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1. Research Achievements:

Prof. Chen is a pioneer in 3D bioprinting for tissue engineering and regenerative medicine with over **290 technical papers**, including 200 peer-reviewed journal publications, 20 books and book chapters, and 17 patents. His work has tackled many key manufacturing challenges, including materials synthesis, printer design, light-matter interactions, mechanics of the tissue construct, printing throughput, reproducibility, and scalability. In his groundbreaking work published in *Advanced Drug Delivery Reviews* (2004) and *J. Biomed Materials Research* (2005), Dr. Chen developed a microscale 3D printing platform for hydrogel biomaterials. In 2006, he developed a rapid, projection 3D printing method to produce highly precise, 3D microstructures from a broad selection of functional materials – **A first in the field for projection 3D printing of hydrogel biomaterials** for tissue engineering (*J. Biomed Materials Research*, 2006). In contrast to a traditional 3D printing process (e.g. stereolithography or extrusion-based printing) where a 3D device is fabricated point-by-point or line-by-line, using digital light processing (DLP), this light-projection printing method enables an entire layer of biomaterial to be fabricated simultaneously, resulting in a much faster printing speed and better device integrity.

Building upon his DLP-based 3D printing technique, Dr. Chen invented a dynamic optical stereolithography method (DOPsL) (*Advanced Materials*, 2012). This is **another first in the field about dynamic and continuous 3D printing** of hydrogel biomaterials. DOPsL enables rapid 3D bioprinting that is 1,000 times faster in printing speed and 100 times better in printing resolution comparing to a traditional extrusion-based 3D printing. This continuous printing approach significantly improves the structural integrity of the 3D-printed parts since the process does not create artificial interfaces within the part. More recently, Dr. Chen invented a **high-throughput, direct in-well printing method** for 3D micro-tissues in a standard multi-well plate (*Biofabrication* 2021). This technique enables pharmaceutical company to conduct high throughput drug screening using such bioprinted micro-tissues with much needed speed, throughput, resolution and well-plate compatibility.

One of the major bottlenecks for future organ manufacturing is the ability to print the organ with a high cell density for critical cell-cell interactions to **recapitulate** the physiological conditions. Dr. Chen invented a **high cell density (HCD) bioprinting method** for future organ printing (*Science Advances*, 2023). He and his team designed a novel bioink material containing an optical tuning agent that can minimize light scattering by the cells and enables printing living materials at high resolution and high cell viability. This work represents the **first DLP-based 3D bioprinting for HCD vascularized tissues** in the field.

Dr. Chen's group was **the first in the field to bioprint a 3D biomimetic multicellular liver tissue** using human induced pluripotent stem cells (hiPSC). The liver tissue has precise hexagon microarchitecture containing liver cells surrounded by human endothelial cells and mesenchymal stem cells. This liver tissue shows significantly improved functions over other simple liver models and better predictions in drug testing (*PNAS*, 2016). This work was highlighted by *Nature Reviews Gastroenterology & Hepatology* (2016). Dr. Chen's team also developed a ventricular wall model using 3D bioprinting to study heart development (*Nature*, 2024). By bioprinting the model layer by layer, and precisely controlling the biological function of each layer, they have identified key factors that control how the heart's muscle cells migrate during development. This groundbreaking work provided a transformative new technique to create a precise *in vitro* model to study disease mechanism. Using his rapid bioprinting techniques, Dr. Chen has also successfully demonstrated 3D brain tumor models, retinal tissues, muscle tissues, and ovarian cancer models using various biomaterials powered by artificial intelligence (*Biomaterials* 2022, 2024; *Materials Today* 2018; *Cell Research*, 2020). These human tissue models enable pharmaceutical and biotech companies to test drug efficacy and toxicity with the benefits of better prediction, reduced cost and risk, reduced animal uses, and faster time-to-market.

For therapeutic applications, Dr. Chen and his team integrated neuron stem cells within a 3D bioprinted biomimetic scaffold and demonstrated functional recovery in a severely damaged spinal cord in a rat model (*Nature Medicine*, 2019). This was a giant step towards future clinical treatment for spinal cord injury (SCI). This work was highlighted in *Nature Reviews Neuroscience* (2019) and reported by *NIH Director's Blog* (2019) to the entire biomedical community. More recently, Dr. Chen and his team received a **\$26 million award from ARPA-H** to bioprint a large scale, vascularized liver using patient derived cells. His team is scaling up the cell production and the bioprinting process to fabricate an entire liver, use artificial intelligence to design the vasculature network, test the liver first in a rat model and then in a humanized pig model with a goal for human clinical trials after the 5-year project. This transformational work could save many lives and improve many others.

2. Research Recognitions:

Prof. Chen's research contributions have been recognized extensively by his peers, and he has received numerous awards for his research, including:

- ✓ CAREER award from NSF (2001-2006),
- ✓ Young Investigator award from ONR (2004-2007),
- ✓ Edward Nagy New Investigator award from NIBIB of NIH (2014),
- ✓ Milton C. Shaw Manufacturing Research Medal from ASME (2017),
- ✓ BRITE Fellow from NSF (2022-2027),
- ✓ Frederick W. Taylor Research Medal from the Society of Manufacturing Engineers (2023),
- ✓ Listed in Highly Cited Researchers in the World (Clarivate, 2025),
- ✓ Technology Innovation and Development Award, Society For Biomaterials (2026),
- ✓ Elected Fellow of several major societies, including the
 - National Academy of Inventors (NAI),
 - American Association for the Advancement of Science (AAAS),
 - American Institute for Medical and Biological Engineering (AIMBE),

- American Society of Mechanical Engineers (ASME),
- International Society for Optics and Photonics (SPIE),
- Society of Manufacturing Engineers (SME), and
- European Academy of Sciences and Arts (EASA).

Dr. Chen's original, high-impact research work has been reported widely in the scientific and popular press. Articles and interviews about his work aimed at the general audience have appeared in *NSF News*, *NSF Top Story*, *NIH News*, *NIH Director's Blog*, *NIH Research Matters*, *The Washington Post*, *The Wall Street Journal*, *Forbes*, *Yahoo News*, *CNBC News*, *ABC News*, *EurekAlert!*, *The Economic Times*, etc.

3. Industrial Impacts:

Dr. Chen's pioneering work in 3D bioprinting and biomaterials laid the foundation for the emerging field of biomanufacturing for tissue engineering and regenerative medicine applications. His groundbreaking research has inspired the birth of the biofabrication industry. Many biofabrication companies emerged, including Organovo (2007, US), Aspect Biosystems (2013, Canada), and Cellink (2016, Sweden, IPO in 2017). In 2014, NIH established the *NIH 3D Print Exchange* (<https://3dprint.nih.gov>) to strengthen R & D in biofabrication. With the potential to revolutionize the life science field, the global 3D biofabrication market has a value of several billion dollars, and is projected to reach \$20 billion by 2035, at a compounded annual growth rate of roughly 12% to 18%.

By licensing the key patents from his recent inventions, **Dr. Chen founded a startup, Allegro 3D, Inc.** in 2016. He led the company for successful commercialization of his biomaterials and bioprinting techniques with angel funding and SBIR funds from NSF and NIH. In 2018, Allegro 3D launched its bioink products including STEMINK™ series gelatin methacrylate, gelatin norbornene, glycidyl methacrylate-hyaluronic acid, alginate methacrylate, poly(glycerol-co-sebacate) acrylate. In March 2021, Allegro 3D launched its first 3D bioprinter product, Stemaker™ Model D for rapid, direct bioprinting of human tissues in a multiwell plate. This novel 3D bioprinter was aimed to transform the pharmaceutical and biotech industries for rapid, high throughput drug toxicity and efficacy testing using bioprinted 3D human tissue models. In May 2022, **Allegro 3D was successfully acquired** by a public company, BICO (formally CELLINK, OTCMKTS: CLLKF). After merging with CELLINK, the Stemaker™ Model D bioprinter was re-branded as BIONOVA X and has been a flagship bioprinter product of CELLINK.

To meet the strong unmet needs for precision human organoids and tissue models for drug testing, disease studies, and therapeutics, Dr. Chen recently founded **a new startup, TissueGenix, Inc.** This is in response to the recent FDA and NIH policies on reducing animal testing and the need of New Approach Methodologies (NAMs) such as bioengineered human organoids and bioprinted human tissues. TissueGenix will provide a pipeline of products and services including iPSC-based multicellular liver models and glioblastoma models, all within multiwell plates (e.g. 6, 12, 24, 96, and 384-well plates) that are commonly used in drug screening and biomedical research. Additionally, TissueGenix produces a library of bioinks for various tissue modeling applications (e.g. liver, heart, brain, and cancer). By offering bioprinted human tissue models, TissueGenix enables pharmaceutical and biotech researchers to reduce the need for animals in preclinical drug testing, and make drug discovery quicker and less expensive.

Additionally, Dr. Chen and his team invented rotating optical catheter probes for intravascular imaging for coronary and peripheral applications. Seven of his patents were licensed to a startup company, CardioSpectra, Inc. (CSI) where Dr. Chen served as a consultant. CSI was later acquired by Volcano Corporation (NASDAQ:VOLC) in 2007. Volcano Corporation had been a global leader in intravascular imaging and was later acquired by Philips.

4. Leadership and Services:

Prof. Chen has long been a strong leader in the manufacturing community. He served as an **NSF Program Director for the Nanomanufacturing Program** in the Civil, Mechanical, Manufacturing Innovation (CMMI) Division at NSF from 2008 to 2010. As the Program Director, he regularly organized proposal panel reviews and make recommendations with an annual program budget of \$11 million. Besides managing 3 research centers and over 150 active awards, he led the efforts in defining the scope and future directions of nanomanufacturing research in the US. He also served as a **Cluster Leader of the Advanced Manufacturing Cluster** in the CMMI Division to guide the manufacturing community for funding priorities and new research directions. Working with the White House Office of Science and Technology Policy (OSTP) while at NSF, Dr. Chen helped to develop the **Scalable Nanomanufacturing (SNM) Initiative**, (Solicitation #: NSF 10-618, \$10M budget), for research projects that support the identification and demonstration of nanomanufacturing processes with high potential to scale to economically and industrially relevant production level. With extremely strong interests from the research community, this SNM initiative was continued for another 6 years with 6 following up solicitations. The SNM initiative supported over 50 research projects with a total budget over \$40M. This had a significant impact to the US nanomanufacturing industry.

Within the scientific community, he served as an **Associate Editor** for *J. Manufacturing Science and Engineering*, the flagship journal in manufacturing from 2007-2010 and Associate Editor for *J. Nanoparticle Research* (2023-2026). Additionally, he has been on **editorial boards** of several top manufacturing journals, including *Additive Manufacturing* (Elsevier), *Biofabrication* (IOP Science), *Bio-Design and Manufacturing* (Springer/Nature), and *International Journal of Bioprinting* (Accscience). He was an **editor for a book** – “Nanomanufacturing” (ASP, 2009).

Since joining the NanoEngineering Department at UC San Diego in 2010, Prof. Chen has been playing a leading role as the department **Vice Chair (2014-2019) and Chair (2019-2023)** in growing the **first academic Nanoengineering Department** in the US. Within 12 years, the department expanded from 6 to 31 faculty and is currently supporting over 200 graduate students and 660 undergraduates. Under his leadership, the department developed and reformed its nanoengineering curriculum for B.S., M.S., and Ph.D. students. This academic program has received ABET accreditation. The NanoEngineering department graduates are playing a critical role in high-tech companies such as Illumina, Intel, Tesla, HP, and Qualcomm. They also founded startups such as TissueGenix, Allegro 3D, Grolltex, and Bioling. During the COVID 19 pandemic, Dr. Chen steered the entire department, overcoming many extraordinary challenges such as budget cut and hiring freeze, transition from on-site to on-line and back to on-site teaching, developing and reinforcing safety measures. His strong leadership enabled the department to grow major areas such as research funding per faculty (doubled from 2018 to 2022) and enhanced the student learning experience by adding new lab courses.

EDUCATION

B.S.	Tsinghua University (Beijing)	Thermal Engineering	1989
Ph.D.	University of California, Berkeley	Mechanical Engineering	1999

PROFESSIONAL EXPERIENCE

1999-2001	Assistant Professor, Industrial & Manufacturing Engineering Dept, Iowa State Univ.
2000-2001	Associate Scientist, Ames Laboratory, U.S. Department of Energy (DOE)
2001-2005	Assistant Professor, Mechanical Engineering Department, Univ of Texas at Austin
2005-2009	Associate Professor, Mechanical Engineering Department, Univ of Texas at Austin
2008-2010	Program Director, NanoManufacturing Program, National Science Foundation
2009-2010	Professor, Mechanical Engineering Department, University of Texas at Austin
2010-present	Professor, Chair (2019-2023), Vice Chair (2014-2019), Chair for Graduate Affairs (2010-2014), Chemical and Nano Engineering Department (formerly Nanoengineering Department), University of California, San Diego (UCSD) Professor, Program in Materials Science and Engineering, UCSD Faculty, Clinical and Translational Research Institute, UCSD Faculty, Institute of Engineering in Medicine, UCSD
2013-present	Professor Affiliate, Bioengineering Department, UCSD
2014-present	Founding Co-Director, Biomaterials and Tissue Engineering Center, UCSD
2021-present	Professor Affiliate, Electrical and Computer Engineering Department, UCSD
2023-present	Professor Affiliate, Scripps Institution of Oceanography, UCSD

HONORS AND AWARDS

2001-2006	CAREER Award, National Science Foundation (NSF).
2002	Outstanding Young Manufacturing Engineers Award, Society of Manuf. Engineers.
2003	Cited as a successful young investigator in the <i>Report to the Assistant Director for Engineering of NSF</i> by the Committee of Visitors to NSF DMII Division.
2004-2007	Young Investigator Award, Office of Naval Research (ONR).
2005	Outstanding Faculty Award, College of Engineering, Univ of Texas at Austin.
2005	Licensed 7 patents to CardioSpectra, Inc. (CSI). CSI was acquired by Volcano Corporation.
2006	Outstanding Reviewer, ASME <i>Journal of Heat Transfer</i> .
2006	Best Paper Award, Joint AIAA/ASME Thermophysics Conference, 2006.
2006-2010	Pearlie D. Henderson Centennial Endowed Faculty Fellowship, Univ of Texas at Austin.
2007-	Fellow, American Society of Mechanical Engineers (ASME).
2007-	Member of Various NIH Study Sections such as the New Innovator and U01 Programs.
2008-	Fellow, International Society for Optics and Photonics (SPIE).
2009	Outstanding Paper Award, 37th North American Manufacturing Research Conference by the Society of Manufacturing Engineers (SME).
2011	Fellow, American Association for the Advancement of Science (AAAS).
2013	Fellow, International Society for Nanomanufacturing (ISNM).
2014	Edward Nagy New Investigator Award, National Institute of Biomedical Imaging and Bioengineering (NIBIB of NIH).
2014	The Corinne Bower Lecture, <i>Pre Retina Society Annual Meeting</i> , Philadelphia, PA, 2014.
2015	Fellow, American Institute for Medical and Biological Engineering (AIMBE).
2015	SPIE Applications of 3D Printing Best Paper Award, Photonics West, 2015.

- 2015 Invited Speaker, National Academy of Engineering US-China Frontier of Engineering Symposium.
- 2015 Distinguished Seminar, Biomedical Engineering Dept, University of California, Davis.
- 2015 Russell Springer Professor (visiting), University of California at Berkeley.
- 2016 Distinguished Seminar, Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research, University of Southern California, September 2016.
- 2016 Licensed 2 patents and founded a startup Allegro 3D, Inc. that was later acquired by BICO in 2022.
- 2016 Distinguished seminar speaker, Medical Engineering Program, California Institute of Technology, 2016.
- 2017 Milton C. Shaw Manufacturing Research Medal, American Society of Mechanical Engineers (ASME).
- 2017 Distinguished Seminar, BU Photonics Center, Boston University.
- 2018 Distinguished Seminar, Frontiers in Cardiovascular Science, Stanford Cardiovascular Institute, Stanford University.
- 2019 Best Teacher Award, Jacobs School of Engineering, UC San Diego.
- 2021 Elected Member of the European Academy of Sciences and Arts.
- 2022 Elected Fellow of the US National Academy of Inventors.
- 2022 BRITE Fellow, National Science Foundation.
- 2022- Zable Endowed Chair in Nanoengineering Technologies, UC San Diego.
- 2023 Frederick W. Taylor Research Medal, the Society of Manufacturing Engineers (SME).
- 2025 Listed in Highly Cited Researchers (Clarivate).
- 2026 Technology Innovation and Development Award, Society For Biomaterials.
- 2026 Fellow, Society of Manufacturing Engineers.

RESEARCH INTERESTS

- 3D Printing and Bioprinting with Artificial Intelligence
- Biomaterials and Stem Cell Engineering
- Tissue Engineering and Regenerative Medicine
- Organ-on-a-chip and Micro-physiological Systems
- Biomanufacturing of living materials

RESEARCH FUNDING: \$41M current grants and \$40M completed grants from ARPA-H, NIH, NSF, DARPA, ONR, AFOSR, GBM Foundation, industries, etc.

PUBLICATIONS (Google Scholar: >27,100 citations, h-index = 83)

Refereed Journal (*corresponding author)

1. **S. C. Chen** and C. P. Grigoropoulos*, "Noncontact Nanosecond-time-resolution Temperature Measurement in Excimer Laser Heating of Ni-P Disk Substrates", *Applied Physics Letters*, Vol. 71 (22), pp. 3191-3193, 1997.
2. **S. C. Chen**, C. P. Grigoropoulos*, H. K. Park, P. Kersterns, and A.C. Tam, "Photothermal Displacement Measurement of Transient Melting and Surface Deformation During Pulsed Laser Heating", *Applied Physics Letters*, Vol. 73 (15), pp. 2093-2095, 1998.
3. I. Zergioti, S. Mailis, N. A. Vainos, C. Fotakis, **S. C. Chen**, and C. P. Grigoropoulos*, "Microdeposition of Metals by Femtosecond Excimer Laser", *Applied Surface Science*, Vol. 127-129, pp. 601-605, 1998.

4. **S. C. Chen**, C. P. Grigoropoulos*, H. K. Park, P. Kersters, and A.C. Tam, "Photothermal Displacement Detection and Transient Imaging of Bump Growth Dynamics in Laser Zone Texturing of Ni-P Disk Substrates", *Journal of Applied Physics*, Vol. 85 (8), pp.5618-5620, 1999.
5. **S. C. Chen**, D. G. Cahill, and C. P. Grigoropoulos*, "Melting and Surface Deformation in Pulsed Laser Surface Micro-modification of NiP Disks", *Journal of Heat Transfer*, Vol.122 (1), pp. 107-12, 2000.
6. V. Kancharla, **S. C. Chen***, D.S. Zamzow, D. P. Baldwin, "Laser Micromachining of a Biodegradable Polymer", *Transactions of the North American Manufacturing Research Institute of SME*, Vol. 29, pp. 407-412, 2001.
7. T. Schwarz-Selinger, D.G. Cahill*, **S. C. Chen**, S. J. Moon, and C. P. Grigoropoulos, "Micron-scale Modifications of Si Surface Morphology by Pulsed-laser Texturing," *Physical Review B.*, Vol. 64 (15), pp. 155323-1—155323-7, 2001.
8. V. Kancharla and **S. C. Chen***, "Fabrication of Biodegradable Polymeric Micro-devices Using Laser Micromachining," *Biomedical Microdevices*, Vol. 4 (2), pp. 105-109, 2002.
9. W. Zheng and **S. C. Chen***, "Micro-Manufacturing of a Nano-liter Scale, Continuous-Flow Polymerase Chain Reaction System", *Transactions of the North American Manufacturing Research Institute of SME*, Vol. 30, pp. 551-555, 2002.
10. **S. C. Chen***, V. Kancharla, and Y. Lu, "Laser-based Microscale Patterning of Biodegradable Polymers for Biomedical Applications", *International Journal of Material and Product Technology*, Vol. 18 (4), pp. 457-468, 2003.
11. S. F. Li and **S. C. Chen***, "Analytical Analysis of a Circular PZT-actuator for Valveless Micropumps", *Sensors and Actuators A*, Vol. 104 (2), pp. 151-161, 2003.
12. S. Theppakuttai and **S. C. Chen***, "Nanoscale Surface Modification of Glass Using a 1064 nm Pulsed Laser," *Applied Physics Letters*, Vol. 83 (4), pp. 758-760, 2003.
13. S. F. Li and **S. C. Chen***, "Polydimethylsiloxane Fluidic Interconnects for Microfluidic Systems", *IEEE Transactions on Advanced Packaging*, Vol. 26 (3), pp. 242-247, 2003.
14. Y. Lu and **S. C. Chen***, "Nanopatterning of a Silicon Surface by Near-field Enhanced Laser Irradiation," *Nanotechnology*, Vol. 14 (5), pp. 505-508, 2003.
15. Y. Lu, S. Theppakuttai, and **S. C. Chen***, "Marangoni Effect in Nanosphere-enhanced Laser Nanopatterning of Silicon", *Applied Physics Letters*, Vol. 82 (23), pp. 4143-4145, 2003.
16. Y. C. Lee, B. Amirparviz, A Chiou, and **S. C. Chen**, "Packaging for Microelectromechanical and Nanoelectromechanical Systems", *IEEE Transactions on Advanced Packaging*, Vol. 26 (3), pp. 217-226, 2003.
17. S. Theppakuttai, Y. Lu, and **S. C. Chen***, "Near-field Enhanced Massively Parallel Nanoscale Modification of Solids", *Transactions of the North American Manufacturing Research Institute of SME*, Vol. 32, pp. 33-38, 2004.
18. S. Theppakuttai, D. B. Shao, and **S. C. Chen***, "Localized Laser Transmission Bonding for Microsystem Fabrication and Packaging", *Journal of Manufacturing Processes*, Vol. 6 (1), pp. 24-31, 2004.
19. S. Theppakuttai and **S. C. Chen***, "Submicron Ripple Formation on Glass Surface upon Laser-nanosphere Interaction", *Journal of Applied Physics*, Vol. 95 (9), pp. 5049-5052, 2004.
20. S. F. Li and **S. C. Chen***, "Design, Simulation, and Micro-fabrication of a Heat Conduction DNA Chip with Integrated Microheaters", *Journal of Manufacturing Processes*, Vol. 6 (1), pp. 81-87, 2004.

21. Y. Lu and **S. C. Chen***, "Micro and Nano-fabrication of Biodegradable Polymers for Drug Delivery", *Advanced Drug Delivery Reviews*, Vol. 56, pp. 1621-1633, 2004 (PMID: 15350292)
22. Y. Lu, D. B. Shao, and **S. C. Chen***, "Laser-assisted Photothermal Imprinting of Nanocomposites", *Applied Physics Letters*, Vol. 85 (9), pp.1604-1606, 2004.
23. D.B. Shao, S. F. Li and **S. C. Chen***, "Near-field-enhanced, Mold-assisted, Parallel Direct Nanostructuring of a Gold Thin Film on Glass", *Applied Physics Letters*, Vol. 85 (22), pp. 5346-5348, 2004.
24. Y. Lu, D.B. Shao, and **S. C. Chen***, "Nanoparticle-enhanced Laser Micromachining of Polymeric Nanocomposites", *Transactions of the North American Manufacturing Research Institute of SME*, Vol. 33, pp. 243-249, 2005.
25. L.H. Han, **S. C. Chen***, "Wireless Bimorph Micro-actuators by Pulsed Laser Heating", *Sensors and Actuators A*, Vol. 121 (1), pp. 35-43, 2005.
26. S. F. Li, P. N. Floriano, N. Christodoulides, D. Y. Fozdar, D.B. Shao, M. F. Ali, P. Dharshan, S. Mohanty, D. Neikirk, J. T. McDevitt, **S. C. Chen***, "Disposable Polydimethylsiloxane/Silicon Hybrid Chips for Protein Detection", *Biosensors and Bioelectronics*, Vol. 21 (4), pp. 574-580, 2005.
27. Y. Lu, C. A. Aguilar, **S. C. Chen***, "Shaping Biodegradable Polymers as Nanostructures: Fabrication and Applications", *Drug Discovery Today*, Vol. 2 (1), pp. 97-102, 2005.
28. G. Mapili, Y. Lu, **S. C. Chen***, K. Roy*, "Laser-layered Microfabrication of Spatially Patterned Functionalized Tissue Engineering Scaffolds", *Journal of Biomedical Materials Research B*, Vol. 75B (2), pp. 414-424, 2005.
29. D.B. Shao and **S. C. Chen***, "Numerical Simulation of Surface-Plasmon-Assisted Nanolithography", *Optics Express*, Vol. 13 (18), pp. 6964-6973, 2005.
30. C. A. Aguilar, Y. Lu, S. Mao, and **S. C. Chen***, "Direct Micro-patterning of Biodegradable Polymers Using Ultraviolet and Femtosecond Lasers", *Biomaterials*, Vol. 26 (36), pp. 7642-7649, 2005.
31. A. J. Heltzel, S. Theppakuttai, J. R. Howell*, and **S. C. Chen***, "Analytical and Experimental Investigation of Laser-Microsphere Interaction for Nanoscale Surface Modification", *Journal of Heat Transfer*, Vol. 127, pp. 1231-1235, 2005.
32. D. B. Shao and **S. C. Chen***, "Surface-Plasmon-Assisted Nanoscale Photolithography by Polarized Light", *Applied Physics Letters*, Vol. 86, pp. 253107(1-3), 2005.
33. A. Battula, S. Theppakuttai, and **S. C. Chen***, "Direct, Parallel Nanopatterning of Silicon Carbide by Laser Nanosphere Lithography", *Journal of Microlithography, Microfabrication, and Microsystems*, Vol. 5 (1), pp. 011009 (1-5), 2006.
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35. H. W. Kang, H. Lee, **S. C. Chen**, and A. J. Welch*, "Enhancement of Bovine Bone Ablation Assisted by a Transparent Liquid Layer on a Target Surface", *IEEE Journal of Quantum Electronics*, Vol. 42, No. 7, pp. 633-642, 2006.
36. Y. Lu, G. Mapili, G. Suhali, **S. C. Chen***, K. Roy*, "A Digital Micro-mirror Device-based System for the Microfabrication of Complex, Spatially Patterned Tissue Engineering Scaffolds", *Journal of Biomedical Materials Research A*, Vol. 77A (2), pp 396-405, 2006.

37. A. Battula and **S. C. Chen***, "Extraordinary Transmission in a Narrow Energy Band for Metallic Gratings with Converging-Diverging Channels", *Applied Physics Letters*, Vol.89 (13), 131113, 2006.
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39. N. Gomez, Y. Lu, **S. C. Chen**, C. E. Schmidt*, "Immobilized Nerve Growth Factor and Microtopography Have Distinct Effects on Polarization Versus Axon Elongation in Hippocampal Cells in Culture", *Biomaterials*, Vol. 28 (2), pp. 271-284, 2006. (PMID: 16919328)
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42. N. Gomez, S.C. Chen, and C. Schmidt*, "Polarization of Hippocampal Neurons with Competitive Surface Stimuli: Contact Guidance Cues are Preferred Over Chemical Ligands", *Journal of the Royal Society Interface*, Vol. 4, pp. 223-233, 2007.
43. A.W. Warren, Y.B. Guo*, **S.C. Chen**, "Massively Parallel Laser Shock Peening: Simulation, Analysis, and Validation", *International Journal of Fatigue*, Vol. 30, pp. 188-197, 2007.
44. A. J. Heltzel, A. Battula, J. R. Howell*, and **S. C. Chen***, "Nanostructuring Borosilicate Glass with Near-field Enhanced Energy Using a Femtosecond Laser Pulse", *Journal of Heat Transfer*, Vol. 129 (no.1), pp.53-59, 2007.
45. A. Battula, Y. L. Lu, R. J. Knize, K. Reinhardt, **S. C. Chen***, "Extraordinary Transmission and Enhanced Emission with Metallic Gratings Having Converging-Diverging Channels", *Active and Passive Electronic Components*, Vol. 2007, Article ID 24084, December 2007.
46. K. C. Dickey, S. Subramanian, J. E. Anthony, L. H. Han, **S. C. Chen**, and Y. L. Loo*, "Large-area patterning of a solution-processable organic semiconductor to reduce parasitic leakage and off currents in thin-film transistors", *Applied Physics Letters*, Vol. 90, 244103, 2007.
47. A. Battula, **S. C. Chen***, Y. L. Lu, R. J. Knize, K. Reinhardt, "Tuning the extraordinary optical transmission through subwavelength hole array by applying a magnetic field", *Optics Letters*, 32 (18), pp. 2692-2694, 2007.
48. A. Battula, Y. L. Lu*, R. J. Knize, K. Reinhardt, and **S. C. Chen***, "Tunable transmission at 100 THz through a metallic hole array with a varying hole channel shape", *Optics Express*, Vol. 15 (no. 22), pp. 14629-14635, 2007.
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50. A. J. Heltzel, S. Theppakuttai, **S. C. Chen***, and J. R. Howell*, "Surface Plasmon-Based Nanopatterning Assisted by Gold Nanospheres", *Nanotechnology*, Vol. 19 (2), pp. 025305 (1-6), 2008.
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Keynote/Plenary Lectures (along with 140+ invited talks/presentations in scientific meetings)

1. Keynote Lecture, "Nanomanufacturing", *International Conference on Frontiers of Design and Manufacturing*, Tianjin, China, September 22-24, 2008.
2. Keynote Talk, "Nanomanufacturing: Challenges and Opportunities", *Nanomanufacturing Summit*, Boston, May 2009.
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4. The Corinne Bower Lecture, "3D Bioprinting: Materials, Fabrication, and Tissue Engineering", *Pre Retina Society Annual Meeting*, Philadelphia, PA, 2014
5. Plenary Talk, "Femtosecond Laser Assisted 3D Nano-printing", *International Congress on Applications of Lasers & Electro-Optics (ICALEO)*, San Diego, 2014.
6. Keynote Talk: "3D Bioprinting: An Enabling Technology for Tissue Engineering and Regenerative Medicine", 9th UCSD-UST Bilateral Symposium, Taiwan, Nov. 16, 2015.

7. Keynote Talk: "Nano and Microscale Rapid 3D Printing for Regenerative Medicine", *5th ASME NanoEngineering for Medicine and Biology Conference (NEMB)*, Houston, Feb 22-23, 2016.
8. Keynote Talk, "Rapid Scanningless 3D Printing: Vision, Status, and Research Needs," *NSF Additive Manufacturing for Health Workshop*, Arlington, VA, March 16-17, 2016.
9. Keynote Talk: "3D Bioprinting: An Enabling Technology for Tissue Engineering and Regenerative Medicine", *Nature Conference on Tissue Engineering and Regenerative Medicine* (Guangzhou, April 7–9, 2016).
10. Keynote Talk: "3D Bioprinting: An Enabling Technology for Early Drug Screening and Disease Modeling", *CAST-SD Annual Conference, San Diego, CA*, December 11, 2016
11. Keynote Talk: "Rapid 3D BioPrinting of Scaffolds and Microphysiological Systems", *International Conference on Biofabrication 2017*, Beijing, China, October 15-18, 2017.
12. Keynote Talk: "Continuous projection 3D bioprinting for functional scaffolds and tissue models", *Select Biosciences Organ-on-a-Chip and 3D-Printing World Congress 2018*, October 4-5, 2018, San Diego, CA.
13. Plenary Talk, "Nano and Microscale Light-based 3D Bioprinting: An Enabling Technology for Regenerative Medicine", *International Congress on Applications of Lasers & Electro-Optics (ICALEO)*, Orlando, FL., 2018.
14. Keynote Talk: "Microscale light-based 3D printing of functional scaffolds for precision tissue engineering", *Society of Engineering Science Annual Meeting*, Oct. 13-15, 2019, St. Louis, MO.
15. Keynote Talk: "Modulating Physical, Chemical, and Biological Properties of Tissue Constructs via Rapid 3D Bioprinting", *Select Biosciences Organ-on-a-Chip and 3D-Printing World Congress 2019*, October 14-15, 2019, San Diego, CA.
16. Keynote Talk: "Nanobots: Design, Fabrication, and Emerging Biomedical Applications", *NSF Nano Grantees Conference*, Dec 9-10, 2019, Washington DC.
17. Keynote Talk: "DMD-based Rapid 3D Bioprinting for Precision Tissue Engineering and Regenerative Medicine", *Emerging Digital Micromirror Device Conference, SPIE Photonic West 2020*, Feb. 1-5, 2020, San Francisco, CA.
18. Keynote Talk: "Nano and Microscale 3D Bioprinting at 20 Years of National Nanotechnology Initiative", *NSF Nano Grantees Conference*, December, 2020, Washington DC.
19. Keynote Talk: "Rapid High Throughput 3D Bioprinting for Early Drug Screening and Disease Modeling", *CAST-USA Annual Conference*, December 19, 2020
20. Keynote Talk: "Nano and Microscale Light-based 3D Bioprinting for Tissue Engineering and Regenerative Medicine", *12th International Conference on Nanotechnology: Fundamentals and Applications*, August 05 – 07, 2021
21. Keynote Talk: "DLP-based Rapid bioprinting for 3D tissues", *SelectBIO Conference on Bioprinting and Bioink Innovations for 3D-Tissues*, October 6, 2021.
22. Plenary Talk: "Rapid 3D Bioprinting for Tissue Engineering and Regenerative Medicine", *2nd Global Summit on Biomaterials and Applications*, August 25-27, 2022, Edinburgh, Scotland.
23. Plenary Talk, "3D Bioprinting for Tissue Engineering and Regenerative Medicine", *Global Summit and Expo on Nanotechnology and Applications*, Las Vegas, December 01-03, 2022.
24. Keynote Talk: "Capturing in vivo Conditions with Multi-material DLP Bioprinting", *Webinar on Bioprinting*, Sept 12, 2023.
25. Keynote Talk: "Rapid DLP-based bioprinting for tissue engineering and regenerative medicine", *International Conference on Biofabrication*, Saskatoon, Canada, Sept. 17-20, 2023
26. Keynote Talk: "Translating DLP bioprinters: from prototypes to commercial products" *Symposium for Translational Biofabrication: From Benchtop to Bedside, International Conference on Biofabrication*, Saskatoon, Canada, Sept. 17-20, 2023.

27. Keynote Talk: “Rapid DLP Bioprinting for Tissue Engineering and Regenerative Medicine”, *Bioprinting Partnership Conference*, Portsmouth, UK, Oct 25-27, 2023.
28. Plenary Talk, “Design Innovations for DLP Bioprinting and Tissue Engineering”, 4th International Conference on Biomaterials, Bio-Design and Manufacturing, August 18–20, 2024, Tokyo, Japan.
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30. Keynote Talk: “Rapid 3D Bioprinting for Tissue Engineering and Regenerative Medicine”, *NYCU–UCSD Bilateral Symposium*, October 13–14, 2025, Taiwan.
31. Keynote Talk: “3D Bioprinting of Tissues and Organs”, *Society for Biomaterials Annual Conference*, March 25-27, 2026, Atlanta.

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27. US patent application No. 63/940,012, "Redox-Responsive Dopamine-Crosslinked Hydrogels for Therapeutic Delivery and Tissue Engineering", L. Huang and **S.C. Chen**, filed on December 12, 2025.

Selected Press and Media Coverage

ARPA-H Award to 3D Bioprint Patient-Specific Human Livers (Jan. 2026)

- *San Diego Union-Tribune; Genetic Engineering and Biotechnology News; PharmiWeb; Towards Healthcare; BioSpace; EurekAlert, Yahoo!finance*

3D Printed Living Materials Could Clean up Polluted Water

- *3D Printing (Sept. 2023); Life Technology; Smart Water Magazine; Phys Org*

A New Technique Creates Greater Fidelity in Bioprinting Functional Human Tissues

- *NSF News (Multimedia Gallery), ScienceDaily (Feb. 2023); San Diego Biotechnology Network; News Break; Fight Aging*

Super Productive 3D Bioprinter Could Help Speed Up Drug Development

- *EurekAlert (June, 2021), Pioneering Minds; Global Biotech Insights*

3D Printed Bionic Coral

- *NSF News, (April, 2020); EurekAlert; COSMOS; Yahoo News; Optics and Photonics News*

3-D Printed Functional Scaffolds to Repair Spinal Cord Injury

- *NIH Director's Blog (June 6, 2019); NIH Research Matters; Yahoo News; ABC News*

3-D Printer Creates Blood Vessel Networks

- *NIH Research Matters (March 2017); NSF News; 3D Print; R&D Magazine*

3D Bioprinted Functional Human Liver Tissue

- *EurekAlert! (February 2016); the Economic Times; R&D, The San Diego Union-Tribune*

3D-Printing of Movable Micro-fish

- *The Wall Street Journal (Sept., 2015); The Washington Post; Forbes; Fortune; NSF's Science 360*

3D Bioprinting of a Liver-mimic Device for Detoxifying Blood

- *The Financial Express; NIH, NSF News; The Economic Times*

Rapid 3D Printing

- *CNBC News; Eurekaalert; Economic Times; Yahoo News*

New Biomaterial That More Closely Mimics Human Tissue

- *Society for Biomaterials; R&D Magazine (May 2011), The Engineer (May 2011)*

Growing Tissues with Functional Blood Vessels

- *The Medical News (11/2010); Health Canal (11/2010); R&D Magazine (11/2010)*

Service and Professional Leadership

Professional Societies

- Fellow, National Academy of Inventors (NAI)
- Member, European Academy of Sciences and Arts (EASA)
- Fellow, American Association for the Advancement of Science (AAAS)
- Fellow, American Institute for Medical and Biological Engineering (AIMBE)
- Fellow, American Society of Mechanical Engineers (ASME)
- Fellow, International Society for Optics and Photonics (SPIE)
- Fellow, Society of Manufacturing Engineers (SME)
- Fellow, International Society for NanoManufacturing (ISNM)

Advisory and Editorial Boards

- 2026-present Co-Founder and Chief Technology Officer, TissueGenix, Inc.
- 2026-present Co-Founder and Scientific Advisory Board, ArthroWeld, Inc.
- 2026-present Editorial Board, *International Journal of Bioprinting* (Accscience)
- 2025-present Board of Directors, International Society for Biofabrication
- 2025-present Editorial Board, *Next Bioengineering* (Elsevier)
- 2023-2026 Associate Editor, *Journal of Nanoparticle Research* (Springer/Nature)
- 2022-2023 Scientific Advisory Board, BICO
- 2016-2022 Founder and Scientific Advisory Board, Allegro 3D, Inc. (now a BICO company)
- 2013-present Editorial Board, *Lasers in Manufacturing and Materials Processing* (Springer)
- 2014-present Editorial Board, *Additive Manufacturing* (Elsevier)
- 2017-present Editorial Board, *Bio-Design and Manufacturing* (Springer/Nature)
- 2008-2021 Editorial Board, *Biofabrication* (IOP).
- 2008-2020 Editorial Board, *The Open Materials Science Journal* (Bentham).
- 2010-2020 Editorial Board, *Journal of Nanoengineering and Nanomanufacturing* (ASP)
- 2010-2020 Editorial Board, *Journal of Nano Energy and Power Research* (ASP).
- 2014-2020 Scientific Advisory Board, StemoniX (now Vyant Bio, Inc.)
- 2016-2019 Editorial Board, *Scientific Report* (Nature)
- 2010-2016 Advisory Board, NextWave Ventures
- 2010-2011 Scientific Advisory Board, Biolux Corp
- 2007-2010 Associate Editor, *ASME Journal of Manufacturing Science and Engineering*
- 2007-2010 Associate Editor, *Journal of Biomedical Nanotechnology*
- 2005-2010 Editorial Board: *Nanomedicine* (Future Science Pub, UK).
- 2003 Guest Editor, *IEEE Transactions on Advanced Packaging*, special issue on MEMS/NEMS packaging.

Technical Committee

- Technical committee on State Strategy of Advanced Technology, State of Texas, 2004-2005.
- Technical committee, Micro/Nano systems of the Design Engineering Div., ASME, 2005-2010
- Technical committee, Biomanufacturing of ASME (MED), 2006-2018
- Technical committee, Nanomanufacturing of the ASME Nanotechnology Institute, 2003-2012.
- Technical committee, Nanorobotics and Nanomanufacturing of the IEEE Nanotechnology Council, 2003-2012.
- Technical committee, MEMS/NEMS Packaging (Chair 2001 and 2002) of the Electronics and Photonics Packaging Division, ASME, 2001-2010.
- Technical committee on Bionanotechnology and BioMEMS, IEEE-Engineering in Medicine and Biology Society (IEEE-EMBS), 2011- present
- Manufacturing Engineering Division Award Committee, ASME, 2018-2022
- Society for Biomaterials Postdoctoral Recognition Award committee, 2023.
- Judge Committee for Innovators Under 35 Asia Pacific (TR35 Asia Pacific), 2024.

Conference Chair / Committee

- Co-chair, Sensing session, 7th *Mechatronics Forum International Conference*, 2000.
- Organizer, MEMS Packaging Symposium of MEMS sub-division, International Mechanical Eng. Congress & Exposition (**IMECE**), 2001.
- Chair, MEMS Packaging Session I, IMECE 2001.
- Organizing committee, SPIE Lasers in Materials Processing & Manufacturing Conference (International Society for Optics and Photonics), 2002.

- Chair, MEMS Packaging Sessions I and II, IMECE 2002.
- Chair, Nano/Micro/Meso-scale Manufacturing Session, IMECE 2002.
- Organizer, MEMS Packaging Symposium of MEMS sub-division, IMECE 2002.
- Chair, MEMS Packaging Session III, IMECE, 2003.
- Panelist, "Challenging issues in NEMS/MEMS packaging", IMECE, 2003.
- Panelist, "Transport Phenomena in Processing of Biomaterials and BioMEMS", IMECE, 2003.
- Panelist, NSF CAREER workshop, NSF Grantees Conference, 2003.
- Organizing committee, Symposium of NEMS / MEMS Packaging, IMECE, 2003
- Organizing committee, Symposium on Micro- and Nanoscale Laser Materials Processing in 41st Annual Technical Meeting of the Society of Engineering Science, 2004.
- Organizing committee, Symposium of NEMS / MEMS Packaging, IMECE, 2004
- Chair, MEMS Packaging Session II, IMECE, 2004.
- Panelist, "Recent Development and Opportunities in Nanomanufacturing Towards 3D Nanosystems", IMECE, 2005
- Organizing committee, Symposium of NEMS / MEMS Packaging, IMECE, 2005
- Co-Chair, Nanoscale Radiation Heat Transfer, IMECE, 2005.
- Co-organizer, Materials Research Society (MRS) Symposium of Surface Modifications and Interactions for Manufacturing Applications, 2005.
- Organizing committee, Symposium of NEMS / MEMS Packaging, IMECE, 2006
- Program Committee of Nanomanufacturing, International Congress on Applications of Lasers & Electro-Optics (ICALEO), 2007.
- Organizing Committee, Micro & Nano Society-Wide Forum, IMECE, 2007.
- Organizing committee, Symposium of NEMS / MEMS Packaging, IMECE, 2007.
- Scientific Committee, International Conference on Agile Manufacturing, 2007.
- Organizing committee, SPIE International Symposium of Laser-based Micro- and Nano-Packaging and Assembly, 2007.
- Organizing Committee, Micro & Nano Society-Wide Forum, IMECE, 2008.
- Panelist, "Nanomanufacturing", The 8th International Conference on Frontiers of Design and Manufacturing, 2008.
- Organizing committee, "Cross Industry Issues in Nanomanufacturing Workshop", National Institute of Standards and Technology, May 2008.
- Program Committee (Nanophotonics), International Conference on Optical MEMS and Nanophotonics, Freiburg, Germany, 2008.
- Program Committee (Nanomanufacturing), ICALEO, 2008.
- Co-organizer, Symposium for 3D Nanofabrication Technologies for Tissue Engineering Scaffolds, 8th World Biomaterials Congress, Amsterdam, The Netherlands 2008.
- Organizing committee, SPIE International Symposium of Laser-based Micro- and Nano-Packaging and Assembly, 2008.
- Organizing Committee, Micro & Nano Society-Wide Forum, IMECE, 2009.
- Program Committee (Nanomanufacturing), ICALEO, 2009.
- Session Chair on "Fabrication of Nanophotonic Structures", 126th ECS meeting, Austria, 2009.
- Program Committee (Nanophotonics), International Conference on Optical MEMS and Nanophotonics, Clearwater Beach, FL, 2009.

- Session Chair, SPIE International Symposium of Nanomanufacturing and Nanometrology, 2009.
- Organizing committee, SPIE International Symposium of Nanomanufacturing and Nanometrology, 2009.
- Organizing committee, SPIE International Symposium of Laser-based Micro- and Nano-Packaging and Assembly, 2009.
- Program Committee (Nanomanufacturing), International Congress on Applications of Lasers & Electro-Optics (ICALEO), 2010.
- Organizing Committee, Micro & Nano Society-Wide Forum, IMECE, 2010.
- Program Committee (Nanophotonics), International Conference on Optical MEMS and Nanophotonics, 2010.
- Program Committee (“Micro-Nanotechnology Sensors, Systems, and Applications”), SPIE International Symposium on Defense, Security and Sensing, Florida, 2010.
- Track co-Chair, NanoEngineering for Medicine and Biology Congress 2010, Houston, TX.
- Program Committee (Nanomanufacturing), ICALEO, 2011.
- Organizing Committee, Micro & Nano Society-Wide Forum, IMECE, 2011.
- Organizing Committee, Micro & Nano Society-Wide Forum, International Mechanical Eng. Congress & Exposition, 2012.
- Program Committee (Nanomanufacturing), ICALEO, 2012.
- Technical committee, The 3rd ASME Micro/Nanoscale Heat and Mass Transfer International Conference, Atlanta, March 2012.
- Technical committee, IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS 2013), Suzhou, China, April 7-10, 2013.
- Technical committee, IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS 2014), Hawaii, China, April 13–16, 2014.
- Technical committee, 2014 Stem Cell Meeting on the Mesa IX, La Jolla, CA, 2014.
- Co-Chair, Tissue Engineering Session, Stem Cell Meeting on the Mesa X, La Jolla, CA, 2015.
- Scientific Symposium Steering Committee, Stem Cell Meeting on the Mesa X, La Jolla, CA, 2015.
- Scientific Advisory Committee, Tissue Engineering and Regenerative Medicine International Society Americas (TERMIS-AM) Annual Conference, San Diego, Dec. 11-14, 2016
- Technical committee, IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS 2017), Hawaii, April 9–12, 2017.
- Scientific Advisory Committee, 2017 International Conference on Biofabrication, October 15-18, 2017, Beijing, China
- Session Co-Chair, 2017 International Conference on Biofabrication, October 15-18, 2017, Beijing, China.
- Co-Organizer, 16th US-Korea Forum on nanotechnology, Sept. 23-24, San Diego, 2019.
- International Advisory Committee, International Conferences on Modern Materials and Technologies, Montecatini Terme, Italy, June 2020.
- Organizing Committee, Regenerative Engineering Conference, December 1-3, 2020
- Conference Chair, SelectBIO Conference on Bioprinting and Bioink Innovations for 3D-Tissues, October 6, 2021.
- Scientific Advisory Committee, 13th International Conference on Nanotechnology: Fundamentals and Applications (ICNFA'22), August 3-5, 2022, Prague, Czech Republic

- Organizing Committee, Global Summit and Expo on Nanotechnology and Applications (GSNA2022), Las Vegas, December 1-3, 2022.
- Session Chair, International Conference on Biofabrication, Saskatoon, Canada, September 17-20, 2023.
- Co-Chair, the Distributed Biomanufacturing Systems session, 2023 NSF Nanoscale Science and Engineering Grantees Conference, DC, December 7-8, 2023.
- Scientific Committee, 4th International Conference on Biomaterials, Bio-Design and Manufacturing, Tokyo, Japan, August 18-20, 2024.
- Scientific Committee, 5th International Conference on Biomaterials, Bio-Design and Manufacturing, Oxford, UK, August 8-10, 2025.

Proposal review panels/study sections

- NSF DMII Division proposal review panel, 2000.
- NSF DMII Division proposal review panels (two panels), 2001.
- The State of Louisiana Nanobiotechnology proposal review panel, 2002.
- NSF DMII Division proposal review panels (two panels), 2002.
- NSF CTS Division proposal review panel, 2003.
- NSF DMII Division proposal review panel, 2003.
- NSF DMII Division proposal review panels (two panels), 2004.
- NSF CTS Division proposal review panel, 2005.
- NSF DMII Division proposal review panel, 2005.
- NSF DMII Division proposal review panel, 2006.
- DOE Energy Nanomanufacturing, 2008
- NIH Biomaterials and Biointerfaces Study Section (ad hoc), 2007-present.
- NIH SBIR for Biomaterials, Drug and Gene Delivery, and Nanotechnology, 2009.
- DARPA DSO panel, 2009
- NIH Nanoinformatics Study Section, 2010.
- NSF CMMI Division panel, 2012.
- NSF CMMI Division panel, 2012.
- NSF CMMI Division panel, 2013.
- NSF CAREER Review Panel, 2013.
- NIH Shared Instrument Program Study Section, 2014.
- NIH Special Emphasis Panel for Bioengineering Research Partnership (BRP), 2015.
- Swiss National Science Foundation, 2016.
- NIH NIDDK RBK PPP Study Section, 2016
- NIH/NIAID Special Emphasis Panel - Human Tissue Models for Infectious Diseases (U19), 2016.
- NIH/NCI Special Emphasis Panel - Cancer Tissue Engineering Collaborative: Enabling Biomimetic Tissue-Engineered Technologies for Cancer Research (U01), 2017.
- NIH Director's Transformative Research Award, Stage I, 2017.
- NIH SBIR: Biomaterials, Delivery, and Nanotechnology, 2017.
- NIH BTS Special Emphasis Study Section, 2017.
- NIH New Innovator Program, 2017.
- NIH BMBI Special Emphasis Study Section, 2018.
- NIH New Innovator Program, 2018.
- NSF CAREER panel, 2018.
- NSF CMMI Division panel, 2018.
- NIH High Impact, Interdisciplinary Science in NIDDK Research Areas (RC2), 2019.
- NIH New Innovator Program, 2019.

- NIH U18 Drug Screening with Biofabricated 3-D Skin Disease Tissue Models, 2019.
- NIH/NIBIB Career Development (Ks) and Conference support (R13) Review Panel, 2020.
- NSF EEC Division panel, 2020.
- NIH F30/31/32 Fellowship review panel, 2020.
- NSF CMMI Division Panel, 2020.
- NIH New Innovator Program, 2020.
- NSF CMMI Division Review Panel, 2022.
- NIH-NIBIB T32 Training Review Panel, 2022.
- U.S. Department of Veterans Affairs Merit Proposal Panel, 2022.
- NSF CMMI CAREER panel, 2022.
- NIH New Innovator Program, 2022.
- NIH NIBIB Special Emphasis Study Section, 2023.
- DoD Military Infectious Disease Research Program Study Section, 2024
- NSF CMMI Division BRITE Program Review Panel, 2024.
- NIH Support for Research Excellence Study Section, 2024.
- NSF CMMI CAREER Review Panel, 2024.
- NIH SBIR Program, 2025.
- NIH New Innovator Program, 2025.

Proposal reviewer (mail-in proposals) for the following agencies

- Civilian Research & Foundation of the U. S. Department of State, 2000-2002.
- Lawrence Livermore National Laboratory, 2000.
- NSF CTS Division, 2002-2004.
- The Petroleum Research Fund of the American Chemical Society, 2003.
- NSF DMII Division, 2004, 2005.
- Agency for Science, Technology and Research (Singapore), 2003, 2007.
- Air Force Office of Scientific Research, 2004.
- Army Research Office, 2006.
- NSF Chemistry, 2006.
- Department of Energy (DOE) Basic Energy Science, 2008.
- Swiss National Science Foundation, 2008, 2009.
- The State of Missouri Life Science Research Board, 2009.
- Florida State Fund, 2010.
- NIH SBIR on Basic and Integrative Bioengineering, 2011.
- NSF DMR Division, 2012
- NIH SBIR on Basic and Integrative Bioengineering, 2012.
- Department of Energy (DOE) Basic Energy Science, 2012.
- NSF CMMI Division, 2012.
- NSF DMR Division, 2013.
- NSF CMMI Division, 2013.
- A joint program by the Netherlands Organisation for Health Research and Development (ZonMw) and the German Federal Ministry of Education and Research (BMBF), 2015.
- Agency for Science, Technology and Research (A*STAR), Singapore, 2016.
- Science Foundation Ireland, 2017.
- South Carolina EPSCoR Stimulus Research Program, 2017.
- NSF CMMI Division, 2020
- Swiss National Science Foundation, 2023.
- NSF CMMI Division, 2023.

- NSF CMMI Division, 2024.
- Dutch Research Council, The Netherlands, 2024.
- Christian Doppler Forschungsgesellschaft (Austria), 2025.
- Dutch Research Council, The Netherlands, 2026.

Referee for the following journals

Science	Nature
Nature Biotechnology	Nature Materials
Nature Nanotechnology	Nature Communications
PNAS	Nature Biomedical Engineering
Advanced Materials	Nature Protocol
Nano Letters	Advanced Functional Materials
Journal of Applied Physics	Journal of Manufacturing Processes
ACS Nano	Microscale Thermophysical Engineering
Biomaterials	IEEE Transactions on Advanced Packaging
Optics Letters	Journal of Laser Micro and Nanoengineering
Sensors and Actuators A	International Journal of Heat and Mass Transfer
Applied Physics Letters	Journal of Manufacturing Science and Engineering
Journal of Heat Transfer	Journal of the American Chemical Society
Optics Express	Journal of Micromechanics and Microengineering
Thin Solid Films	Journal of Nondestructive Evaluation
Applied Physics A	Journal of Optics & Laser Technology
Nanomedicine	Journal of Biomedical Materials Research B

Referee for the following international/national conferences

- ASME International Mechanical Engineering Congress & Exposition (1998-2007).
- National Heat Transfer Conference (1998-2007).
- International Conference on Advanced Materials (1999).
- European Conference on Thermophysical Properties (2000).
- North American Manufacturing Research Conference, SME (2002-2006)
- International Conference on Metallurgical Coatings and Thin Films (2003).
- American Institute of Aeronautics and Astronautics (AIAA) conference (2004).
- SPIE International Symposium of Laser-based Micro/Nano-Packaging & Assembly (2005-2008).
- International Conference on Agile Manufacturing (2007).
- International Conference on Optical MEMS and Nanophotonics (2008).
- North American Manufacturing Research Conference, SME (2011)
- IEEE-NEMS 2013, 2014

Textbook reviewer

Reviewed 7 textbooks in the areas of Bioprinting, Biomedical Nanotechnology, MEMS, Heat Transfer, Nano and Micro-fabrication, and Manufacturing respectively (2000-present). The publishers are McGraw-Hill, Springer, Addison-Wesley Longman, and Elsevier.

Students and Visiting Scholars

Ph.D. in Progress

1. Emmie Yao (PhD student, NanoEngineering, UCSD, 2023-present, NSF GRF fellow)
2. Betty Huang (PhD student, NanoEngineering, UCSD, 2023-present)

3. Toby Meng-Saccoccio (PhD student, NanoEngineering, UCSD, 2024-present)
4. Calista Adler (PhD student, NanoEngineering, UCSD, 2026-present, NSF GRF fellow)

Current Postdocs

1. Cheng Lyu (2023-present)
2. Jiaao Guan (2023-present)
3. Ting-yu Lu (2025-present)

Postdoc and Project Scientist Supervisions Completed and New Position

1. Li-Hsin Han (2009-2010), Associate Professor at Drexel University.
2. Jin Woo Lee (2009-2012) Associate Professor at Gachon University (Korea).
3. Pranav Soman (2009-2013), Professor at Syracuse University.
4. Xin Qu (2011-2014), Principal Scientist in Novartis Medical Research Institute.
5. Wei Zhu (2016-2018), CTO, CELLINK
6. Michelle Ma (2018-2019), Scientist, Illumina.
7. Claire Yu (2016-2020), Senior Research Scientist, Vertex Pharmaceuticals.
8. David Berry (7/2016-6/2021), Assistant Professor, UCSD Dept of Orthopaedic Surgery.
9. Shanting You (1/2020-8/2022), Assistant Professor, University of Science and Technology of China.
10. Xiaocheng Wang (7/2022-6/2023), Associate Professor, Anhui Medical University.
11. Min Tang (8/2022-6/2023), Associate Professor, Shanghai University of Traditional Chinese Medicine.
12. Daniel Wangpraseurt (8/2020-7/2024, Assistant Project Scientist), Associate Research Scientist, Scripps Institute of Oceanography, UCSD.
13. Jacob Schimelman (2023-2026), Scientist, Science Corp.
14. Yazhi Sun (9/2025-9/26), Senior Engineer, e184, Inc.

Ph. D. Supervisions Completed

1. Shifeng Li (PhD in Mechanical Engineering, 2002-2004), “Development of Microfluidic Systems for Biological Applications and Their Transport Issues”, August 2004, UT-Austin, currently Senior Director, Head of R&D Engineering at Genapsys.
2. Senthil Theppakuttai (PhD in Mechanical Engineering, 2002-2006), “Laser Micro/Nano Scale Processing of Glass and Silicon”, May 2006, UT-Austin, R & D Manager at SV Probe, Inc.
3. Dongbing Shao (PhD in Mechanical Engineering, 2003-2006), Sub-wavelength Optical Phenomena and Their Applications in Nano-fabrication, August 2006, UT-Austin, currently Senior Engineer/Scientist at IBM T. J Watson Research Center.
4. Yi Lu (PhD in Mechanical Engineering, 2002-2006), “Micro/Nano Fabrication of Polymeric Materials by DMD-based Micro-Stereolithography and Photothermal Imprinting”, December 2006, UT-Austin, currently Program Manager at Facebook, Inc.
5. Arvind Battula (PhD in Mechanical Engineering, 2003-2007), “Optical Near-field Effects for Submicron Patterning and Plasmonic Optical Devices, August 2007, UT-Austin, Head of Data Science at Quantum Energy Partners.
6. Carlos Aguilar (PhD in Biomedical Engineering, 2004-2008), “Synthesis, Characterization and Integration of Piezoelectric Zinc Oxide Nanowires”, December 2008, UT-Austin, currently Associate Professor at the University of Michigan, Ann Arbor.
7. David Fozdar (PhD in Mechanical Engineering, 2005-2009), “Modulating Cell-Surface Interactions: Nanopatterned Features Affect the Behavior of Neurons and Preadipocytes”, May 2009, UT-Austin, currently ASIP Structural Engineer at Boeing.

8. Li-Hsin Han (PhD in Mechanical Engineering, 2003-2009), "Light Driven Microactuators: Design, Fabrication, and Mathematical Modeling", July 2009, UT-Austin, currently Associate Professor at Drexel University.
9. Wei Wang (PhD in Mechanical Engineering, 2006-2010), "Plasmonic Properties of Subwavelength Structures and Their Applications in Optical Devices", November 2010, UT-Austin, currently Senior Director at China Power Investment Corp.
10. Shaomin Wu (PhD in Materials Sciences and Engineering, 2006-2010), "Optical Phenomena of Plasmonic Nanostructures and Their Applications in Energy Conversion", July 2010, UT-Austin, currently Senior Engineer at Microsoft.
11. Jamil Wakil (PhD in Mechanical Engineering, 2005-2010), "Thermal and Mechanical Analysis of Interconnect Structures in 3D Stacked Packages", May 2010, UT-Austin, Thermal Architect at HP
12. Wangde Zhang (PhD in Bioengineering, 2007-2012), "Investigation of Cell Environment Interaction *in vitro* Using a Femtosecond Laser", July 2012, UCSD, currently VP at Bank of America, Merrill Lynch, New York City.
13. Kolin Hribar (PhD in Nanoengineering, 2011-2015), "Light-Assisted Biopatterning of Hydrogels for Investigating Cell Interactions within their Microenvironment", July 2015, UCSD, currently CEO of Cybre Biotech, Inc.
14. Wei Zhu (PhD in Nanoengineering, 2012-2016), "3D Printing of Functional Biomaterials for Tissue Modeling", August 2016, UCSD, currently CTO at CELLINK, Inc.
15. John Warner (PhD in Nanoengineering, 2010-2016), "3D printing of Static and Dynamic Biomaterial Scaffolds for Tissue Engineering", September 2016, UCSD, currently Scientist at BlueNalu, Inc.
16. Justin Liu (PhD in Materials Sciences and Engineering, 2012-2017), "Rapid 3D Bioprinting of Cardiac Tissue Models", December 2017, UCSD, currently Group Leader at Intel.
17. Xuanyi (Michelle) Ma (PhD in Bioengineering, 2013-2018), "Rapid 3d Bioprinting of Biomimetic Liver Tissues for Modeling Healthy and Disease States *in vitro*", August 2018, UCSD, currently Scientist at Illumina.
18. Pengrui Wang (PhD in Materials Sciences and Engineering, 2014-2019), "Modulating Physical and Chemical Properties of Biomaterials in Rapid 3D Printing", May 2019, currently Innovation Scientist at Beyond Meat, Inc.
19. Shangting You (PhD in Nanoengineering, 2015-2019), "Manipulating Light-Matter Interactions in Photopolymerization-based Microscale 3D Printing", December 2019, Assistant Professor, University of Science and Technology of China.
20. Zack Zhong (PhD in Nanoengineering, 2017-2021), "3D Bioprinting of Ocular Stem Cells", June 2021, currently Scientist at Lyell Immunopharma.
21. Kathleen Miller (PhD in Nanoengineering, 2016-2021), "3D Bioprinting of Cardiac Micro-tissues", December 2021. Currently Scientist at 10x Genomics.
22. Min Tang (PhD in Nanoengineering, 2017-2022), "Investigating Glioblastoma Microenvironment and Cellular Interactions with 3D Bioprinted Tumor Models", July 2022. Currently Associate Professor, Shanghai University of Traditional Chinese Medicine.
23. Henry Hwang (PhD in Nanoengineering, 2015-2022), "Digital Light Processing Based 3D Printing for Microphysiological Systems Applications", July 2022. Currently Scientist at Vizgen.
24. Jiaao Guan (PhD in Electrical and Computer Engineering, 2018-2023), "Intelligent Bioprinting for Structure and Mechanical Property Modulation", May 2023; AI Engineer at CELLINK.
25. Wisarut Kiratitanaporn (PhD in Bioengineering, 2018-2023), "3D Bioprinting and Materials Development for Musculoskeletal Tissue Engineering Applications", Research Associate at Cincinnati Children's Hospital.

26. Jacob Schimelman (PhD in Nanoengineering, 2017-2023): “Engineering Polymeric Scaffolds for Studying Neural Tissue Development, Pathology, and Repair”, Sept 2023, Scientist, Science Corp.
27. Yi Xiang (PhD in Nanoengineering, 2019-2025): “High-Fidelity 3D Bioprinting for Complex In Vitro Models”, June 2025, Scientist at Vitra Labs, Inc.
28. Yazhi Sun, (PhD in Nanoengineering, 2020-2025): “Bioprinted Photosynthetic Living Materials”, August 2025, Senior Engineer at e184, Inc.
29. Tingyu Lu, (PhD in Materials Science and Engineering, 2021-2025): “Advancing In Vitro Tissue Modeling Through Bioprinted Biomaterial Platforms”, August 2025, Scientist at TissueGenix, Inc.

M.S. Supervisions Completed

1. Senthil Theppakuttai, 1999-2000, ISU IE, continued for PhD study.
2. Vijay Kancharla, 2000-2001, ISU IE, Engineer at IPG Photonics, Inc.
3. Shifeng Li, 2000-2001, ISU IE, continued for PhD study.
4. Wei Zheng, 2000-2001, ISU IE, Sr. Electrical Engineer at Boston Scientific.
5. Yi Lu, 2001-2002, UT ME, continued for PhD study.
6. Hyun-wook Kang, 2003-2004, UT ME, Assistant Prof, Pukyong National University (Korea).
7. David Fozdar, 2003-2004, continued for PhD study.
8. Carlos Aguilar, 2004-2005, UT ME, continued for PhD study.
9. Matthew Hense, 2005-2006, UT ME, Engineer at Technip.
10. Hongdae Moon, 2005-2006, UT ME.
11. Wande Zhang, 2008-2009, UT BME, continued for PhD study.
12. Wei Wang, 2008-2009 UT ME, continued for PhD study.
13. John Warner, 2011-2012, UCSD NE, continued for PhD study.
14. Peter Chung, 2011-2012, UCSD NE, continued for PhD study.
15. Justin Liu, 2011-2012, UCSD MSE, continued for PhD study.
16. Kolin Hribar, 2011-2012, UCSD NE, continued for PhD study.
17. Wei Zhu, 2012-2013, UCSD NE, continued for PhD study.
18. Xuanyi (Michelle) Ma, 2013-2014, UCSD BioE, continued for PhD study.
19. Kyle Meggs, 2014-2015, UCSD NE, now at Google.
20. Pengrui Wang, 2014-2015, UCSD MSE, continued for PhD study.
21. Yew Leong, 2015-2016, UCSD NE.
22. Shanting You, 2015-2016, UCSD NE, continued for PhD study.
23. Henry Hwang, 2015-2016, UCSD NE, continued for PhD study.
24. Kathleen Miller, 2016-2017, UCSD NE, continued for PhD study.
25. Jiaao Guan, 2017-2018, UCSD ECE, continued for PhD study.
26. Min Tang, 2017-2018, UCSD NE, continued for PhD study.
27. Jacob Schimelman, 2017-2018, UCSD NE, continued for PhD study.
28. Wisarut Kiratitanaporn, 2018-2019, UCSD BE, continued for PhD study.
29. Yi Xiang, 2019-2020, UCSD NE, continued for PhD study.
30. Leilani Kwe, 2020-2021, UCSD ChemE, Intel.
31. Yazhi Sun 2020-2021, UCSD NE, continued for PhD study.
32. Michelle Bautista-Layton, 2020-2021, UCSD NE.
33. Ting-yu Lu, 2021-2022, UCSD MatSE, continued for PhD study.
34. Lin Huang, 2023-2024, UCSD NE, continued for PhD study.
35. Emmie Yao, 2023-2024, UCSD NE, continued for PhD study.
36. Toby Meng-Saccoccio, 2024-2025, UCSD NE, continued for PhD study.
37. Ashley Altera, 2024-2025, UCSD NE.
38. Nancy Zhang, 2025-2026, UCSD NE.

Undergraduate Student Researchers (and graduate school)

Eddie Degracia (9/02-12/02)	Clarissa Lui (6/03-12/03, Cornell)
Aaron Hulse (9/03-5/04, UT Austin)	Shaz Viljee (9/03-12/03, UT Austin)
Priyanshu Gupta (7/04-5/05, Stanford)	Gerry Suhali (5/05-5/06)
Chris Kuryak (4/06/-8/06, MIT)	Darren Cooper (4/06/-8/06)
Jennifer Tobias (4/06/-8/06)	Chris Javadi (5/06/-12/06)
Nicholas Mitchell (10/06-12/07, MIT)	Antonio Osorio (10/06-12/07, Michigan)
Hai Nguyen (1/07-12/08, UT Austin)	Brandon Beberwyck (5/07-5/09, UC Berkeley)
Lucy Lu (8/08-5/10)	Marc Gonzalez (1/09-5/09)
Max Darnell (5/09-5/10, Harvard)	Keith Yu (10/10-6/14)
Sam Huang (01/11-6/13)	Kyle Megs (7/11-6/14, UCSD)
April Pereira (6/12-6/13, UCSD)	Matthew Tom (07/12-6/13, UCSD)
Nicole Lim (09/12-6/13, Northwestern)	Brian Chiem (02/13-06/13)
Kevin Crowley (06/13-12/13)	Yew Leong (04/13-06/15, UCSD)
Helen Bae (Summer 2013, Harvard)	Padraig Buckley (10/13-12/14)
Jana Zaidan (01/14-09/14)	Hong Zhang (01/14-06/15, John Hopkins)
Leon Zhou (02/14 – 06/14)	Kate Newcomer (03/14-06/14)
Ash Garland (03/14-06/14)	Bernardo Arevalo (05/15-12/14)
Alex Yang (10/14 – 06/15, Google)	Grace Whang (09/14 – 6/17, UCLA)
Heng Meng (10/14 - 12/14)	Putthawan Iamsirithaworn (12/14 – 5/2015)
Cheuk Sun Lai (03/15-6/17, Rice Univ)	Natalie Lawrence (03/15-6/18, UCSD)
Jesse Zhou (03/15-5/16)	Christian Gutierrez (10/15-6/16)
Takeyah Campbell (06/15-08/15, from Howard, UCSD STARS REU program)	Amy Moran (10/15-6/19, Stanford))
Lauren Lopez (9/15-6/17)	Andrew Li (4/16-6/19, Microsoft)
Grace Victorine (1/16-6/17)	Haixu Shen (3/16-6/18, NWU)
Edward Huang (7/16-12/16)	Crystal Avila (6/16-8/16 from UC Davis)
Anna Koroleva (4/16-6/18, UCSD)	Weizhe Xu (5/16-6/18, UW)
Josue Campo (6/16-8/16 from SDSU)	Alexandria Hairabedian (2/2017-6/19, UCSD)
Jacob Stupin (2/2017-6/18, UCSD)	Xueyi Wan (2/17-6/19, UCSD)
Jeffrey Alido (2/2017-6/20, BU)	
Annie Vesey (6/17-8/17, from Stanford, UCSD NSF REU of Biomaterials, Apple)	
Maria Mesina (6/17-8/17, from UC Merced, UCSD NSF REU of SDNI)	
Deepak Lakshmipathy (10/17-6/19, UI Med sch)	Trevor Tam (1/2018-6/21, UCSD)
Frank He (1/18-6/20, UCSD)	Leilani Kwe (4/18-6/20, UCSD, Intel)
Xinyue Ma (4/18-6/20, Dental School))	Xiaobao Shi (8/18-6/21, U Chicago)
Nelson Juarez (6/18-8/18, Cebtro de Estudios Universitarios, UCSD ENLACE Program)	
Bryan Soriano (6/18-8/18, UC Merced, UCSD STARS Program)	
Joanne Hwang (6/18-8/18, Natl Tsing Hua Univ, UCSD International Student Research, UIUC)	
Brian Xi (9/18-6/20, RSRI, U Chicago)	Luna Xia (10/18-6/20, Columbia U)
Luwen Chen (2/19-6/21, UC Berkeley)	Samuel Figueroa (06/-08/19, CAMP program)
Ameen Muhammad (06/19-08/19, from Howard Univ, UCSD STARS REU program, AA)	
Amaris Paramo (06/19-08/19, from Butte Community College, SDNI REU program)	
Tso-Yu Chang (6/19-8/19, Natl Tsing Hua Univ, UCSD International Student Research Program)	
Trevor Fried (8/19-6/21, UCSD)	Emmie Yao (8/19-6/23, UCSD)
Zhitian Shi (8/19-6/22, U of Minnesota)	Jacob Pustelnik (11/19-6/22, UC Davis)
Jerry Wu (11/19-6/22, Princeton)	Kyle Mumm (11/19-6/22, UVA)
Matthew Moldthan (06/20-08/20, from Cal State U Northridge, UCSD STARS program)	
Yizhi Yuan (6/20-12/22, Qualcomm)	Mary Melarkey (9/20-6/24, RSRI, UC Davis)

Di Yu (4/21-12/22, Johns Hopkins)	Alison Lao (4/21-6/23, Rice)
Maya Bocanegra (06/21-08/21, from Los Angeles Valley College, UCSD STARS REU program)	
Sophie Pearson (6/21-12/22, Univ of Utah)	Celine Tung (9/21-6/24, UCSF Dental School)
Jasmine Le (9/21-6/25, RSRI)	Aniket Dhar (9/21-6/23, Columbia Univ)
Nancy Zhang (2/22-6/24, UCSD)	Erin Shen (3/22-6/24, Best Senior Award, Rice)
Audrey Lee (5/22-8/22)	Tian Gao (6/22-6/23)
Gilda Castellanos (6-8/22 from Cal State Univ San Marcos, UCSD STARS program)	
Isabel Flores (8/22-6/24)	Malleeka Suy (8/22-6/24)
Rachel Chickini (9/22-6/23)	Riley Liu (1/23-12/24, GA Tech)
Grace Lu (1/23-6/26, UCSD)	Sophie Brown (1/23-6/26)
Rodrigo Gómez Núñez (6/23-8/23, ENLACE)	Evelyn Magaña Leyva (6/23-8/23, ENLACE)
Emma Berman (6/23-6/26, UC Berkeley)	Amelia Burns (6/23-8/23, Harvard/MIT HST)
Jayden Chaloux (6-8/23, REM, UCLA)	Krish Narotam (10/23-6/26, UCSD)
Michael Julian (1/24-1/26, UCSD)	Saidi Garcia (Cal State San Marcos, 6-8/24)
Bhavya Ostawal (10/24-6/25)	Rajat Kharel (1/25-6/25)
Katarina Ercegovac (2/25-present)	Alexander Park (6/25-present)
Emilee Thippavong (9/25-present)	Yiwen Zhao (1/26 – present)
Keira Leistikow (1/26 - present)	Amber Sun (1/26 - present)
Zhongzheng Liu (5/26 - present)	Hou De Zhu (5/26 - present)
Elizabeth Bibona (5/26 - present)	Kate Chiavatti (6/26 - present)

Teaching and Course Development

1. IE 248 – “Introduction to Manufacturing Processes and Specifications” (Iowa State, junior level, taught in Spring 2000 and 2001).
2. IE548X – “Introduction to Micro-fabrication and Micro-systems” (Iowa State, graduate level, initiated and taught in Fall 2000 and 2001).
3. ME339 - “Heat Transfer” (UT Austin, junior level core course, taught in Fall 2002, Spring/Fall 2003, Fall 2004, Spring 2005, Spring/Fall 2006, Spring/Fall 2007).
4. ME381R - “Nano/Micro-Electro-Mechanical Systems (NEMS/MEMS)” (UT Austin, graduate level, initiated and taught in Spring 2002, 2003, 2004, and 2006).
5. CH 393L – “Nanoscience and Nanotechnology” (UT Austin, graduate level, initiated, co-instructor and team-taught in Spring 2003).
6. NANO 206 - “Nanomanufacturing” (UCSD, graduate level, initiated and taught every year since Fall 2011).
7. NANO 112 - “Synthesis and Fabrication of Nanoengineering Systems” (UCSD, undergraduate core course, initiated and taught every year from Spring 2012 to Spring 2020).
8. NANO 150 - “Mechanics of Nanomaterials” (UCSD, undergraduate course, taught in Winter 2013).
9. NANO 101 - “Introduction to Nanoengineering” (UCSD, undergraduate course, taught in Winter 2015 and 2016).
10. CMM 250: Core Course in Stem Cell Biology and Medicine (co-lecturer with other UCSD faculty, every Winter quarter, 2014-2018).
11. CENG 101B - “Heat Transfer” (UCSD, undergraduate core course, taught every Spring since 2023).

Department / University Services

1. Computer Resources Committee, Industrial and Manufacturing System Engineering Department, Iowa State University (1999-2001)

2. Thermal/Fluid Area Doctoral Qualifying Examination Chair (Spring and Fall 2003, Spring 2006), Member (2002-2010), UT Mechanical Engineering Department
3. Graduate Studies Committee, UT Mechanical Engineering (2002-2010)
4. Graduate Studies Committee, UT Biomedical Engineering (2002-2010)
5. International Graduate Student Admission Committee, UT Biomedical Engineering Department (2002-2005)
6. Faculty Recruit Committee, UT Mechanical Engineering Department (2003-2006)
7. Committee member, Doctoral Portfolio Program in Nanotechnology at UT Austin (representing the Mechanical Engineering Department) (2003-2010)
8. Member, Thermal/fluid Area Faculty Search Sub-committee, UT Mechanical Engineering Department (2004-2006)
9. Member, Thermal/fluid Area Strategic Plan Development Committee, UT Mechanical Engineering Department, 2005-2006
10. Faculty Marshall, Graduate School Commencement, 5/2005, 5/2007.
11. Recruiting Committee, UT-Austin and UT Medical Branch MD/PhD program, 2006
12. Member, Outstanding Thesis/Dissertation Award Committee, UT Austin 2005, 2007
13. Chair, Micro and Nano-engineering Strategic Plan Development Committee, UT Mechanical Engineering Department, 2005-2006
14. Seminar coordinator of the Thermal/Fluid Area, UT Mechanical Engineering Department, Spring 2007.
15. Graduate Studies Committee, UT Materials Science and Engineering (2007-2010)
16. Faculty Marshall, Cockrell School of Engineering Commencement, 12/2008.
17. Chair, NE Department Graduate Affairs Committee, UCSD, 2010-2014
18. Chair (2014-2019) and Member (2010-present), NE Department Executive Council, UCSD
19. Member, NE Department Newsletter Committee, UCSD, 2010-2011
20. Chair or member of Ad-Hoc Committees, NE Department faculty promotion review committee, UCSD, 2010-present.
21. Member, Excellence/Diversity Faculty Search Committee, Jacobs School of Engineering (JSOE), UCSD 2012-2013
22. Member, JSOE Strategic Plan for Graduate Program, UCSD, 2012-2013.
23. Chair, Faculty Search Committee, 2014-2015.
24. Vice Chairman, NE Department, UCSD, 2014-2019
25. Member, JSOE Master's Growth Strategy Committee, UCSD, 2015
26. Member, Committee for the Global Faculty Search in Precision Medicine (sub-committee for Omics Sensors, Devices and Imaging Committee, VCHS of UCSD, 2015
27. Member, NE Industrial Advisor Board (IAB) Committee, 2015-2019
28. Executive committee member, UCSD SDNI, 2015-present
29. Member, Faculty Search Committee, 2016-2017.
30. Member, UCSD Siebel Scholars Selection Committee, 2019
31. Search committee for the Director of the Institute of Engineering in Medicine (IEM), 2019.
32. Sub-committee Chair (Research), JSOE Strategic Plan Development Committee, 2019.
33. Member, Dean's Faculty Council, Jacobs School of Engineering, 2019-2023
34. Chairman, NE Department, UCSD, 2019-2023
35. UCSD Council of Chairs, 2019-2023
36. Member, NE Space and Facility Committee, 2019-2023.
37. JSOE Kun Zhang Endowed Chair Professor evaluation committee, 2020.
38. JSOE Divisional Budget Planning Task Force, 2020
39. UCSD CIRM Training Grant Steering Committee, 2022

40. Member, UCSD Siebel Scholars Selection Committee, 2022
41. UCSD Annual New Student Welcome Convocation, September 2022.
42. UCSD Doctoral Commencement Department Representative, 2023
43. JSOE Space Management Committee, 2023-2026
44. UCSD Medical Scientist (MD/PhD) Training Program (MSTP) Admissions Committee, 2023-24
45. UCSD Senate Divisional Representative Assembly, alternate representative, 2024-2026
46. CNE Department AIChE Reception Committee, Fall 2024.
47. MATS Strategic Plan II committee, 1/26-present