding Paper 2019** [link]
    - *A Selection of 2019 Articles* in *Materials Horizons* (30 articles)
    - Featured in news outlets including *Science Daily*, *Eurekalert*, *Materials Today*, *Phys.Org*, *etc*.
    - Featured in Rutgers School of Engineering *Fall 2019 News Letter*
17. D. Han, C. Yang, N. X. Fang, and **Howon Lee***, Rapid Multi-Material 3D Printing with Projection Micro-Stereolithography Using Dynamic Fluidic Control, ***Additive Manufacturing*** 27, 606-615 (2019) [link]
18. N. Kim*, C. Yang, **Howon Lee***, and N. Aluru, Spatial Uncertainty Modeling for 3D Printed Objects Using Image Segmentation, ***Applied Sciences*** 9(6), 1093 (2019) [link]

19. N. Bosnjak, S. Wang, D. Han, **Howon Lee**, and S. A. Chester*, Modeling of Fiber-Reinforced Polymeric Gels, ***Mechanics Research Communications*** 96, 7-18 (2019) [link]
20. S. Kang, J. Cha, K. Seo, S. Kim, Y. Cha, **Howon Lee**, J. Park, and W. Choi*, Temperature-Responsive Thermal Metamaterials Enabled by Modular Design of Thermally Tunable Unit Cells, ***International Journal of Heat and Mass Transfer*** 130, 469-482 (2019) [link]
21. N. Kim[#]*, I. Bhalerao[#] ([#]equal contribution), D. Han, C. Yang, and **Howon Lee***, Improving Surface Roughness of Stereolithography 3D Printed Parts Using a Photopolymerization Model and Multi-object Particle Swarm Optimization, ***Applied Sciences*** 9(1), 151 (2019) [link]
22. D. Han, C. Farino, C. Yang, T. Scott, D. Browe, W. Choi, J. Freeman, and **Howon Lee***, Soft Robotic Manipulation and Locomotion with a 3D Printed Electroactive Hydrogel, ***ACS Applied Materials and Interfaces*** 10 (21), 17512-17518 (2018) [link]
    - Featured in news outlets including *Science Daily*, *Eurekalert*, *Phys.Org*, *YTN Science*, *etc*.
23. D. Han, Z. Lu, S. Chester, and **Howon Lee***, Micro 3D Printing of a Temperature-Responsive Hydrogel Using Projection Micro-Stereolithography, ***Scientific Reports*** 8, 1963 (2018) [link]
    - *Top 100 Most Highly Accessed Materials Science Articles* in *Scientific Reports* in 2018 [link]
    - *Scientific Reports* Editor's choice: polymer chemistry [link]
    - Featured in news outlets including *Eurekalert*, *Phys.Org*, *3D Printing Industry*, *R&D Magazine*, *etc*.
24. H. Hwang, H. Devaraj, C. Yang, Z. Gao, M. Dexter, C. Chang, **Howon Lee**, R. Malhotra*, Rapid Pulsed Light Sintering of Silver Nanowires on Woven Polyester for Personal Thermal Management with Enhanced Performance, Durability, and Cost-Effectiveness, ***Scientific Reports*** 8, 17159 (2018) [link]
25. S. Lee, J. Lee, H. Hwang, T. Yeo, **Howon Lee**, and W. Choi*, Layer-by-layer Assembled Carbon Nanotube Polyethyleneimine Coating Inside Copper-Sintered Heat Pipes for Enhanced Thermal Performance, ***Carbon*** 140, 521-532 (2018) [link]
26. G. Park, S. Kang, **Howon Lee**, and W. Choi*, Tunable Multifunctional Thermal Metamaterials: Manipulation of Local Heat Flux via Assembly of Unit-Cell Thermal Shifters**,** ***Scientific Reports*** 7, 41000 (2017) [link]
27. K. Jang, C. Park, J. You, J. Choi, H. Park, J. Park, **Howon Lee**, C.-H. Choi, and S. Na*, Highly Sensitive, Direct Real-Time Detection of Silver Nanowires by Using a Quartz Crystal Microbalance, ***Nanotechnology*** 27, 475506 (2016) [link]
28. Q. Ge*, A. H. Sakhaei, **Howon Lee**, C. K. Dunn, N. X. Fang*, and M. L. Dunn*, Multimaterial 4D Printing with Tailorable Shape Memory Polymers, ***Scientific Reports*** 6, 31110 (2016) [link]
    - Highlighted on **MIT homepage cover** on 8/29/16
    - *Scientific Reports* Editor's choice: polymer chemistry [link]
    - Featured in news outlets including *MIT News*, *Eurekalert*, *Phys.Org*, *etc*.
29. K. Jang, J. You, C. Park, H. Park, J. Choi, C.-H. Choi, J. Park, **Howon Lee**, S. Na*, Ultra-sensitive detection of zinc oxide nanowires using a quartz crystal microbalance and phosphoric acid DNA, ***Nanotechnology*** 27, 365501 (2016) [link]
30. J. B. Hopkins, Y. Song, **Howon Lee**, N. X. Fang, and C. M. Spadaccini*, Polytope Sector-based Synthesis and Analysis of Microstructural Architectures with Tunable Thermal Conductivity and Expansion, ***Journal of Mechanical Design*** 138, 051401 (2016) [link]
31. C. Park, K. Jang, S. Lee, J. You, S. Lee, H. Ha, K. Yun, J. Kim, **Howon Lee**, J. Park, S. Na*, High Sensitive, Direct, and Label-Free Technique for Hg2+ Detection by Using Kelvin Probe Force Microscopy, ***Nanotechnology*** 26, 305501 (2015) [link]
32. X. Zheng*, **Howon Lee**, T. Weisgraber, M. Shusteff, J. Deotte, E. Duoss, J. Kuntz, M. Biener, Q. Ge, J. Jackson, S. O. Kucheyev, N. X. Fang*, and C. Spadaccini*, Ultralight and Ultra-Stiff Mechanical Metamaterials, ***Science*** 344, 1373 (2014) [link]
    - Highlighted on **MIT homepage cover** on 6/20/14
    - Featured in news outlets including *MIT News*, *Eurekalert*, *Phys.Org*, *R&D Magazine*, *etc*.

33. **Howon Lee**, J. Zhang, H. Jiang, and N. X. Fang*, Prescribed Pattern Transformation in Swelling Gel Tube by Elastic Instability, ***Physical Review Letters*** 108, 214304 (2012) [link]
    - Highlighted on **MIT homepage cover** on 5/3/12
    - Featured in news outlets including *MIT News*, *APS Physics Focus*, *Eurekalert*, *Phys.Org*, *etc*.
34. **Howon Lee** and N. X. Fang*, Micro 3D Printing using a Digital Projector and Its Application in the Study of Soft Materials Mechanics, ***Journal of Visualized Experiments*** (69), e4457, doi:10.3791/4457 (2012) [link]
35. X.R. Zheng, J. Deotte, M. Allonso, G. Farquar, T. Weisgraber, S. Gemberling, **Howon Lee**, N. Fang, and C.M. Spadaccini*, Design and Optimization of an LED Projection Micro-Stereolithography Three-Dimensional Manufacturing System, ***Review of Scientific Instruments*** 83, 125001 (2012) [link]
36. **Howon Lee**, C. Xia, and N. X. Fang*, First Jump of Microgel; Actuation Speed Enhancement using Elastic Instability**,** ***Soft Matter*** 6, 4342-4345 (2010) [link]
37. C. Xia, **Howon Lee**, and N. X. Fang*, Solvent Driven Micro Polymeric Device, ***Journal of Micromechanics and Microengineering*** 20, 085030 (2010) [link]

PEER-REVIEWED CONFERENCE PROCEEDINGS (Students I advised or co-advised are underlined; Corresponding authors* are identified by *)

1. D. Han, J. Tobia, N. X. Fang and **Howon Lee***, Rapid Multi-material 3D Printing with Projection Micro-Stereolithography Using an Enclosed Printing Chamber, *Proceedings of WCMNM* (2018) (***Best Paper Award***)
2. C. Yang, M. Boorugu, A. Dopp, and **Howon Lee***, Lightweight Microlattice with Tunable Mechanical Properties Using a 3D Printed Shape Memory Polymer, *Proceedings of ASME MSEC* (2018)
3. D. Han, Z. Lu, and **Howon Lee***, Projection Micro-Stereolithography of Temperature Responsive and Mechanically Tough Hydrogels, *Proceedings of ASME MSEC* (2016) [link]
4. B. Konh, H. H. Lee, V. P. Martin, V. Zhao, D. Han, **Howon Lee**, P. Hutapea*, Design, Development and Evaluation of a Two Way Actuated Steerable Needle, *Proceedings of ASME SMASIS* (2015)* [link]
5. J. B. Hopkins, **Howon Lee**, N. X. Fang, and C. M. Spadaccini*, Polytope Sector-Based Synthesis and Analysis of Microarchitectured Materials with Tunable Thermal Conductivity and Expansion, *Proceedings of ASME IDETC/CIE* (2015) [link]
6. **Howon Lee**, J. Zhang, J. Lu, J. Georgiadis, H. Jiang, and N. X. Fang*, Coupled Non-Fickian Diffusion and Large Deformation of Hydrogel, *Mechanics of Time-Dependent Materials and Processes in Conventional and Multifunctional Materials* 3 (2011) 25-28 [link]
7. **Howon Lee**, C. Xia, and N. X. Fang*, Biomimetic Microactuator Powered by Polymer Swelling, *Proceedings of the ASME IMECE* 2008 (2008) 765-769 [link]
8. J. H. Kim, **Howon Lee**, J. M. Lee*, and D. H. Yoo, Vibration Analysis of Steering System for Shimmy Reduction, *Proceedings of Korean Society of Automotive Engineering* 2 (2005) 1108-1116

PRESENTATIONS AND SEMINARS

INVITED TALKS AND SEMINARS

1. Howon Lee, Digital 4D Printing for Engineered Living Materials, Advanced Photonic Congress, Busan, July 2023
2. Howon Lee, Architected Soft Matter and the 4th Dimension, IEEE NEMS, Jeju, May 2023
3. Howon Lee, Digital 4D Printing for Engineered Living Materials, Korean Institute of Metals and Materials, Jeju, Apr 2023
4. Department of Mechanical Engineering, **Inha Univ.**, Mar 2023
5. Korean Ceramic Society Fall Meeting, Oct 2022
6. Advanced Industrial Strategy Program, Seoul National University, Oct 2022
7. Department of Advanced Materials Science & Engineering, **SungKyunKwan Univ.**, Jun 2022

8. Hyundai Mobis Expert Seminar, April 2022 (online)
9. Mechanical Engineering Colloquium, SNU, April 2022
10. National Nanofab Center, Daejeon Korea, April 2022
11. **American Physics Society (APS) March Meeting**, Chicago IL, Mar 2022 (scheduled)
12. Next Generation Dignostics Study Group Seminar, Seoul National University Bundang Hospital (held virtually), Feb 2022
13. Nano Convergence Conference 2022, Gonjiam Resort, Jan 2022
14. Korea Institute of Machinery and Materials, Daejeon Korea, Dec 2021
15. 2021 SNU-IIS Lecture Series, Virtual, Nov 2021
16. Micro Nano Systems (MNS) Conference Fall, Nov 2021
17. Department of Robotics Engineering, **DGIST**, Nov 2021 (held virtually)
18. Special Seminar, **POSTECH**, Oct 2021
19. Department of Mechanical Engineering, **Sogang University**, Sep 2021 (held virtually)
20. LG Electronics Division of Home Appliances and Air Solution, Sep 2021 (held virtually)
21. Samsung Electronics Division of Device Solutions, Sep 2021 (held virtually)
22. Samsung Electronics Global Technology Center, Aug 2021 (held virtually)
23. Korea Research Institute of Chemical Technology, Daejeon Korea, July 2021
24. Korea Institute of Machinery and Materials, July 2021
25. Korean Ceramic Conference, Jun 2021
26. Korea Institute of Materials Science, Apr 2021
27. Intelligent Mechanical Engineering Systems Seminar, Department of Mechanical Engineering, Seoul National University, Apr 2021 (held virtually)
28. Mechanical Engineering Department Seminar, Yonsei University, Mar 2021 (held virtually)
29. Center for Additive Manufacturing, University of Nottingham, Mar 2021 (held virtually)
30. Sindo-Ricoh Technology Research Center Seminar, Mar 2021
31. Soft Robotic Research Center Annual Workshop, Seoul National University, Feb 2021 (held virtually)
32. Civil Engineering Department Seminar, **University of Southern California**, Apr 2020 (held virtually)
33. Mechanical and Aerospace Engineering Department Seminar, **University of California at Irvine**, Apr 2020 [link] (held virtually)
34. **DARPA Microsystems and Exploratory Council 3D Printing Complex Microsystems Workshop**, Carnegie Mellon University, Pittsburgh PA, Mar 2020 (held virtually)
35. Rutgers Honors College, Feb 2020
36. Mechanical Engineering Department Seminar, **Stevens Institute of Technology**, Nov 2019
37. Mechanical Engineering Department Seminar, **SUNY Binghamton University**, Nov 2019
38. Mechanical and Aerospace Engineering Department Seminar, **Ohio State University**, Oct 2019
39. Mechanical Engineering Department Special Seminar, **Seoul National University**, Korea, Sep 2019
40. Mechanical Engineering Department Special Seminar, **KAIST**, Korea, July 2019
41. Agency for Defense Development, Daejeon Korea, July 2019
42. International Young Scientist Forum on Smart Manufacturing and Artificial Intelligence, Shanghai China, July 2019
43. School of Civil Engineering Seminar, **Southeast University**, Nanjing China, July 2019
44. Frontiers in Applied and Computational Mathematics, Newark NJ, May 2019 [link]
45. International Workshop on Multiscale Innovative Materials and Structures, Salerno, Italy, Mar 2019 (**Keynote Lecture** for the workshop)
46. The Global Business and Academic Forum on Tissue Engineering and Regenerative Medicine, Baltimore MD, Oct 2018 (Featured Speaker)
47. Workforce Development on Bioprinting, New Jersey Center for Biomaterials, Piscataway NJ, Oct 2018
48. Mechanical Engineering Department Seminar, **City College of New York**, Sep 2018
49. Korean-American Scientist and Engineers Association US-Korea Conference, Brooklyn NY, Aug 2018

50. South China University of Technology (SCUT) Student Program, Rutgers University, Piscataway NJ, Aug 2018
51. Material Research Society Spring Meeting, Apr 2018 (**Keynote** in the Symposium on Advances in Additive Manufacturing – Materials, Processes and Devices)
52. ASME IMECE Young Medalist Symposium, Nov 2017
53. South China University of Technology (SCUT) Student Program, Rutgers University, Piscataway NJ, Aug 2017
54. University of Washington 3D Printing Symposium on Additive Manufacturing and Functional Materials, **University of Washington**, Jun 2017 [link]
55. **ARO Workshop** on The Future of Vibration Energy Transfer in Solids and Structures: Needs and Opportunities, University of Washington, Oct 2016
56. Society of Engineering Science Annual Technical Meeting at University of Maryland, Oct 2016 (**Keynote** for the Symposium on Non-linear Response of Highly Deformable Structures)
57. South China University of Technology (SCUT) Student Program, Rutgers University, Piscataway NJ, July 2016.
58. ASME Student Professional Development Conference, Rutgers University, Apr 2016
59. Special Seminar, **Bell Labs**, Apr 2016
60. Department of Mechanical Design and Robot Engineering, **Seoul National University of Science and Technology**, Aug 2015
61. Aerospace Engineering Department Seminar, **University of Washington**, May 2015
62. Chemistry and Chemical Biology Department Colloquium, **Rutgers University**, Mar 2015
63. Mechanical and Industrial Engineering Department Seminar, **New Jersey Institute of Technology**, Mar 2015
64. Society for the Advancement of Materials and Process Engineering, Dec 2014
65. Bridgewater-Raritan High School, Dec 2014
66. Material Science and Engineering Department Seminar, **Rutgers University**, Oct 2014
67. Mechanical Engineering Department Seminar, **Temple University**, Oct 2014
68. Special Seminar, Korea Institute of Science and Technology (**KIST**), Korea, May 2014
69. Special Seminar, Department of Mechanical Engineering, **Korea University**, Korea, Jul 2013
70. Special Seminar, Department of Mechanical Engineering, **Sogang University**, Korea, Jul 2013
71. Special Seminar, Department of Chemical Engineering, **University of Seoul**, Korea, Jun 2013
72. Mechanical and Aerospace Engineering Department Seminar, **Rutgers University**, Feb 2013
73. Mechanical and Industrial Engineering Department Seminar, **University of Illinois at Chicago**, Feb 2013
74. Mechanical Engineering Department Seminar, **Clemson University**, Jan 2013
75. Squishy Physics Seminar, **Harvard University**, Sep 2012
76. Mechanical and Aerospace Engineering Colloquium, **Cornell University**, May 2012
77. **Samsung Electronics** Mechatronics & Manufacturing Technology Center, Korea, Jan 2012
78. Micro/Nano Seminar, **MIT**, Apr 2011
79. Bio Interest Group Seminar, **UIUC**, Nov 2010
80. Nano-Hour Seminar, **UIUC**, Sep 2010
81. Nano-CEMMS Summer Workshop for High School Teachers, UIUC, Jul 2010

CONFERENCE PRESENTATIONS (presenter*)

1. Howon Lee, Digital 4D Printing for Engineered Living Materials, Advanced Photonic Congress, Busan, July 2023 – Invited talk
2. Howon Lee, Architected Soft Matter and the 4th Dimension, IEEE NEMS, Jeju, May 2023 – Invited talk
3. Howon Lee, Digital 4D Printing for Engineered Living Materials, Korean Institute of Metals and Materials, Jeju, Apr 2023 – Invited talk

4. Y. Wang, J. An, S. Jeong, Howon Lee, Programming Molecular Order of a Liquid Crystal Elastomer Using Magnetic-field-assisted DLP Printing, Material Research Society March Meeting, San Francisco, Apr 2023
5. Howon Lee, 4D Printing: Additive Manufacturing of Programmable Soft Matter, International Conference of Manufacturing, Machine Design and Tribology, Jeju, Mar 2023
6. Howon Lee, Y. Wang, J. An, S. Jeong, Molecular Alignment Programming of a Liquid Crystal Elastomer Using Magnetic-field-assisted DLP Printing, Korean Society Mechanical Engineering Fall Meeting, Jeju, Nov 2022 – Outstanding Research Award
7. Howon Lee, Y. Wang, J. An, S. Jeong, Molecular Alignment Programming of a Liquid Crystal Elastomer Using Magnetic-field-assisted DLP Printing, Korean Precision Engineering Society Fall Meeting, Daegu, Oct 2022
8. Howon Lee, Towards Tunable Metametarials: Architected Soft Matter and the 4th Dimension, Korean Ceramic Society, KOEX Seoul, Oct 2022 – Invited talk
9. Howon Lee, Architected Soft Matter and the 4th Dimension, APS March Meering, Chicago, IL, Mar 2022 – Invited talk
10. Howon Lee, Digital 4D Printing for Engineered Living Materials, Nano Conversions Conference, Gonjiam, Jan 2023 – Invited talk
11. Howon Lee, 4D Printing with Projection Micro-stereolithography, KMEMS, Anmyeondo, Nov 2022 – Invited talk
12. Howon Lee, Multi-material 3D Printing with Projection Micro-stereolithography, KSME Production&Design, Seoul, Jul 2022
13. Howon Lee, Multi-material Stimuli-Responsive Materials and Its Applications, PRESM, Jeju, Jul 2022
14. Howon Lee, Multi-material Micro 3D Printing with Projection Micro-stereolithography, Korea Ceramics Society, Changwon, Jun 2022
15. Howon Lee, Multi-material Micro 3D Printing with Projection Micro-stereolithography, KSME MicroNano, Busan, Jun 2022
16. Y. Wang*, X. Zuo, A. Mazzeo, Howon Lee, Soft Robots with Reconfigurable and Deactivatable Skeloton, MRS Spring, Virtual, Apr 2021
17. Y. Wang*, X. Zuo, A. Mazzeo, Howon Lee, Soft Robots with Reconfigurable and Deactivatable Endoskeloton, ASME IMECE, Virtual, Nov 2020
18. D. Han, C. Yang, Howon Lee*, Multi-material Micro 3D/4D Printing with Stimuli-responsive Materials, Gordon Research Conference on Multifunctional Materials and Structures, Ventura CA, Jan 2020
19. C. Yang, M. Chadwick, H. Sabaawy, and Howon Lee*, 4D Printed Transformable Cell-Culture Insert for a Standard Well Plate for Rapid Target Validation and Drug Evaluation, ASME IMECE, Salt Lake City UT, Nov 2019
20. C. Yang, M. Boorugu, D. Hang, and Howon Lee*, 4D Printed Reconfigurable, Deployable, and Mechanically Tunable Metamaterials, ASME IMECE, Salt Lake City UT, Nov 2019
21. H. Patel, C. Yang, Howon Lee*, and A. Pelegri, Investigation of Cyclic and Frequency Nanoindentation Effects in Polydimethylsiloxane (PDMS), ASME IMECE, Salt Lake City UT, Nov 2019
22. C. Yang, M. Chadwick, Howon Lee*, and H. Sabaawy, 4D Printed Transformable Cell-Culture Insert for a Standard Well Plate for Rapid Target Validation and Drug Evaluation in Patient Derived Organoids, 56th Annual Meeting of Society of Engineering Science, St. Louis MO, Oct 2019
23. Howon Lee*, 4D Printing with Active Materials, International Young Scientist Forum on Smart Manufacturing and Artificial Intelligence, Shanghai China, July 2019
24. D. Han*, C. Yang, N. Fang, and Howon Lee, Rapid 3D Printing of Multi-Material Structure with Projection Micro-Stereolithography Using Dynamic Fluidic Control, New Jersey Additive Manufacturing Symposium, Rutgers University, Piscataway NJ, Jun 2019
25. Howon Lee*, D. Han, and C. Yang, 4D Printing: Additive Manufacturing of Reconfigurable Soft Materials, New Jersey Additive Manufacturing Symposium, Rutgers University, Piscataway NJ, Jun 2019

26. Howon Lee*, 4D Printing with Stimuli-Responsive Materials, NJIT, Newark NJ, May 2019 (***Invited***)
27. C. Yang, M. Chadwick, Howon Lee, and H. Sabaawy*, 4D printing of programmable smart material for drug screening in patient derived organoids, American Association for Cancer Research (AACR) Annual Meeting, Atlanta GA, Mar 2019
28. Howon Lee*, Micro 3D Printing of Tunable Mechanical Metamaterials, International Workshop on Multiscale Innovative Materials and Structures, Salerno, Italy, Feb 2019 (***Invited***)
29. C. Yang*, M. Boorugu, A. Dopp, and Howon Lee, Lightweight Microlattice with Tunable Mechanical Properties Using a 3D Printed Shape Memory Polymer, Northeast Complex Fluids and Soft Matter Workshop, Rutgers, Jan 2019 (***Best Poster Award***)
30. D. Han*, C. Farino, C. Yang, and Howon Lee, Soft Robotic Manipulation and Locomotion with 3D Printed Electroactive Hydrogel, Northeast Complex Fluids and Soft Matter Workshop, Rutgers, Jan 2019
31. D. Han*, C. Farino, C. Yang, T. Scott, D. Browe, W. Choi, J. Freeman, and Howon Lee, 3D Printing of Electroactive Hydrogel for Soft Robotic Manipulation and Locomotion, ASME IMECE, Pittsburgh PA, Nov 2018
32. D. Han* and Howon Lee, Rapid Multi-material 3D Printing with Projection Micro-Stereolithography Using an Enclosed Printing Chamber, ASME IMECE, Pittsburgh PA, Nov 2018
33. Howon Lee, C. Yang*, M. Boorugu, Lightweight Microlattice with Tunable Mechanical Properties Using 3D Printed Shape Memory Polymer, International Union of Theoretical and Applied Mechanics (IUTAM), Chicago IL, Sep 2018
34. D. Han*, J. Tobia, N. X. Fang and Howon Lee, Rapid Multi-material 3D Printing with Projection Micro-Stereolithography Using an Enclosed Printing Chamber, World Congress of Micro Nano Manufacturing, Slovenia, Sep 2018 (***Best Paper Award***)
35. Howon Lee*, D. Han, C. Yang, 4D Printing: Additive Manufacturing of Reconfigurable Soft Materials, US-Korea Conference, Newark NJ, Aug 2018 (***Invited***)
36. C. Yang, M. Boorugu, A. Dopp, and Howon Lee*, Lightweight Microlattice with Tunable Mechanical Properties Using a 3D Printed Shape Memory Polymer, 55th Annual Meeting of Society of Engineering Science (MSEC), Texas A&M, Jun 2018
37. Howon Lee*, D. Han, and C. Yang, Micro 3D Printing of Responsive Soft Matter, MRS Spring, Phoenix AZ, Apr 2018 (***Invited***)
38. D. Han*, Z. Lu, S. Chester, and Howon Lee, Micro 3D Printing of a Temperature-Responsive Hydrogel and Its Applications, APS March, Los Angeles CA, Mar 2018
39. D. Han*, C. Farino, C. Yang, and Howon Lee, Soft Robotic Manipulation and Locomotion with 3D Printed Electroactive Hydrogel, APS March, Los Angeles CA, Mar 2018
40. Howon Lee*, D. Han, and C. Yang, Micro 3D Printing of Responsive Soft Matter, ASME IMECE, Tampa FL, Nov 2017
41. Howon Lee *, D. Han, and C. Yang, 4D Printing: Additive Manufacturing of Reconfigurable Soft Materials, US-Korea Conference, Washington DC, Aug 2017
42. D. Han, C. Yang, and Howon Lee*, Micro 3D Printing of Stimuli-Responsive Soft Materials, ISGMA, Gyeongju Korea, Jun 2017
43. C. Yang*, M. Boorugu, A. Dopp, and Howon Lee, Lightweight Microlattice with Tunable Mechanical Properties Using 3D Printed Shape Memory Polymer, ASME IMECE, Phoenix AZ, Nov 2016
44. D. Han*, Z. Lu, and Howon Lee, Projection Micro-Stereolithography of Temperature Responsive Hydrogel, ASME IMECE, Phoenix AZ, Nov 2016
45. Howon Lee*, 3D Printing of Soft Active Materials, ASME IMECE, Phoenix AZ, Nov 2016
46. C. Yang*, M. Boorugu, A. Dopp, and Howon Lee, Lightweight Microlattice with Tunable Mechanical Properties Using 3D Printed Shape Memory Polymer, 53th Annual Meeting of Society of Engineering Science, College Park MD, Oct 2016
47. D. Han*, Z. Lu, and Howon Lee, Projection Micro-Stereolithography of Temperature Responsive Hydrogel, 53th Annual Meeting of Society of Engineering Science, College Park MD, Oct 2016

48. Howon Lee*, Harnessing Elastic Instability of Swelling Hydrogels Using Micro 3D Printing, 53th Annual Meeting of Society of Engineering Science, College Park MD, Oct 2016
49. D. Han, Z. Lu, and Howon Lee*, Projection Micro-Stereolithography of Temperature Responsive Mechanically Tough Hydrogels, ASME MSEC, Blacksburg VT, June 2016
50. D. Han*, Z. Lu, and Howon Lee, Micro 3D Printing of Temperature Responsive and Tough Hydrogels, MRS Fall meeting, Boston MA, Dec 2015
51. Howon Lee*, Harnessing Swelling-Induced Elastic Instability of 3D Hydrogels Using Projection Micro-Stereolithography, ASME IMECE, Houston TX, Nov 2015
52. Howon Lee*, J. Lu, J. Georgiadis, and N. X. Fang, Measurement of Concentration Dependent Diffusivity of Water in Hydrogels Using Magnetic Resonance Imaging, 52th Annual Meeting of Society of Engineering Science, College Station TX, Oct 2015
53. Howon Lee* and N. X. Fang, Harnessing Elastic Instability of Swelling Gels Using Projection Micro-Stereolithography, XV PACAM, Champaign IL, May 2015
54. B. Kohn*, Howon Lee, P. Hutapea, Towards the Design and Development of an Active Needle for Therapeutic Procedures, 41st Northeast Bioengineering Conference, RPI, Troy NY, Apr 2015
55. X. Zheng, Howon Lee*, J. Kuntz, T. Weisgraber, M. Shusteff, N. X. Fang, C. Spadaccini, Ultra-Light Ultra-Stiff Mechanical Metamaterials, 17th USNCTAM, East Lancing MI, Jun 2014
56. Howon Lee*, 3D Microfabrication of Soft Active Materials, 2nd Northeast Complex Fluids and Soft Matter Workshop, Manhattan NY, Jun 2014
57. J. Xu, Howon Lee*, S. Cai, and N. X. Fang, Quest for Flexible Acoustic Circuitry with Acousto-Elastic Metamaterials, ASME IMECE, San Diego CA, Nov 2013
58. Howon Lee*, X. Zheng, J. Deotte, E. Duoss, J. Kuntz, M. Biener, S. Kucheyev, N. X. Fang, and C. Spadaccini, Ultra-Light Ultra-Stiff Mechanical Metamaterials, 50th Annual Meeting of Society of Engineering Science, Brown RI, Jul 2013
59. Howon Lee* and N. X. Fang, Multi-Material Micro 3D Printing for Heterogeneous Integration of Soft Active Materials, MRS Spring meeting, San Francisco CA, Apr 2013
60. Howon Lee*, J. Lu, J. Georgiadis, and N. X. Fang, A Study of the Concentration Dependent Water Diffusivity in Polymer using Magnetic Resonance Imaging, APS March meeting, Baltimore MD, Mar 2013
61. Howon Lee*, M. Chen, T. Gan, P. Doyle, and N. X. Fang, Adaptive Optofluidic Synthesis of Information-Rich Micro-Particles, 54th New England Complex Fluid Workshop, New Haven CT, Mar 2013
62. Howon Lee* and N. X. Fang, Multi-material micro 3D printing of polymers and its applications, MRS Fall meeting, Boston MA, Nov 2012
63. Howon Lee*, C. Xia, and N. X. Fang, Multi-Material Projection Micro-Stereolithography and Its Applications, International Congress on Applications Lasers and Electro-Optics, Anaheim CA, Sep 2012
64. X. Zheng*, J. Deotte, Howon Lee, T. Weisgraber, J. Xu, C. Xia, M. Alonso, G. Farquar, N. Fang, and C.M. Spadaccini, Fast, Flexible, Additive Fabrication of Complex Three-Dimensional Structures with Micro-Scale Architectures using Projection Micro-Stereolithography, MRS Spring meeting, San Francisco CA, Apr 2012
65. Howon Lee*, K. H. Fung, and N. X. Fang, Dynamic Actuation and Pattern Formation with Local Swelling in Microgels, APS March meeting, Boston MA, Mar 2012
66. Howon Lee*, J. Zhang, H. Jaing, and N. X. Fang, Wrinkled Pattern Formation of Tubular Hydrogel using Swelling-Induced Buckling, International Conference on the Mechanics of the Biomaterials and Tissues, HI, Dec 2011
67. Howon Lee*, K. H. Fung, and N. X. Fang, Pattern Formation by Swelling-Induced Buckling of Gels for Tunable Acoustic Resonator, 48th Annual Meeting of Society of Engineering Science, Evanston IL, Oct 2011
68. Howon Lee* and N. X. Fang, 3D Micro-Fabrication of Functional Structures and Devices, New England Workshop on the Mechanics of Materials and Structures, Cambridge MA, Sep 2011

69. Howon Lee, T. Weisgraber, J. Xu, C. Xia, M. Alonso, G. R. Farquar, N. X. Fang, and C. M. Spadaccini*, Fabrication of Engineered Material Microstructure using Projection Micro-stereolithography, Technologies for Future Micro/Nano Manufacturing, Napa CA, Aug 2011
70. Howon Lee*, J. Zhang, J. Lu, J. Georgiadis, H. Jiang, and N. X. Fang, Coupled Non-Fickian Diffusion and Large Deformation of Hydrogel, Annual Meeting of Society of Experimental Mechanics, Uncasville CT, Jun 2011
71. Howon Lee*, J. Zhang, Y. An, H. Jiang, and N. X. Fang, Buckling of Swelling Gels under Constraints, APS March meeting, Dallas TX, Mar 2011
72. Howon Lee*, C. Xia, and N. X. Fang, Digital 3D Micro-Fabrication of Functional Materials and Bio-Inspired Applications, NSF CMMI meeting, Atlanta GA, Jan 2011
73. Howon Lee*, J. Zhang, C. Xia, Y. An, H. Jiang, and N. X. Fang, Theoretical and Experimental Study of Coupled Case II Diffusion and Large Deformation of Hydrogels, MRS Spring meeting, San Francisco CA, Apr 2010
74. C. Xia, Howon Lee*, and N. X. Fang, Three Dimensional Biologically Inspired Microvascular Systems, 2nd International Conference of Self-Healing Materials, Chicago IL, Jun 2009
75. C. Xia*, Howon Lee, and N. X. Fang, Polymeric Micro Beam Device Powered by Polymer Swelling, ASME IMECE, Lake Buena Vista FL, Nov 2009
76. Howon Lee*, C. Xia, and N. X. Fang, Rapid Hydrogel Microactuator using Elastic Instability, APS March meeting, Pittsburgh PA, Mar 2009
77. Howon Lee*, C. Xia, and N. X. Fang, Biomimetic Microactuator Powered by Polymer Swelling, ASME IMECE, Boston MA, Nov 2008
78. C. Xia*, Howon Lee, A. Cox, and N. X. Fang, Micro Stereo Lithography: A Review, International Workshop on Microfactories, Evanston IL, Oct 2008
79. C. Xia*, Howon Lee, and N. X. Fang, 3D Polymeric Devices Driven by Surface Microfluidic Capillaries, ASME MicroNano, Hong Kong, Jun 2008

II. TEACHING AND MENTORING

RESEARCH ADVISING

AT SEOUL NATIONAL UNIVERSITY

DOCTORAL STUDENT ADVISEES (4)

- Kijoong Kim (03/2023 – present): PhD student at Seoul National University
- Jinho Son (03/2023 – present): PhD student at Seoul National University
- Hongseok Kim (03/2022 – present): PhD student at Seoul National University
- Hyunggyu Kim (03/2022 – present): PhD student at Seoul National University
- Guksung Kim (03/2022 – present): PhD student at Seoul National University
- Jongwon Ahn (07/2021 – present): PhD student at Seoul National University
- Jaesung Park (03/2022 – 02/2023): PhD student at Seoul National University

MASTER STUDENT ADVISEES (4, * 1 female students)

- Joongha Kim (03/2023 – present): MS student at Seoul National University
- Yoonsup Choi (03/2023 – present): MS student at Seoul National University
- Seungwook Hong (03/2022 – present): MS student at Seoul National University
- Seunggyu Ko (03/2022 – present): MS student at Seoul National University
- Myeongrae Choe (09/2021 – present): MS student at Seoul National University

- Yoonseo Choi* (09/2021 – present): MS student at Seoul National University

UNDERGRADUATE STUDENT ADVISEES (10, * 2 female students)
- Hyewon Kim* (09/2022 – 12/2022): BS student at Seoul National University
- Hyuk Shim (09/2022 – present): BS student at Seoul National University
- Jaewoong Choi (06/2022 – 08/2022): BS student at Seoul National University
- Geonwoo Kim (05/2022 – 07/2022): BS student at University of Illinois at Urbana-Champaign
- Wooseok Kim (01/2022 – 06/2022): BS student at Seoul National University
- Sehui Jeong* (03/2021 – 06/2022): BS student at Seoul National University
- Hyunggue Kim (03/2021 – 02/2022): BS student at Seoul National University
- Seungbum Nam (03/2021 – 02/2022): BS student at Seoul National University
- Seunggyu Ko (03/2021 – 02/2022): BS student at Seoul National University
- Jinsu Kim (06/2021 – 12/2021): BS student at Seoul National University

PHD DISSERTATION COMMITTEE (14; 11 internal, 3 external)
- Yongwoo Kang, Materials Science Engineering, Seoul National University (Advisor: Prof. Jeongyun Sun)
- Jungseop Lee, Mechanical Engineering, Seoul National University (Advisor: Prof. Noo-Li Jeon)
- Jungmin Heo, Mechanical Engineering, Seoul National University (Advisor: Prof. Do-nyun Kim)
- Hanbi Jeong, Mechanical Engineering, Seoul National University (Advisor: Prof. Hoyoung Kim)
- Chulmin Cho, Mechanical Engineering, Seoul National University (Advisor: Prof. Seunghwan Ko)
- Bosung Seo, Mechanical Engineering, Seoul National University (Advisor: Prof. Byungdong Yoon)
- Wongon Kim, Mechanical Engineering, Seoul National University (Advisor: Prof. Byungdong Yoon)
- Yihua Hao, Mechanical and Aerospace Engineering, **Rutgers University** (Advisor: Prof. James Guo)
- Wonjoon Moon, School of Dentistry, Seoul National University (Advisor: Prof. Shinhye Jeong)
- Yungtaek Kim, Mechanical Engineering, Seoul National University (Advisor: Prof. Noo-Li Jeon)
- Sooryong Kim, Mechanical Engineering, Seoul National University (Advisor: Prof. Noo-Li Jeon)
- SeungRyeol Lee, Mechanical Engineering, Seoul National University (Advisor: Prof. Noo-Li Jeon)
- Keven Alkhury, Mechanical and Industrial Engineering, **New Jersey Institute of Technology** (Advisor: Prof. Shawn Chester)
- Nikola Bosnjak, Mechanical and Industrial Engineering, **New Jersey Institute of Technology** (Advisor: Prof. Shawn Chester)

<u>AT RUTGERS</u>

DOCTORAL STUDENT ADVISEES (3)
- Yueping Wang (08/2018 – 11/2022): PhD student at Rutgers University
- Chen Yang (08/2015 – 12/2020): PhD student at Rutgers University
- Daehoon Han (08/2014 – 11/2019): PhD student at Rutgers University (currently a postdoc at University of Minnesota)

MASTER STUDENT ADVISEES (7, * 1 female students)
- Ishan Bhalerao (05/2016 – 10/2018): MS student at Rutgers University
- Riddish Morde (09/2016 – 01/2018): MS student at Rutgers University
- Manish Boorugu (05/2016 – 01/2018): MS student at Rutgers University
- Zhaocheng Lu (01/2015 – 01/2017): MS student at Rutgers University
- Jay Tobia (08/2015 – 05/2016): MS student at Rutgers University
- Emanuele Vignali (07/2015 – 01/2016): MS student at University of Pisa, Italy (visiting graduate student, University of Pisa)
- Shweta Thapa* (06/2014 – 12/2014): MS student at Rutgers University

UNDERGRADUATE STUDENT ADVISEES (41, * 6 female students)

- Michael Philip (06/2020 – 12/2020): BS student at Rutgers University (NJSGC fellowship)
- Paul Wang (05/2019 – 12/2020): BS student at Rutgers University (Aresty Research Assistant)
- Michael Tsai (05/2019 – 12/2020): BS student at Rutgers University (NJSGC fellowship)
- Om Prabhu (05/2019 – 12/2020): BS student at Rutgers University (NJSGC fellowship)
- Declan Obrien (05/2019 – 12/2020): BS student at Rutgers University
- Alexander Corring (05/2019 – 03/2020): BS student at Rutgers University (NJSGC fellowship)
- Amy Su* (05/2019 – 08/2019): BS student at Rutgers University
- Aayushi Ghandi (05/2019 – 08/2019): BS student at Rutgers University
- Santiago Ruiz-Chanci (06/2018 – 05/2019): BS student at Rutgers University (Aresty Research Assistant)
- Raymond Martin (05/2018 – 12/2018): BS student at Rutgers University (NJSGC fellowship)
- Jaewook Jung (05/2018 – 12/2018): BS student at Rutgers University
- Noor Mahmood (05/2018 – 12/2018): BS student at Rutgers University
- Brian Lai (08/2017 – 12/2018): BS student at Rutgers University (PhD student at U. Mich. – Ann Arbor)
- Sohan Ganguli (05/2018 – 08/2018): BS student at Rutgers University
- Christopher Ragusa (05/2018 – 08/2018): BS student at Rutgers University
- Cyril Nwako (09/2017 – 05/2018): BS student at Rutgers University
- Jie Ren (09/2017 – 05/2018): BS student at Rutgers University (MS student at Columbia Univ.)
- Shivani Topiwala* (06/2017 – 05/2018): BS student at Rutgers University (Aresty Research Assistant)
- Nithya Iyer* (06/2017 – 05/2018): BS student at Rutgers University
- Adeela Khatoon* (06/2017 – 05/2018): BS student at Rutgers University
- Andrew Duffer (06/2017 – 05/2018): BS student at Rutgers University (Aerospace engineer at ES Aero)
- Abhishek Chopra (06/2017 – 08/2017): BS student at Rutgers University (PhD student at RPI)
- Alan Jarvis (05/2016 – 05/2016): BS student at Rutgers University
- Andrew Setz-Kelly (05/2016 – 05/2016): BS student at Rutgers University
- Andrew Dopp (05/2016 – 05/2016): BS student at Rutgers University (BME) (PhD student at Penn State)
- Cindy Farino* (02/2016 – 05/2016): BS student at Rutgers University (BME) (PhD student at U. Delaware)
- Joonhwan Oh (11/2015 – 12/2016): BS student at Rutgers University
- Minseok Kwak (11/2015 – 12/2016): BS student at Rutgers University (MSE) (MS student at UC Irvine)
- Anand Patel (08/2014 – 12/2016): BS student at Rutgers University (MSE) (Aresty Research Assistant) (PhD student at Rutgers)
- Gustavo Silva-Huaman (05/2016 – 08/2016): BS student at Rutgers University
- Ksitiji Saste (05/2016 – 08/2016): BS student at Rutgers University (BME)
- Wonyoung Choi* (01/2015 – 05/2016): BS student at Rutgers University
- Daniel Nemeth (07/2014 – 05/2016): BS student at Rutgers University
- Jason Kim (05/2015 – 05/2016): BS student at Rutgers University
- Peter Tran (08/2015 – 12/2015): BS student at Rutgers University
- Kent Christian (05/2015 – 12/2015): BS student at Rutgers University
- Michael Czerhoniak (03/2015 – 05/2015): BS student at Rutgers University
- Jay Tobia (08/2014 – 05/2015): BS student at Rutgers University (J. J. Slade Scholar, Aresty Research Assistant) (Desktop Metal)
- Andrew Stewart (08/2014 – 05/2015): BS student at Rutgers University
- Jordan Rafalko (08/2014 – 05/2015): BS student at Rutgers University
- Omara Ali* (09/2014 – 12/2014): BS student at Rutgers University

PHD DISSERTATION COMMITTEE (12; 9 internal, 3 external)

- Wei Wang, 2020, Mechanical Engineering, Rutgers University (Advisor: Liping Liu)
- Xiyue Zou, 2019, Mechanical Engineering, Rutgers University (Advisor: Aaron Mazzeo)

- Bowen Huang, 2019, Mechanical Engineering, Rutgers University (Advisor: Hae Chang Gea)
- Medjal Alqahtani, 2019, Industrial and Systems Engineering, Rutgers University (Advisor: E. A. Elsayed and M. K. Jeong)
- Tian Jin, 2019, Mechanical Engineering, Rutgers University (Advisor: Hae Chang Gea)
- Mohammad Pelaschi, 2018, Mechanical Engineering, **University of Victoria** (Advisor: Prof. Martin Jun)
- Jingjin Xie, 2018, Mechanical Engineering, Rutgers University (Advisor: Aaron Mazzeo)
- Nikola Bosnjak, 2017, Mechanical and Industrial Engineering, **New Jersey Institute of Technology** (Advisor: Prof. Shawn Chester)
- Xiang Yang, 2017, Mechanical Engineering, Rutgers University (Advisor: Hae Chang Gea)
- William Mozet, 2016, Mechanical Engineering, Rutgers University (Advisor: Prof. Stephen Tse)
- Shannon Edward Bakarich, 2016, Intelligent Polymer Research Institute, **University of Wollongong**, Australia (Advisor: Prof. Geoffrey M. Spinks)
- Huihui Qi, PhD, 2014, Mechanical Engineering, Rutgers University (Advisor: Prof. Hae Chang Gea)

MASTER OF SCIENCE THESIS COMMITTEE (13)

- Dylan Kovacevich, MS, 2020, Mechanical Engineering, Rutgers University (Advisor: Prof. Jonathan Singer)
- Parth Patel, MS, 2019, Mechanical Engineering, Rutgers University (Advisor: Prof. Qingze Zou)
- Hinal Patel, MS, 2019, Mechanical Engineering, Rutgers University (Advisor: Prof. Assimina Pelegri)
- Mohit Waskar, MS, 2018, Mechanical Engineering, Rutgers University (Advisor: Prof. Qingze Zou)
- Robert DeSimone, MS, 2018, Mechanical Engineering, Rutgers University (Advisor: Prof. Assimina Pelegri)
- Jaiming Li, MS, 2018, Mechanical Engineering, Rutgers University (Advisor: Prof. Hae Chang Gea)
- Michael Czerhoniak, MS, 2018, Mechanical Engineering, Rutgers University (Advisor: Prof. F. Javier Diez)
- Muthanna K. Kareem, MS, 2018, Mechanical Engineering, Rutgers University (Advisor: Prof. Assimina Pelegri)
- Jeffrey Wang, MS, 2017, Packaging Engineering, Rutgers University (Advisor: Prof. Hae Chang Gea)
- Yijun Wang, MS, 2016, Mechanical Engineering, Rutgers University (Advisor: Prof. Mitch Denda)
- Xiangyu Gong, MS, 2015, Mechanical Engineering, Rutgers University (Advisor: Prof. Aaron Mazzeo)
- Guanglei Zhu, MS, 2015, Mechanical Engineering, Rutgers University (Advisor: Prof. Liping Liu)
- Chen Yang, MS, 2015, Mechanical Engineering, Rutgers University (Advisor: Prof. Aaron Mazzeo)
- Agrim Bhalla, MS, 2015, Mechanical Engineering, Rutgers University (Advisor: Prof. Mitch Denda)

TEACHING AND OUTREACH

CLASSES TAUGHT (6 undergraduate & 3 graduate courses)

AT SEOUL NATIONAL UNIVERSITY

- Spring 2023 - Advanced Manufacturing Processes (M3228.000600)
  (Enrollment: 32, overall rating: **4.78** / 5)
- Spring 2022 - Solid Mechanics (M2794.001000)
  (Enrollment: 59, overall rating: **4.71** / 5)
  - Advanced Manufacturing Processes (M3228.000600)
  (Enrollment: 48, overall rating: **4.45** / 5)
- Fall 2021 - Creative Engineering Design (400.018)
  (Enrollment: 46, overall rating: **4.32** / 5)
- Spring 2021 - Precision Manufacturing Processes (M2794.012500) (Online)
  (Enrollment: 38, overall rating: **4.69** / 5)

AT RUTGERS UNIVERSITY

- Fall 2020
  - Additive Manufacturing: Fundamentals and Applications (16:650:531:01)
    (Enrollment: 16, overall rating: **4.63** / 5)
  - Additive Manufacturing: Fundamentals and Applications (**Online**) (16:650:531:90)
    (Enrollment: 2, overall rating: **4.63** / 5)
  - Design and Manufacturing I (14:650:467)
    (Enrollment: 10, overall rating: **2.75** / 5)
- Spring 2020
  - Introduction to Mechanics of Materials (14:650:291)
    (Enrollment: 137, overall rating: **4.16** / 5)
  - Design and Manufacturing II (14:650:467)
    (Enrollment: 10, overall rating: **2.50** / 5)
  - The Byrne Seminar: RU3D? 3D Printing and the Future of How We Make Things (01:090:101:20)
    (Enrollment: 20, overall rating: **3.91** / 5)
- Fall 2019
  - Additive Manufacturing: Fundamentals and Applications (16:650:531:01)
    (Enrollment: 18, overall rating: **4.36** / 5)
  - Additive Manufacturing: Fundamentals and Applications (**Online**) (16:650:531:90)
    (Enrollment: 7, overall rating: **4.80** / 5)
  - Design and Manufacturing I (14:650:467)
    (Enrollment: 10, overall rating: **3.33** / 5)
  - The Byrne Seminar: RU3D? 3D Printing and the Future of How We Make Things (01:090:101:63)
    (Enrollment: 18, overall rating: **4.27** / 5)
- Spring 2019
  - Introduction to Mechanics of Materials (14:650:291)
    (Enrollment: 128, overall rating: **4.26** / 5)
  - Design and Manufacturing I (14:650:467)
    (Enrollment: 11, overall rating: **4.63** / 5)
- Fall 2018
  - Additive Manufacturing: Fundamentals and Applications (16:650:606:01)
    (Enrollment: 14, overall rating: **4.18** / 5)
  - Design and Manufacturing I (14:650:467)
    (Enrollment: 11, overall rating: **4.57** / 5)
- Spring 2018
  - Additive Manufacturing: Fundamentals and Applications (16:650:606:02)
    (Enrollment: 20, overall rating: **4.31** / 5)
  - Design and Manufacturing II (14:650:468)
    (Enrollment: 11, overall rating: **5.00** / 5)
- Fall 2017
  - Introduction to Mechanics of Materials (14:650:291)
    (Enrollment: 130, overall rating: **4.33** / 5)
  - Design and Manufacturing I (14:650:467)
    (Enrollment: 11, overall rating: **5.00** / 5)
- Spring 2017
  - Introduction to Mechanics of Materials (14:650:291)
    (Enrollment: 161, overall rating: **3.98** / 5)
  - Design and Manufacturing II (14:650:468)
    (Enrollment: 11, overall rating: **4.25** / 5)
  - Mechanical Engineering Colloquium (16:650:607)
    (Enrollment: 64, overall rating: **4.35** / 5)
- Fall 2016
  - Advanced Mechanics of Materials (16:650:550)
    (Enrollment: 22, overall rating: **4.57** / 5)
  - Design and Manufacturing I (14:650:467)
    (Enrollment: 11, overall rating: --- / 5)
  - Mechanical Engineering Colloquium (16:650:607)

(Enrollment: 94, overall rating: --- / 5)

- Spring 2016 - Design of Mechanical Components (14:650:342)
  (Enrollment: 136, overall rating: **3.98** / 5)
  - Design and Manufacturing II (14:650:468)
  (Enrollment: 11, overall rating: **5.00** / 5)
- Fall 2015 - Introduction to Mechanics of Materials (14:650:291)
  (Enrollment: 108, overall rating: **4.09** / 5)
  - Design and Manufacturing I (14:650:467)
  (Enrollment: 11, overall rating: **5.00** / 5)
- Spring 2015 - Design of Mechanical Components (14:650:342)
  (Enrollment: 103, overall rating: **3.80** / 5)
  - Design and Manufacturing II (14:650:468)
  (Enrollment: 7, overall rating: **5.00** / 5)
- Fall 2014 - Introduction to Mechanics of Materials (14:650:291)
  (Enrollment: 104, overall rating: **4.15** / 5)
  - Design and Manufacturing I (14:650:467)
  (Enrollment: 7, overall rating: **5.00** / 5)
- Spring 2014 - Introduction to Mechanics of Materials (14:650:291)
  (Enrollment: 117, overall rating: **3.46** / 5)

SENIOR DESIGN PROJECTS ADVISED

- 2019-2020
  1. 3D printing with recycled plastic bottles (4 students)
  2. Ceramic 3D printing (6 students, 1 female)
- 2018-2019
  1. 3D printing with recycled plastic bottles [link] (5 students, 4 females)
     - **Ingenuity Award**
  2. 3D printing with recycled papers [link] (6 students, 4 females)
- 2017-2018
  1. Desktop Chocolate 3D Printer [link] (6 students, 3 females)
     - **Junior's Pick Award**
  2. Continuous 3D Printing Using Digital Animation [link] (5 students, 4 females)
     - **Ingenuity Award**
- 2016-2017
  1. Desktop Food 3D Printer (4 students, 1 female)
     - **Poster Presentation Award**
  2. High-throughput continuous 3D Printing (5 students)
- 2015-2016
  Development of Desktop 3D Printer and Scanner using Microsoft Xbox Kinect
  (11 students, 1 females)
  (International collaboration with Seoul National University of Science and Technology)
     - **Overall Excellence Award – 1st place**
- 2014-2015
  Development of Affordable Desktop 3D Printers (7 students, 1 females)
     - **Overall Excellence Award – 2nd place**
     - **Industrial Advisory Board Outstanding Engineering Design Award**

OTHER EDUCATIONAL CONTRIBUTIONS

- Contributed to the creation of Additive Manufacturing Graduate Certificate, Fall 2019
- Created an online course on Additive Manufacturing (16:650:531:90)
  - First given in Fall 2019: 7 students enrolled (2 from Lockheed Martin, 3 from FAA, 1 from J&J, 1 from RU MBS program)
- Created 2-Day 3D Printing Workshop for working professionals
  - Hosted the first workshop for Colgate-Palmolive, May 28-29, 2019
- Founded Rutgers University 3D Printing Club, *RU3D*, 2018 (https://ru3d.weebly.com)

- Awarded EGC *Rookie of the Year*, May 5, 2019

- Project mentor of high school scholars in the New Jersey Governor's School of Engineering and Technology (NJ GSET), Rutgers University, 2015 (5 high school students, 1 female)
- Development of educational stereolithography setup for undergraduate class (2.674: Micro/Nano Engineering Lab.) at MIT, 2012
- Development of classroom 3D printing program for high school students and teachers, Nano-CEMMS, University of Illinois at Urbana-Champaign, 2010

OUTREACH ACTIVITIES

- 3D Printed Braille Maps for the Blind and Visually Impaired, 2015/03 – present
  (Collaboration with the Joseph Kohn Training Center in New Brunswick)
  - Featured in many news outlets including *Rutgers Today*, *Science Daily*, *Phys.Org*, *EurekAlert*, *R&D Magazine*, *The Daily Targum*, *etc.*

III. SERVICE

INTERNAL UNIVERSITY SERVICE

AT SEOUL NATIONAL UNIVERSITY

- Committee for International Affair, College of Engineering, 2023 – present
- Committee for ME Curriculum, 2023 – present
- Committee for ME Faculty Lunch Seminar Series, 2021 – present
- Faculty in Charge for Pahk's Creative Space, 2021 – present
- Committee for ME Department Machine Shop Renovation, 2021 – 2022

AT RUTGERS UNIVERSITY

- Admission committee for the New Jersey Governor's School of Engineering and Technology, Rutgers University, 2018
- Faculty organizer for the Rutgers Day MAE Event, 2016
- Faculty co-organizer for the Rutgers Day MAE Event, 2015
- Admission committee for the New Jersey Governor's School of Engineering and Technology, Rutgers University, 2016
- Faculty organizer for the MAE Open House, 2016
- Faculty co-organizer for the MAE Open House, 2015
- Planning/coordinating Rapid Prototyping/Materials Characterization Lab for the New Jersey Advanced Manufacturing Institute (NJAMI) in Richard Weeks Hall of Engineering
- MAE Department COVID-19 Task Force, Spring 2020
- MAE Department Online Instruction Preparation Task Force, Spring 2020
- Faculty candidate nominating committee: Henry Rutgers Professor for Advanced Manufacturing, Spring 2018
- MAE Department Colloquium Series organizer, Fall 2016 – Spring 2017
- Faculty in charge of Rutgers Rapid Automated Prototyping and Integrated Design Center (R^2APID), 2016 – present,
- Student Advising/Scholastic Standing Committee, 2015 - present
- Graduate admission committee, 2014 and 2016

EXTERNAL SERVICE

REVIEWER FOR PEER-REVIEWED JOURNALS AND PROCEEDINGS (**112 manuscripts** in **51 journals**)

- AAAS ***Science Advances***
- AAAS *Research*
- **ACS *Applied Materials and Interfaces***
- ACS *Materials Letters*
- ACS *Sustainable Chemistry and Engineering*
- ASME *Journal of Micro and Nano-Manufacturing*
- ASME *Journal of Manufacturing Science and Engineering*
- Cell Press ***Matter***
- Elsevier *Sensors and Actuators A: Physical*
- Elsevier *Applied Materials Today*
- Elsevier ***Additive Manufacturing*** (Outstanding Reviewer, 2017)
- Elsevier *Additive Manufacturing Letters*
- Elsevier *Composites Part B: Engineering*
- Elsevier *Extreme Mechanics Letters*
- Elsevier *Manufacturing Letters*
- Elsevier *Materials and Design*
- Elsevier *Precision Engineering* (Outstanding Reviewer, 2017)
- Elsevier *Journal of Manufacturing Processes*
- Elsevier *Progress in Polymer Science*
- IEEE *Sensors Journal*
- *International Journal of Smart and Nano Materials*
- IOP *Biofabrication*
- IOP *International Journal of Extreme Manufacturing*
- IOP *Smart Materials and Structures*
- IOP *Multifunctional Materials*
- MDPI *Processes*
- *Mechanics of Advanced Materials and Structures*
- *Micro and Nano Systems Letters*
- MRS *Journal of Materials Research*
- ***Nature Communications***
- ***Nature Materials***
- ***Nature Nanotechnology***
- Nature *Microsystems and Nanoengineering*
- Nature *Scientific Reports*
- *PLOS One*
- *Proceedings of Royal Society A*
- RSC *Soft Matter*
- *Soft Robotics*
- Springer *Journal of Precision Engineering and Manufacturing*
- Springer *Journal of Precision Engineering and Manufacturing – Green Technology*
- *Virtual and Physical Prototyping*
- Wiley *Macromolecular Rapid Communications*
- Wiley ***Advanced Materials***
- Wiley ***Advanced Functional Materials***
- Wiley *Advanced Materials Technologies*
- Wiley *Advanced Engineering Materials*
- Wiley ***Advanced Science***

- Wiley *Small*
- World Scientific *International Journal of Applied Mechanics*
- *Journal of Visualized Experiments*
- MARSS 2016
- ASME IMECE
- SME NAMRC

REVIEWER FOR GRANT PROPOSALS
- NSF: CMMI MME, CMMI MOMS, CMMI DMREF, CBET TTP
- American Chemical Society Petroleum Research Fund (ACS PRF)
- European Research Council (ERC) Consolidator Grant 2020
- Helmholtz Young Investigators Group Fund (Germany)
- Research ND Grant Program (North Dakota)

SYMPOSIUM ORGANIZER
- Organizing Committee, ICD3DP, Jeju, Korea, 2023
- "3D/4D Printed Functional Materials and Structures", SES, Minneapolis MN, 2020
- "3D Printed Soft Materials", ASME IMECE, Portland OR, 2020
- "3D/4D Printed Functional Materials and Structures", SES, St. Louis MO, 2019
- "3D Printed Soft Materials", ASME IMECE, Salt Lake City UT, 2019
- "New Jersey Additive Manufacturing Symposium", Piscataway NJ, 2019
- "3D Printed Soft Materials", ASME IMECE, Pittsburgh PA, 2018
- "3D Printed Soft Materials", ASME IMECE, Tampa FL, 2017
- "Mechanics of 3D Printed Materials", SES, Boston MA, 2017
- "Architected Materials", SES, Boston MA, 2017
- "3D Printed Soft Materials", ASME IMECE, Phoenix AZ, 2016
- "Mechanics of 3D Printed Materials", SES, College Park MD, 2016
- "Processes and Materials for 3D Printed Smart Polymers", ASME MSEC, Blacksburg VA, 2016
- "International Undergraduate Research Expo", ASME IMECE, Houston TX, 2015
- "3D Printed Soft Materials", ASME IMECE, Houston TX, 2015
- "Material Processing of Flexible Electronic Devices and Sensors", ASME IMECE, Montreal Canada, 2014

PROFESSIONAL MEMBERSHIP
- American Society of Mechanical Engineering (ASME)
- Society of Engineering Science (SES)
- Materials Research Society (MRS)
- American Physics Society (APS)