Markus J. Buehler, Ph.D.
Mechanical Engineering & Civil and Environmental Engineering
McAfee Professor of Engineering
Massachusetts Institute of Technology
Director and PI, Laboratory for Atomistic and Molecular Mechanics (LAMM)
Lab URL: http://lamm.mit.edu/
Personal website: https://meche.mit.edu/people/faculty/mbuehler@mit.edu
mbuehler@MIT.EDU

EXECUTIVE SUMMARY

Markus J. Buehler is the McAfee Professor of Engineering at MIT (an Institute-wide Endowed Chair), a member of the Center for Materials Science and Engineering, and the Center for Computational Science and Engineering at the Schwarzman College of Computing. He holds academic appointments in Mechanical Engineering and Civil and Environmental Engineering. In his research, Professor Buehler pursues new modeling, design and manufacturing approaches for advanced biomaterials that offer greater resilience and a wide range of controllable properties from the nano- to the macroscale. His interests include a variety of functional material properties including mechanical, optical and biological, linking chemical features, hierarchical and multiscale structures, to performance in the context of physiological, pathological and other extreme conditions. His methods include molecular and multiscale modeling, design, as well as experimental synthesis and characterization. His particular interest lies in the mechanics of complex hierarchical materials with features across scales (e.g. nanotubes, graphene and natural biomaterial nanostructures including protein materials such as intermediate filaments and hair, collagen, silk and elastin, and other structural biomaterials). An expert in computational materials science and AI, he has pioneered the field of materiomics, and demonstrated broad impacts in the study of mechanical properties of complex materials, including predictive materials design and manufacturing. Between 2013-2020, Buehler served as Department Head of MIT's Civil and Environmental Engineering Department. He has held numerous other leadership roles at professional organizations, including a term as President of the Society of Engineering Science (SES).

ADDITIONAL BACKGROUND

Prof. Buehler has authored more than 500 peer-reviewed publications (H-index=103), which have been cited more than 38,000 times, and authored two monographs (as well as several edited books). He has given more than 400 invited/keynote/plenary talks around the world, and given several highly-praised TED talks. His technical innovations have resulted in several patents. Buehler's recent research has resulted in a new paradigm for the analysis of bio-inspired materials and structures to devise new biomaterial platforms, and using a mathematical categorization approach that connects insights from disparate fields such as materials, structures to music and language. His work also includes the introduction of AI methods in materials modeling and design, especially fracture mechanics, featuring a novel perspective to connect datasets form experiment and simulation to develop multiscale models. He has applied these methods to wide ranging areas of application including protein folding, fracture, and composite design, and coupled the *de novo* design methods with additive manufacturing approaches. He is well-known for his research on mechanically relevant proteins, especially silk, elastin, intermediate filaments, and collagen.

He is the Editor in Chief of the *Journal of the Mechanical Behavior of Biomedical Materials* (since his inaugural appointment, the impact factor increased from 2.876 to 4.042). He was recently elected as the inaugural Section Editor of *MRS Bulletin Impact* by the Materials Research Society, and is active on the editorial board of many other top-ranked peer-reviewed journals, such as *APL Machine Learning, Extreme Mechanics Letters, Biophysical Journal,* and *Computational Materials Science*.

Buehler has served in numerous leadership roles, including as an elected member of the Board of Directors of the Society of Engineering Science (SES) (2016-2018) and between 2018 and 2020 served as President-elect, President and Past President of the SES. He served as the chair of several conferences (including the ASME Global Congress on NanoEngineering for Medicine and Biology meeting in 2013, several times as Chair/Co-Chair of the International Conference on Mechanics of Biomaterials & Tissues). He served as the inaugural chair of the ASCE Biomechanics Committee and on the Executive Committee of the ASME Materials Division (2015-2018). In addition to various other committees in professional organizations, Buehler is actively involved in public outreach. He offers an annual mechanics and materials research camp at MIT with local middle and high schools, funded by the U.S. Army Educational Outreach Program (AEOP) and UNITE program. The program featured 46 students in 2022, with a 45% female and/or URM participation. He served as MRS Fall 2021 Meeting Chair, one of the largest materials research conferences and has organized many other workshops and symposia.

Buehler is an accomplished academic leader and administrator. Between 2013-2020, Buehler served as

Department Head of MIT's Civil and Environmental Engineering Department. His leadership resulted in an increase in rankings (US News & World ranking increased from 8 to 3; ranking in QS World University Rankings consistently 1), the development of a new undergraduate curriculum, extensive space renovations and fundraising. Buehler led a faculty hiring campaign and renewed around 1/3 of the department faculty resulting in 12 new faculty hires (7 women and 2 URM faculty; overall 58% female/URM). At the end of his tenure CEE had the second highest ratio of female faculty in the MIT School of Engineering. During his tenure, Buehler appointed the first female and the first African American Associate Department Head. To identify, promote and recruit female star researchers pursuing faculty-track careers, he introduced the Rising Stars program.

He is the recipient of many awards including the ASME Drucker Medal, the Feynman Prize, the IACM Fellows Award, the J.R. Rice Medal, the Harold E. Edgerton Faculty Achievement Award, the Alfred Noble Prize, the Leonardo da Vinci Award, and the Thomas J.R. Hughes Young Investigator Award, and many others. He further received numerous government agency recognitions, including the National Science Foundation CAREER award, the United States Air Force Young Investigator Award, the Navy Young Investigator Award, the Defense Advanced Research Projects Agency (DARPA) Young Faculty Award, as well as the Presidential Early Career Award for Scientists and Engineers (PECASE). He has been selected as a Clarivate Highly Cited Researcher. In 2020, he was named as one of the global top 0.09% of all researchers worldwide in the nanoscience category in a study from Stanford University.

In addition to his teaching at MIT, he offers two annual Professional Education courses on "*Predictive Multiscale Materials Design*" and "*Machine Learning for Materials Informatics*". These courses have been taken by more than 150 engineering, scientific and other professionals. Based on his record in the translation of basic research into practice through entrepreneurship, Buehler is involved with startups and innovation, such as through his role on the Board of Directors of Sweetwater Energy, Inc. and as a member of the Scientific Advisor Board of Safar Partners (A Technology Venture Fund). He has experience in scientific and engineering consulting for industry, government agencies, and as expert witness for a variety of technologies, in particular materials science and mechanical properties, including fracture. In his work at MIT he has collaborated with numerous corporate partners, including BASF (development of novel additives for road pavements), Teledyne (development of thermal/mechanical heat dissipation strategies using nanotubes), Henkel (development of adhesive designs), and Ferrovial/Cadagua (development of technologies to translate organic waste to structural materials).

As a composer of classical and experimental music with a special interest in science-based sonification, he is active in scientific outreach and the intersection of art and science, and a member of the Executive Committee of MIT's Center for Art, Science and Technology (CAST). His work has resulted in contributions to exhibitions and performances at international art venues (e.g. Palais de Tokyo, Guggenheim/e-flux, Harvard Arts First Festival). In 2022, his work was also incorporated into the collection of the Library of Congress, Music Division.

PROFESSIONAL TRAINING

Institution	Major	Degree & Year
University of Stuttgart Stuttgart, Germany	Process and Chemical Engineering	Pre-Diploma (B.S. eq.), 2000
Michigan Technological University Houghton, Michigan	Engineering Mechanics	M.S., 2001
Max Planck Institute for Metals Research University of Stuttgart Stuttgart, Germany	Chemistry (Materials Science)	Dr. rer. nat. (Ph.D.), 2004
California Institute of Technology Pasadena, California	Chemistry and Chemical Engineering	Postdoctoral Scholar, 2004-2005
Massachusetts Institute of Technology Cambridge, Massachusetts	Civil and Environmental Engineering	Postdoctoral Associate 2005-2006

PROFESSIONAL APPOINTMENTS

2021 – present	Professor, Mechanical Engineering, MIT
2019	President, Society for Engineering Science (SES)
2018-present	Safar Partners Equity Fund, Scientific Advisory Board
2017-present	Member of the Board of Directors, Sweetwater Energy, Inc.
2015-present	McAfee Professor of Engineering (Institute-wide Endowed Chair Professorship), MIT
2013-2020	Head of Department, Dept. Civil and Environmental Engineering, MIT
2013-present	Professor (with tenure), Dept. Civil and Environmental Engineering, MIT
2011-2013	Co-Director, MIT Computation for Design and Optimization Program
2011-2013	Associate Professor with Tenure, Dept. Civil and Environmental Engineering, MIT

2010-2013	Group Leader, Mechanics and Materials Division in Civil & Environmental Engineering, MIT
2010-present	Director, MIT-Germany Program, MIT
2009-2010	Esther and Harold Edgerton Associate Professor, Civil and Environmental Engineering, MIT
2007-2009	Esther and Harold Edgerton Assistant Professor, Civil and Environmental Engineering, MIT
2006-2007	Assistant Professor, Dept. Civil and Environmental Engineering, MIT
2005-2006	Lecturer and Postdoctoral Associate, MIT
2004-2005	Director of Multiscale Modeling and Software Integration, Materials and Process Simulation Center, California Institute of Technology, Pasadena
2004-2005	Postdoctoral Scholar, California Institute of Technology, Pasadena
2004	Postdoctoral Fellow, Max Planck Institute for Metals Research, Stuttgart, Germany
2001-2004	Research Assistant, Max Planck Institute for Metals Research, Stuttgart, Germany
2001	Internship at Robert Bosch GmbH, Plastics Engineering. Waiblingen, Germany
2000-2001	Graduate Research Assistant, Department of Mechanical Engineering-Engineering Mechanics, Michigan Technological University

PEER-REVIEWED PUBPLICATIONS: Total: 500+ peer reviewed articles, several books and book chapters; H-index 103 (Google Scholar), Clarivate Highly Cited Researcher. Full list of publications at: https://scholar.google.com/citations?user=hWBTSksAAAAJ&hl=en

Key publications

1. F. Liu, B. Ni, M.J. Buehler, "PRESTO: Rapid protein mechanical strength prediction with an end-to-end deep learning model," *Extreme Mechanics Letters,* paper # 101803, 2022
2. Z. Yang, M.J. Buehler, "High-Throughput Generation of 3D Graphene Metamaterials and Property Quantification Using Machine Learning," *Small Methods*, paper # 2200537, 2022
3. A.J. Lew, M.J. Buehler, "DeepBuckle: Extracting physical behavior directly from empirical observation for a material agnostic approach to analyze and predict buckling," *JMPS*, Vol. 164, 103909, 2022
4. Z. Yang, C.-H. Yu, M.J. Buehler, "Deep Learning Model to Predict Complex Stress and Strain Fields in Hierarchical Composites," *Science Advances*, DOI: 10.1126/sciadv.abd7416 , 2021
5. K. Guo, M.J. Buehler, "A semi-supervised approach to architected materials design using graph neural networks," *Extreme Mechanics Letters*, Vol. 41, pp. 101029, 2020
6. M.J. Buehler, "Liquified protein vibrations, classification and cross-paradigm *de novo* image generation using deep neural networks," *Nano Futures*, p. 035004, Vol. 4(3), 2020
7. M. Hsu, C.H. Yu, M.J. Buehler, "Using Deep Learning to Predict Fracture Patterns in Crystalline Solids," *Cell Matter*, Vol. 3, 1-15, 2020
8. C.H. Yu; M.J. Buehler, "Sonification based de novo protein design using artificial intelligence, structure prediction, and analysis using molecular modeling," *APL Bioengineering*, Vol. 4(1), p. 016108, 2020.
9. D. Liu, A. Tarakanova, C. C. Hsu, M. Yu, S. Zheng, L. Yu, J. Liu, Y. He, D. J. Dunstan, and M. J. Buehler, "Spider dragline silk as torsional actuator driven by humidity," *Science Adv*., Vol. 5, no. 3, 2019
10. G.X. Gu, C.-T. Chen, M.J. Buehler "*De novo* composite design based on machine learning algorithm", *Extreme Mechanics Letters* 18, p. 19-28, 2018
11. G. X. Gu, C.-T. Chen, D. J. Richmond, and M. J. Buehler, "Bioinspired hierarchical composite design using machine learning: simulation, additive manufacturing, and experiment," *Mater. Horizons*, vol. 5, no. 5, pp. 939–945, Aug. 2018 (Selected as 2018 Outstanding Paper Prize winner)
12. S. Ling; Z. Qin; W. Huang; S. Cao; D. L. Kaplan; M. J. Buehler, "Design and function of biomimetic multilayer water purification membranes," *Science Adv.*, DOI: 10.1126/sciadv.1601939, 3 (4), e1601939, 2017 (the technology to develop filtration devices from silk, protein and hybrid nanofibrillar materials has been covered in a series of patents)
13. C.C. Chou, M.J. Buehler, Structure and Mechanical Properties of Human Trichocyte Keratin Intermediate Filament Protein, *Biomacromolecules*, Vol. 13(11), 3522-3532, 2012.
14. S. Keten, Z. Xu, B. Ihle, M.J. Buehler, "Nanoconfinement controls stiffness, strength and mechanical toughness of beta-sheet crystals in silk," *Nature Materials* Vol. 9, 359-367, 2010
15. Z. Xu, R. Paparcone, M.J. Buehler, "Alzheimer's Aβ(1-40) amyloid fibrils feature size dependent mechanical properties," *Biophysical Journal* Vol 98(10), 2053-2062, 2010.
16. Buehler, M.J., H. Tang, A. C.T. van Duin, W.A. Goddard III, "Threshold Crack Speed Controls Dynamical Fracture of Silicon Single Crystals," *Physical Review Letters* 99, 165502, 2007
17. Buehler, M.J., "Nature designs tough collagen: Explaining the nanostructure of collagen fibrils," Proc. Nat'l Academy of Sciences USA 103(33), 12285-12290, 2006

Other publications

1. E. Khare, N. Holten-Andersen, M.J. Buehler, "Transition metal-coordinate bonds in protein-inspired materials and engineered polymer hydrogels for tunable mechanical properties," *Nature Reviews Materials*, DOI: 10.1038/s41578-020-00270-z, 2021
2. T. Sapra, Z Qin, A. Dubrokvsky-Gaupp, U. Aebi, D. Muller, M.J. Buehler, O. Medala, "Nonlinear mechanics of lamin filaments and the meshwork topology build an emergent nuclear lamina*," Nature Communications*, DOI: https://doi.org/10.1101/846550, 2020
3. I. Su, M.J. Buehler, "Mesomechanics of a Three-Dimensional Spider Web," *Journal of the Mechanics and Physics of Solids*, Vol. 144, p. 104096, 2020
4. W. S. Leong, H. Wang, J. Yeo, F. J. Martin-Martinez, A. Zubair, P.-C. Shen, Y. Mao, T. Palacios, M. J. Buehler, J.-Y. Hong, and J. Kong, "Paraffin-enabled graphene transfer," *Nat. Commun*., Vol. 10, p. 867, 2019.
5. J. Yeo; G. Jung; F. Martin-Martinez; J. Beem; Z. Qin; M. Buehler, "Multiscale design of graphyne-based materials for high-performance separation membranes," *Advanced Materials*, https://doi.org/10.1002/adma.201805665, 2019
6. E. Beniash, C. Stifler, C.-Y. Sun, G.S. Jung, Z. Qin, M.J. Buehler, P. Gilbert, "The hidden structure of human enamel," *Nature Communications*, paper #: 4383, 2019
7. Y. Han, M. Li, G. Jung, M. A. Marsalis, Z. Qin, M. J. Buehler, L. Li, D. A. Muller "Sub-nanometre channels embedded in two-dimensional materials" *Nature Materials* (cover article), Vol. 17.2, pp. 129-133, 2018
8. Z. Qin, G.S. Jung, M.J. Kang, M.J. Buehler, "The mechanics and design of a lightweight three-dimensional graphene assembly," *Science Advances* 3 (1), e1601536SD, 2017
9. S.J. Ling; C.M. Li; K. Jin; D.L. Kaplan; M.J. Buehler, "Liquid Exfoliated Natural Silk Nanofibrils: Applications in Optical and Electrical Devices," *Advanced Materials*, 28 (35), pp. 7783, 2016
10. S.W. Cranford, A. Tarakanova, N. Pugno, M.J. Buehler, "Nonlinear constitutive behaviour of spider silk minimizes damage and begets web robustness from the molecules up," *Nature*, Vol. 482, pp. 72-76, 2012 (cover article)
11. D. Sen, K. Novoselov, P. Reis and M.J. Buehler, "Tearing of graphene sheets from adhesive substrates produces tapered nanoribbons," *Small* 6(10), 1108-1116, 2010 (cover article).
12. R. Ritchie, M.J. Buehler, P. Hansma, "Plasticity and toughness of bone," Physics Today 62(6), 41-47, 2009.
13. Ackbarow, T., X. Cheng, S. Keten and M.J. Buehler, "Hierarchies, multiple energy barriers and robustness govern the fracture mechanics of alpha-helical proteins," Proc. Nat'l Academy of Sciences USA 104(42), 16410-16415, 2007
14. M.J. Buehler and H. Gao, "Dynamical fracture instabilities due to local hyperelasticity at crack tips," *Nature*, Vol. 439, pp. 307-310, 2006

OTHER ACTIVITIES, SERVICE AND LEADERSHIP

1. **Invited, Keynote and Plenary Talks**:
   More than 400 invited talks, including many plenary and keynote lectures given around the world, at major conferences, workshops, and various research institutions and industry. His set of presentations also includes several TED talks and broad-impact general audience lectures.

2. **Editorial Activities:**
   Editor-in-Chief, J. Mech. Behav. Biomed. Mat. (Elsevier); Section Editor, MRS Bulletin Impact; Editor-in-Chief, BioNanoScience (Springer); Cell Matter, Member of the Editorial Advisory Board (Cell Press); Editorial Advisory Board, ACS Biomaterials Science and Engineering (American Chemical Society); Proceedings of the National Academy of Sciences (PNAS), Handling Editor; Editorial Board Member, Extreme Mechanics Letters (Elsevier); Editor Board Member, Scientific Reports (Nature Publishing Group); Editorial Board, Computational Materials Science (Elsevier); Academic Editor, PLoS ONE (Public Library of Science); Associate Editorial Board, Frontiers in Mechanics of Materials (Frontiers); Guest Editor, MRS Bulletin (MRS); Executive Editor, International Journal of Applied Mechanics (Imperial College Press); Associate Editor, Journal of Engineering Mechanics (ASCE); Editorial Board, Journal of Nanomechanics and Micromechanics (ASCE); Associate Editor, J. Comp. Theor. Nanosci. (Amer. Sci. Publ.); Editor, Acta Mech. Sinica (Springer); Guest Editor of J. Mater. Res. (Cambridge Univ. Press).

3. **Committees and Service** (selection)
   MIT Committee on Arts, Culture, and DEI, 2021-2022; Chair, MRS Fall 2021 Meeting, 2019-2021; Member, Core Committee of New Engineering Education Transformation (NEET), MIT, 2017-2019; MIT Refugee ACTion (ReACT) Senior Advisory Committee, 2017- now; MIT Center for Computational Engineering Advisory Council, 2019-now; 2018-19, Co-Chair Eighth International Conference on Mechanics of Biomaterials

& Tissues; Member of the Executive Committee, ASME Materials Division (2015-2018); Co-Chair, NanoEngineering in Medicine and Biology (NEMB) Congress 2013, Boston, 2013; Chair, Fourth International Conference on Mechanics of Biomaterials & Tissues 2011, Hawai'i; Inaugural Chair, Biomechanics Committee at the ASCE Engineering Mechanics Institute (EMI), 2008-2014; Co-Chair, NanoEngineering for Medicine & Biology Congress Steering Committee of ASME, 2010-2013; Member, ASME Nanoengineering Council Executive Committee, 2010.

4. Teaching

- 3.021J Introduction to Modeling and Simulation (undergraduate)
- 1.454 Atomistic Modeling and Simulation of Materials (graduate)
- 1.050 Engineering Mechanics (undergraduate)
- 1.052/1.121/ 2.169 Advancing Mechanics and Materials via Machine Learning
- "Predictive Multiscale Materials Design," MIT Professional Education short course (first offered in 2013, annual since then; with 150+ practicing engineering, science and technology professionals from around the world
- "Machine Learning for Materials Informatics," MIT Professional Education short course (first offered in 2022)
- Co-instructor, "Machine Learning, Modeling, and Simulation: Engineering Problem-Solving in the Age of AI," MIT Professional & Executive Learning

HONORS AND AWARDS (selection of major awards)

- Society of Engineering Science (SES) James R. Rice Medal, 2022
- International Association for Computational Mechanics (IACM) Fellows Award, 2022
- ASME Drucker Medal, 2021
- Royal Society of Chemistry Materials Horizons Outstanding Paper Prize, 2019
- MIT Distinguished Service and Leadership Award, 2021
- Clarivate Analytics Highly Cited Researcher Award, 2018 (recognized for exceptional research performance demonstrated by production of multiple highly cited papers that rank in the top 1% by citations for field and year in Web of Science)
- Feynman Prize (Foresight Institute), Theory, 2016
- Outstanding Young Scientist Award, NANOSMAT Society, 2016
- Fellow, NANOSMAT Society, 2016
- International Journal of Applied Mechanics (IJAM) Most Cited Paper Award (2009-2015), 2016
- Fellow, American Institute for Medical and Biological Engineering (AIMBE), 2015
- ASME Journal of Applied Mechanics Award 2014 (with student Zhao Qin)
- The Minerals, Metals & Materials Society (TMS) Robert Lansing Hardy Award, 2013
- NAE Frontiers of Engineering: Plenary Speaker, 2008 and 2013; Invited Participant, 2007
- TMS Structural Materials Division Best Paper Award 2013
- Materials Research Society (MRS) Outstanding Young Investigator Award, 2012
- IEEE Holm Conference Morton Antler Lecture Award, 2012
- SES Young Investigator Medal, 2012
- Alfred Noble Prize, 2011
- ASME Thomas J.R. Hughes Young Investigator Award, 2011
- ASCE Leonardo Da Vinci Award, 2011
- Stephen Brunauer Award, 2011 (American Ceramic Society)
- AIME Rossiter W. Raymond Memorial Award, 2011
- ASME Sia Nemat Nasser Award, 2010
- MIT Harold E. Edgerton Faculty Achievement Award, 2010
- Presidential Early Career Award for Scientists and Engineers (PECASE), 2009 (the award was presented by President Barack Obama at the White House)
- United States Navy Young Investigator Award, 2008
- DARPA Young Faculty Award, 2008
- Air Force Office of Scientific Research Young Investigator Award, 2008
- National Science Foundation CAREER Award, 2007
- Materials Research Society Gold Graduate Student Award, 2004

STUDENTS AND POSTDOCS

Graduated more than 40 PhD PhD students and postdocs. Also trained 80+ undergraduate and other researchers from programs at MIT (e.g. UROP), Research Science Institute (RSI) - Center for Excellence in Education, MIT MSRP, NSF-REU, and others. Many of his former students are now graduate students at major universities, hold faculty appointments at top universities around the world (Northwestern, Berkeley University, Tsinghua University, KAIST, and others), or hold high-profile jobs in industry or other leading organizations.

Current Postdoctoral Researchers

1. Dr. Bo Ni
2. Dr. Sofia Arevalo[#]
3. Dr. Shengfei Zhou

Current Graduate Students

1. Wei Lu[#] (Civil and Environmental Engineering)
2. Yu-Chuan (Michael) Hsu (Computational Science and Engineering)
3. Kai Jin (Civil and Environmental Engineering)
4. Sabrina Chin-Yun[#] (Materials Science and Engineering)
5. Zhenze Yang (Materials Science and Engineering)
6. Yiwen Hu[#] (Mechanical Engineering)
7. Andrew James Lew (Chemistry)
8. Eesha Khare[#] (Polymer Science Program)
9. Rachel Luu[#] (Materials Science and Engineering)
10. Talia Khan[#] (Mechanical Engineering)
11. Amadeus Alcântara[#] (Visiting Student, Civil and Environmental Engineering)
12. Nicolas A Lee (Media Lab)

List of former lab members and their current affiliation

Former Postdoctoral Researchers

1. Zaira Martín Moldes[#] (Principal Scientist, Microbiology)
2. William Lockett (MIT CAST)
3. Mario Milazzo (Assistant Professor, University of Pisa, Italy)
4. Kai Guo (Research Scientist, Institute of High Performance Computing, Singapore)
5. Chi Hua Yu (Assistant Professor, National Cheng-Kung University)
6. Anna Tarakanova[#,]* (Assistant Professor, University of Connecticut)
7. Diego López (Lecturer (Assistant Professor), University College London)
8. Chun-Teh Chen* (Assistant Research Engineer, The University of California, Berkeley)
9. Jingjie Yeo (Assistant Professor, Cornell University)
10. Tristan Giesa* (Head of Mechanical Engineering, Constructure)
11. Nina Dinjaski[#] (Sr. Manager Business Development, Technology & Innovation, PerkinElmer, Inc.)
12. Shu-Wei Chang* (Associate Professor, National Taiwan University)
13. Shengjie Ling (Assistant Professor, ShanghaiTech University)
14. Francisco Martinez (Lecturer (Assistant Professor), Swansea University)
15. Olena Tokareva[#] (Associate Director, De Novo Discovery at FogPharma)
16. Davoud Ebrahimi (Geotechnical Engineer, Mott MacDonald),
17. Reza Mirzaeifar (Associate Professor, Virginia Tech)
18. Zhao Qin* (Assistant Professor, Syracuse University)
19. Shangchao Lin (Associate Professor, Shanghai Jiao Tong University)
20. Seunghwa Ryu (Professor, Korea Advanced Institute of Science and Technology, KAIST)
21. Baptiste Depalle (Researcher, Forsyth Institute)
22. Arun Nair (Associate Professor, University of Arkansas)
23. Melis Arslan[#] (Assistant Professor, TED University, Ankara, Turkey)
24. Alfonso Gautieri (Assistant Professor at Politecnico di Milano, Italy)
25. Raffaella Paparcone[#] (Senior Manager, Strategic Planning/Analytics Management, ServiceNow)
26. Zhiping Xu (Professor, Tsinghua University, China)

Former PhD Students

1. Sinan Keten (Professor and Associate Chair, Mechanical Engineering, Northwestern University)
2. Alfonso Gautieri (Assistant Professor at Politecnico di Milano, Italy)
3. Theodor Ackbarow (Entrepreneur, Founder, Gustoso Gruppe GmbH)
4. Dipanjan Sen (Palantir Technologies)
5. Rouzbeh Shahsavari (Assistant Professor, Rice University and Founder of C-Crete Technologies)
6. Denvid Lau (Associate Professor at City University of Hong Kong)
7. Steven Cranford (Editor-in-Chief, Matter, Cell Press)
8. Zhao Qin (Assistant Professor, Syracuse University)
9. Flavia Libonati[#] (Assistant Professor, University of Genoa)
10. Shu-Wei Chang (Associate Professor, National Taiwan University)
11. Max Solar (IP Counsel, Abiomed)
12. Chia-Ching (Nina) Chou[#] (Assistant Professor, National Taiwan University)
13. Tristan Giesa (Head of Mechanical Engineering, Constructure)
14. Leon Dimas (Scientific Director at G-Research, London, UK)
15. Chun-Teh Chen (Assistant Research Engineer, The University of California, Berkeley)
16. Anna Tarakanova[#] (Assistant Professor, University of Connecticut)
17. Grace Gu[#] (Assistant Professor, University of California, Berkeley)
18. Steven Palkovic (Senior Project Consultant at Simpson Gumpertz & Heger)
19. Gang Seob Jung (Eugene Wigner Fellow, Oak Ridge National Laboratory)
20. Isabelle Su[#] (Staff, InterSystems)

Selection of Former MS/MEng Graduate Students

1. Evripides Loukaides (Senior Lecturer, University of Bath)
2. Talal Al-Mulla (Research Assistant, MIT)
3. Ayse Yavas Heckel[#] (Innovation Engineer, WGI)
4. Andre Garcia[#] (Goudy Park Capital Hedge Fund)
5. Bogdan Demian (Structural Engineer, BuroHappold Engineering)
6. Darnell Granberry[#] (Machine Learning Engineer, New York Structural Biology Center)
7. David Adler (Engineer, Silman)
8. Andrea Nova (Manager, Transfer Pricing at CrossBorder Solutions)
9. Jeremie Bertaud (Acceleration Program Director - VINCI / BigBooster)
10. Laura Batty[#] (Associate, Technical Research & Sustainability at Heyne Tillett Steel)
11. Graham Bratzel (Senior Mechanical Engineer, Astronics AES)

Undergraduate and other researchers

Total number of undergraduate and other researchers:>50+. Many of the undergraduate and high-school students have contributed to high-profile and highly-cited peer-reviewed papers, e.g.:

- Britni Ihle[#]: https://doi.org/10.1038/nmat2704 (cited >1,100 times).
- Xuefeng Chen[#]: https://doi.org/10.1073/pnas.0705759104 (cited >200 times)
- Sophie Wong[#]: https://doi.org/10.1529/biophysj.106.102616 (cited >200 times)
- Claire Hsu[#]: https://www.science.org/doi/full/10.1126/sciadv.aau9183 (cited >50 times)
- Joshua Hester: https://iopscience.iop.org/article/10.1088/0953-8984/22/3/035102
- Neosha Narayanan[#]: https://doi.org/10.1073/pnas.210129611)
- Jocelyn Ting[#]: https://pubs.acs.org/doi/full/10.1021/acs.energyfuels.1c02794
- Sebastian Franjou[#]: https://iopscience.iop.org/article/10.1088/2399-1984/abcf1b/meta
- Frank Liu: https://doi.org/10.1016/j.eml.2022.101803

*: Denotes that postdoc was also former graduate student

[#]: Female and/or URM