Kaiyan Qiu, *Ph.D.* | *Curriculum Vitae*

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School of Mechanical and Materials Engineering, Washington State University, Pullman, WA 99164

ACADEMIC APPOINTMENTS & EDUCATIONS

Washington State University, Pullman, WA (08/2020-Present)
- **Berry Family Assistant Professor** in School of Mechanical and Materials Engineering.

Princeton University, Princeton, NJ (09/2014-06/2015)
& **University of Minnesota**, Minneapolis, MN (07/2015-06/2020)
- **Postdoctoral Associate** in Mechanical Engineering. **Postdoc Advisor:** Michael C. McAlpine

Dartmouth College, Hanover, NH (06/2013-08/2014)
- **Research Associate** in Thayer School of Engineering. **Postdoc Advisor:** Ulrike U. G. Wegst

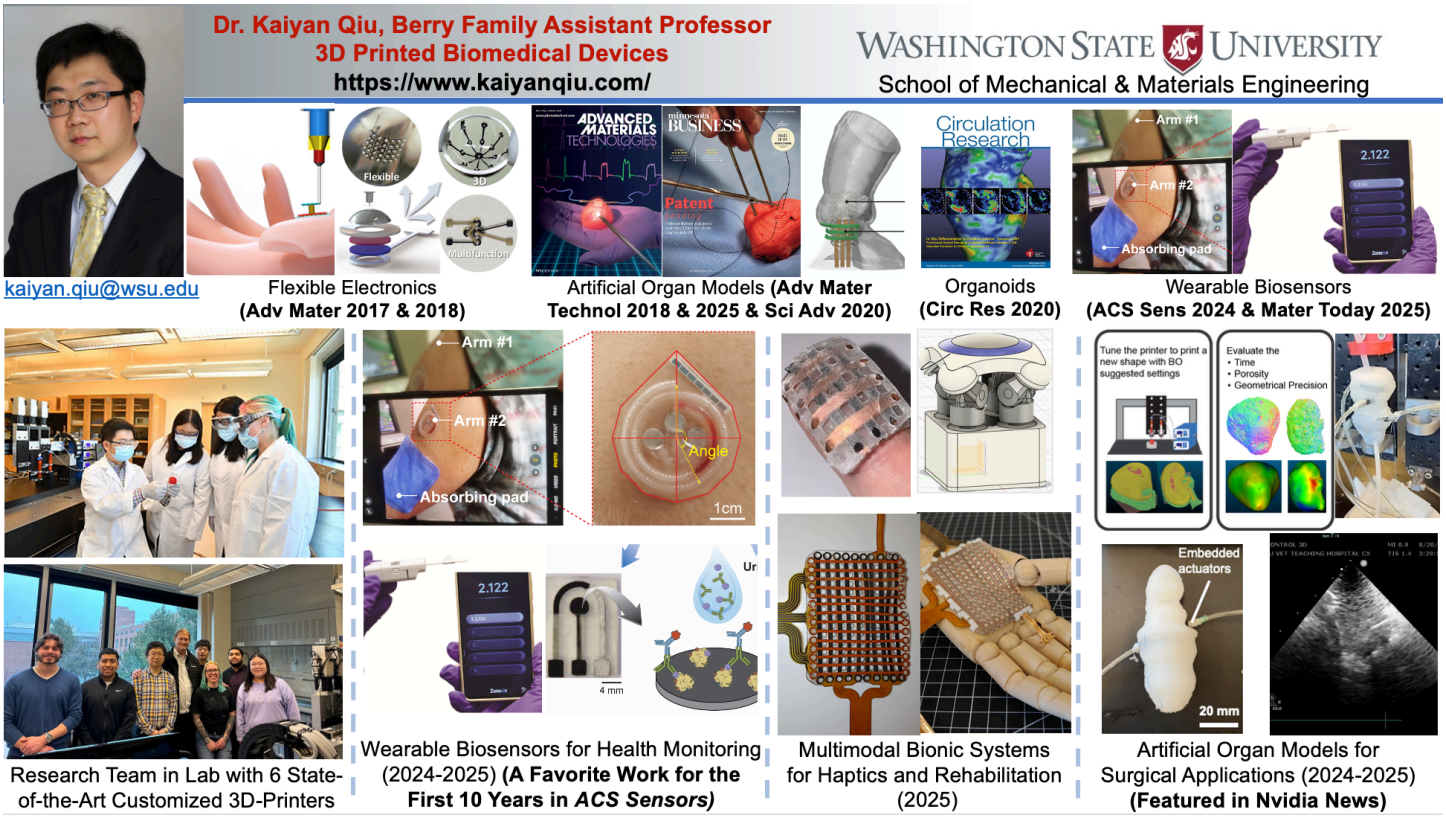
Cornell University, Ithaca, NY (08/2007-06/2013).
- **Ph.D.** (August 2012) in Fiber Science with Polymers & Biological Engineering. **PhD Advisor:** Anil N. Netravali
  - **Ph.D. Thesis**: Biobased and biodegradable polymer nanocomposites

Donghua University, Shanghai, China (09/2000-03/2007).
- **B.S. & M.S.** in Chemical Engineering

Shanghai Jiaotong University, Shanghai, China (01/2002-07/2004)
- **Undergraduate Dual Major Diploma** in Business Administration

RESEARCH INTERESTS

- 3D Printing and Functional Materials
- Bionic Systems for Haptics Restoration and Other Rehabilitations
- Wearable Biosensors for Health and Disease Monitoring
- Artificial Organ Models for Surgical and Medical Applications
- Biomimetic Surfaces for Enhanced Locomotion



PAPER PUBLICATIONS (CITATION 2536 & H-INDEX 18 & I10 INDEX 21)

[30] **H. Shen, N. Bogdv, Y. Zhang**, S. Yao, P. Dutta*, **K. Qiu*.** **'A modular 3D bionic multimodal sensing system on prosthetics for texture and material identification.'**, Completed Work and Manuscript in Preparation, (one Ph.D. student and two undergraduates (bold) advised by Qiu)

[29] **A. G. Obando, H. Shen, M. McGoven, Y. Zhang, V. Lin, D. Fu**, Ryan Baumwart, **K. Qiu***. **'3D-Printed Dynamic Heart Model with Left-Side Anatomy and Integrated Sensor for Edge-to-Edge Repair and Regurgitation Reduction.'** ***Advanced Materials Technologies***, Submitted (two Ph.D. students, two undergraduates, and two high school students (bold) advised by Qiu)

[28] **Y. Fu, C. Chen**, X. Li, Y. Song, C. D. Simpson, L. P. Naeher, **K. Qiu***, D. Du*. '**Fabrication and Optimization of a Hybrid 3D-Printed Flexible Electrochemical Biosensor for Sensitive Detection of 1-Hydroxypyrene Glucuronide, an Associated Wildfire Exposure Biomarker',** 2025, ***Sensors and Actuators B: Chemical***, Submitted (two Ph.D. students (bold) advised by Qiu)

[27] **C. Chen⁺, Y. Fu⁺**, Y. Liu, P. Dutta, Y. Lin, D. Du*, **K. Qiu***. **'Next-Generation Health Monitoring: The Role of Nanomaterials in 3D-Printed Wearable Devices.'** ***Materials Today*****,** 2025, 86, 317-339 (two Ph.D. students (bold) advised by Qiu)

[26] **C. Chen⁺, Y. Fu⁺**, Y. Liu, Y. Lin, D. Du*, **K. Qiu***. **'3D-printed hollow microneedle-based electrochemical sensor for real-time and wireless glucose monitoring.'** ***ChemRxiv***, 2025, DOI: 10.26434/chemrxiv-2025-gv8xt (two Ph.D. students (bold) advised by Qiu)

[25] **C. Chen**, **K. Qiu***. **'3D printed artificial organ models for surgical applications.'** Biomedical Nanotechnology: Methods in Molecular Biology, vol 2902, ***Springer Nature***, 2025, pp 183-195, (a Ph.D. student (bold) advised by Qiu)

[24] **E. Chen⁺**, A. Ahmadian⁺, **S. S. Sparks**, **C. Chen**, A. Deshwal, J. R. Doppa*, **K. Qiu***. **'Machine learning enabled design and optimization for 3D-printing of high-fidelity presurgical organ models.'** ***Advanced Materials Technologies***, 2025, 10(1), 202400037. (three students (bold) advised by Qiu)

- ❖ Featured in WSU Insider & over 17 news outlets
- ❖ Reported and Featured in Nvidia Blog News

[23] **S. S. Sparks⁺**, **A. G. Obando⁺,** Y. Li, S. Chen, S. Yao, **K. Qiu***. **'3D-printed biomimetic and bioinspired soft actuators.'** ***IET Cyber-Systems and Robotics***, 2024, 6(4), e70001. (two Ph.D. students (bold) advised by Qiu)

[22] **C. Chen**, **Y. Fu**, **S. S. Sparks,** Z. Lyu, A. Pradhan, S. Ding, N. Boddeti, Y. Liu, Y. Lin, D. Du*, **K. Qiu***. **'3D-printed flexible microfluidic health monitor for *in-situ* sweat analysis and biomarker detection.'** ***ACS Sensors***, 2024, 9, 3212-3223. (three Ph.D. students (bold) advised by Qiu)

- ❖ Featured in WSU Insider & over 25 other news outlets
- ❖ Top 10 most read paper in *ACS Sensors* in July 2024
- ❖ Selected by Editor-In-Chief as One of Favorite Papers in the First 10 Years of ACS Sensors

[21] Y. Sun, J. Heacock, **C. Chen**, **K, Qiu**, L. Zou, J. Liu, Y. C. Li. **'Incorporation of gentamicin- encapsulated PLGA nanoparticles into PU/PEO nanofiber scaffolds for biomedical applications.'** ***ACS Applied Nano Materials***, 2023, 6(17), 16096-16105 (a Ph.D. student (bold) advised by Qiu, **IF: 6.14**)

[20] Z. Lyu, S. Ding, D. Du, **K. Qiu**, J. Liu, X. Zhang, Y. Lin. **'Recent advances in biomedical applications of 2D nanomaterials with peroxidase-like properties.'** ***Advanced Drug Delivery Review***, 2022, 185, 114269 (collaborative review paper in WSU, **IF: 15.47**)

[19] **K. Qiu**, U. G. K. Wegst. **'Excellent mechanical and electrical properties of anisotropic freeze-cast native and carbonized bacterial cellulose-alginate foams.'** ***Advanced Functional Materials***, 2022, 32(1), 2105635 (with WSU affiliation, research article, **IF: 19.92**)

- ❖ Featured in WSU Insider & High Impact Factor:

[18] G. Haghiashtiani⁺(Co-First), **K. Qiu⁺(Co-First)**, J. D. Zhingre Sanchez, Z. J. Fuenning, P. Nair, S. E. Ahlberg, P. A. Iaizzo, M. C. McAlpine. **'3D printed patient-specific aortic root models with internal sensors for minimally invasive applications.'** ***Science Advances***, 2020, 6(35), eabb4641 (Published when in WSU, **IF: 14.14**)

- ❖ Featured in WSU Insider, Medical News, MedicalXpress, Science Daily, and numerous other news outlets

[17] M. E. Kupfer[+], W.-H. Lin[+], V. Ravikumar, **K. Qiu**, L. Wang, L. Gao, M. Lenz, D. B. Bhuiyan, J. Ai, R. R. Mahutga, D. Townsend, J. Zhang, M. C. McAlpine, E. G. Tolkacheva, B. M. Ogle. **'*In situ* expansion, differentiation and electromechanical coupling of human cardiac muscle in a 3D bioprinted, chambered organoid.'** ***Circulation Research***, 2020, 127(2), 207-224 (**IF: 23.21)**

- ❖ Selected as the Cover and the Best Manuscript Award in ***Circ. Res.***

[16] S. H. Park[+], R. Su[+], J. Jeong, S.-Z. Guo, **K. Qiu**, D. Joung, F. Meng, M. C. McAlpine. **'3D printed polymer photodetectors.'** ***Advanced Materials***, 2018, 30(40), 1803980 (**IF: 32.09)**

- ❖ Featured in Nature News, Newsweek, National Geographic, and numerous other news outlets

[15] **K. Qiu**, Z. Zhao, G. Haghiashtiani, S.-Z. Guo, M. He, R. Su, Z. Zhu, D. B. Bhuiyan, P. Murugan, F. Meng, S. H. Park, C.-C. Chu, B. M. Ogle, D. A. Saltzman, B. R. Konety, R. M. Sweet, M. C. McAlpine. **'3D printed organ models with physical properties of tissue and integrated sensors.'** ***Advanced Materials Technologies***, 2018, 3(3), 1700235 (**IF: 8.86)**

- ❖ Selected as a Best of 2018 article and the Inside Cover in ***Adv. Mater. Technol.***
- ❖ Featured in NIH News, Science Daily, Materials Today, Fox News, and numerous other news outlets

[14] **K. Qiu**, G. Haghiashtiani, M. C. McAlpine. **'3D printed organ models for surgical applications.'** ***Annual Review of Analytical Chemistry***, 2018, 11, 287-306 (**IF: 12.40)**

- ❖ Featured in Annual Reviews News, Knowable Magazine, and a few other news outlets

[13] S.-Z. Guo, **K. Qiu**, F. Meng, S. H. Park, M. C. McAlpine. **'3D printed stretchable tactile sensors.'** ***Advanced Materials***, 2017, 29(27), 1701218 (**IF: 32.09)**

- Featured in NIH News, Advanced Science News, Materials Today, and numerous other news outlets

[12] **K. Qiu**, A. N. Netravali. **'In situ produced bacterial cellulose nanofiber-based hybrids for nanocomposites.'** ***Fibers***, 2017, 5(3), 31

- Selected as Cover in ***Fibers*** 5(3)

[11] **K. Qiu**, A. N. Netravali. **'Polyvinyl alcohol based biodegradable polymer nanocomposites.'** Chapter 13 In: Biodegradable Polymers, Vol. 1: Advancement in Biodegradation Study and Applications, ***Nova Science Publishers, Inc.***, New York, 2015, pp. 325-379

[10] **K. Qiu**, A. N. Netravali. **'A review of fabrication and applications of bacterial cellulose based nanocomposites.'** ***Polymer Reviews***, 2014, 54(4), 598-626 (**IF: 14.54)**

[9] **K. Qiu**, A. N. Netravali. **'"Green" composites based on bacterial cellulose produced using novel low cost carbon source and soy protein resin.'** Chapter 11 In: Recent Advances in Adhesion Science and Technology in Honor of Dr. Kash Mittal, ***CRC Press***, Boca Raton, FL, 2014, pp. 193-208

[8] **K. Qiu,** A. N. Netravali. **'A composting study of membrane-like polyvinyl alcohol based resins and nanocomposites.'** ***Journal of Polymers and the Environment***, 2013, 21(3), 658-674 (**IF: 4.93)**

[7] **K. Qiu,** A. N. Netravali. **'Halloysite nanotubes reinforced biodegradable nanocomposites using noncrosslinked and malonic acid crosslinked polyvinyl alcohol.'** ***Polymer Composites***, 2013, 34(5), 799-809 (**IF: 3.53)**

[6] **K. Qiu**, A. N. Netravali. **'Fabrication and characterization of biodegradable composites based on microfibrillated cellulose and polyvinyl alcohol.'** ***Composites Science and Technology***, 2012, 72(13), 1588-1594 (**IF: 9.88)**

[5] **K. Qiu**, A. N. Netravali. **'Bacterial cellulose-based membrane-like biodegradable composites using cross-linked and noncross-linked polyvinyl alcohol.'** ***Journal of Materials Science***, 2012, 47(16), 6066-6075 (**IF: 4.68)**

[4] F. Hong, **K. Qiu**. **'An alternative carbon source from konjac powder for enhancing production of bacterial cellulose in static cultures by a model strain *Acetobacter aceti subsp. xylinus* ATCC 23770.'** ***Carbohydrate Polymers***, 2008, 72(3), 545-549 (**IF: 10.72)**

[3] **K. Qiu**, F. Hong. **'Mutation of *Acetobacter xylinum* for high-yield production of bacterial cellulose.'** ***Journal of Donghua University***, 2008, 34(2), 181-185

[2] F. Hong, **K. Qiu**, Y. Tan, Q. Chen. **'Production and characterization of bacterial cellulose membranes in static cultivations.'** ***Proceedings of the 2007 International Conference on Advanced Fiber and Polymer Materials***, Shanghai, China, Oct. 15-17, 2007, Vol. 2: 709-711

[1] **K. Qiu**, F. Hong. **'Development of an alternate carbon source from konjac powder for high-yield production of bacterial cellulose.'** ***Proceedings of 2007 International Forum on Biomedical Textile Materials***, Shanghai, China, May 30 -June 2, 2007, pp 235-240

PATENTS, INVESTION DISCLOSURES AND PROVISIONAL PATENTS

[7] K. Qiu, D. A. Du. (Washington State University) **'3D-printed hollow microneedle-based electrochemical sensor for real-time and wireless glucose monitoring.' ID: Disclosure-26-00001**, 2025 (A provisional patent was filed in 2025)

[6] **K. Qiu**, J. R. Doppa (Washington State University) **'Machine Learning Enabled Design and Optimization for 3D-Printing of High-Fidelity Presurgical Organ Models.' ID: Discloursure-24-00063** (A provisional patent was filed in 2024)

[5] **K. Qiu**, D. A. Du. (Washington State University) '**3D-printed wearable flexible biosensors with microfluidic channels and single-atom catalyst.' ID: Disclosure-23-00003**, 2022 (A provisional patent was filed in 2024)

[4] M. C. McAlpine, **K. Qiu**, G. Haghiashtiani, R. M. Sweet (University of Minnesota). **'3D printed organ model with integrated electronic device.'** ***US 11741854 B2***, 2023

[3] A. N. Netravali, **K. Qiu** (Cornell University). **'Bacterial cellulose based 'green' composites.'** ***US 9499686 B2***, 2016

[2] U. G. K. Wegst, D. Herron, M. Kretschmar, S. Bauer, **K. Qiu** (Dartmouth College). **'Material and method of manufacture of electrodes and porous filters formed of ice-templated graphene-oxide and carbon nanotube composite, and applications thereof.'** ***WO 2015109272 A1***, 2015

[1] F. Hong, **K. Qiu**. (Donghua University). **'Preparation of a carbon source from konjac flour for producing bacterial cellulose.'** ***CN 100595271 C***, 2010

FUNDED GRANTS & PENDING PROPOSALS & OTHER EFFORTS

Pending Proposals

[17] NIH NIBIB R21 Trailblazer (**PI: Kaiyan Qiu**, Co-I: Narasimha Boddeti) *Submitted in Oct. 2025*

- 3D-Printed Dynamic Heart Phantom Using Liquid Crystal Elastomers with Dynamic Covalent Bonds.
- Request $558,552 (My Part is over $300,000)

[16] NIH NIBIB SBIR (**WSU PI: Kaiyan Qiu,** with DL ADV-Tech, LLC). *Submitted in Sept. 2025*

- Monitoring of Alzheimer's Disease Associated Biomarkers Using Single-Atom Catalyst-Enhanced 3D-Printed Electrochemical Biosensors.
- Request $305,779 (My part is $90,000)

[15] NSF CCSS Career (**PI: Kaiyan Qiu**) *Submitted in July 2025*

- CAREER: Bionic Skin System for Restoration of Multimodal Haptic Sensation in Amputees
- Request $662,936

Awarded and Participated Grants at WSU

[14] WSU Commercialization Special Project Fund (**PI: Kaiyan Qiu**) *Funded in Dec. 2024*

- 3D-printed wearable biosensors and electronics.

[13] NSF-GRFP for Full 3 Year PhD Financial Support *Funded in May 2024*

- 3D-printed biomimetic sharkskin for drug reduction (**Sonja S. Sparks, Mentored by Kaiyan Qiu**)

[12] NSF NRT-LEAD (PI: Prashanta Dutta), **Core Participant Role: Kaiyan Qiu, Underwater Thrust (Co-Lead)** *Funded August 2023*

- ❖ Convergent next-generation robotics training: leadership, entrepreneurship, and adaptive design (NRT-LEAD) amid a Changing World of Work
- ❖ Two of my PhD students will receive one-year RA support as an NRT-trainee.

[11] WSU Commercialization Special Fund (**PI: Kaiyan Qiu**; CO-I: Annie Du) *Funded in Nov. 2022*
- ❖ 3D-printed wearable biosensors.

[10] WSU New Faculty Seed Grant 2022 (**PI: Kaiyan Qiu**) *Funded in May 2022*
- ❖ 3D-Printed biomimetic sharkskin for underwater applications & Featured in WSU Insider

[9] WSU Industrial Engagement (**PI: Kaiyan Qiu**; CO-PI: Yuehe Lin) *Funded in May 2022*
- ❖ 3D-printed wearable flexible biosensors

[8] Working with Industry 101 (**PI: Kaiyan Qiu**) *Funded in May 2022*

[7] NIH NIAID R21AI69225 (PI: Wen-ji Dong; **CO-I: Kaiyan Qiu**; CO-I: Cornelius Ivory) *Funded in Feb. 2022*
- ❖ Paper-based nucleic acid amplification test for rapid diagnosis of hepatitis C viral (HCV) infection

[6] Cougar Cage (**PI: Kaiyan Qiu**) *Funded in July 2021*
- ❖ 3D-printed cardiac models & Featured in WSU Insider

[5] JCATI (PI: Wen-ji Dong; **CO-PI: Kaiyan Qiu**; Industry Partner: Altek) *Funded in Fall 2020*
- ❖ Mask-based sensor for real time monitoring SARS-CoV-2 infection

Proposal Experience before WSU

[4] Contributed partial content as a postdoc for NIH NIBIB progress report *2015-2019*
- ❖ 3D printed nano-bionic organs (NIH NIBIB, 2015-2020, Award No.: 1DP2EB020537)

[3] Contributed partial content as a postdoc for NIH NHLBI progress report *2018*
- ❖ Extracellular matrix regulation of differentiation via modulation of ILK: application to 3D bioprinting of cardiac tissue. (NIH NHLBI, 2017-2021, Award No.: R01HL137204)

[2] Contributed partial content as a postdoc for a proposal for 3D printed aortic root models *2017*
- ❖ Granted, $50,000 from Medtronic, Inc.; $50, 000 from MnDRIVE RSAM Initiative (2018-2019)

[1] Wrote a full proposal for Ph.D. Research Support, Cornell University *2008*
- ❖ Investigation of bacterial cellulose (BC) based 'green' composites and development of inexpensive carbon sources for BC production. As Principle Investigator, Granted, $2,500, 2009-2011)

ORGANIZED/INVITED TALKS, GUEST LECTURES & CONFERENCES

[38] K. Qiu. **3D-printed biomedical devices for health monitoring, haptic sensing and surgical applications**. Invited Talk, in Biomechanics Seminar at University of Washington, Seattle, WA, January 2026 (Scheduled)

[37] K. Qiu. **3D-printed biomedical devices for health monitoring, haptic sensing and surgical applications**. Invited Talk, in the Veterans Affairs (VA) Center for Limb Loss and Mobility, Seattle, WA, January 2026 (Scheduled)

[36] K. Qiu. **3D-printed biomedical devices for health monitoring, haptic sensing and surgical applications**. Invited Talk, in University of British Columbia, Vancouver, BC, Canada, November 2025

[35] K. Qiu. **3D-printed wearable biosensors for health monitoring.** Oral Presentation in **SES 2025,** Atlanta, GA, October 2025 **(Served as an organizer for a mini symposium about soft electronics)**

[34] K. Qiu. '**3D-printed wearable biosensors and electronics.'** Oral Presentations for ***two Symposiums SB02 and SB03 in MRS Spring 2025***, Seattle, WA, April 2025 (**Served as a Session Chair in Symposium SB02**)
- ❖ My PhD student's poster was nominated for MRS Best Poster Award.

[33] K. Qiu. '**3D-printed wearable sensors and artificial organs.'** Poster Presentation for ***GRC 2024 3D Printing Soft Materials***, Bryant University, Rohde Island, August 2024

[32] K. Qiu. **'3D-printed biomedical and biomimetic devices.'** Oral Talk for ***ACS NORM 2024***, Pullman, WA, June 24, 2024

[31] K. Qiu (As an **Applicant** and **Organizer** in 2023 for the workshop with Jana Doppa, Aryan Deshwal, Syrine Belakaria, and Yolanda Gil). '**AI for Materials and Manufacturing**.' ***3rd Annual AAAI Workshop on AI to Accelerate Science and Engineering***, Vancouver, BC, Canada, February 2024.

[30] K. Qiu. **'3D-printed biomedical and biomimetic devices.'** Oral Talk for ***ASME International Mechanical Engineering Congress and Exposition***, New Orleans, LA, October 29-November 2, 2023

[29] K. Qiu. **'3D-printed biomedical and biomimetic devices.'** Invited Distinguished Research Seminar for ***Hong Kong Polytechnic University***, September 28, 2023

[28] K. Qiu. **'3D printed functional devices for health monitoring.'** Guest Lecture for ***Biomedical Engineering, Washington State University***, Nov. 28, 2022

[27] K. Qiu. **'3D printed functional devices for healthcare and engineering applications.'** Poster Presentation, for ***Gordon Research Conference: Additive Manufacturing of Soft Materials***, Ventura, CA, August 7-12, 2022

[26]. **'3D printed artificial organs and smart electronics for biomedical applications.'** Invited Talk for ***NextFlex***, June 2022

[25]. **'3D printed artificial organs and smart electronics for biomedical and healthcare applications.'** Oral Invited Talk for ***ACS Spring 2022***, San Diego, CA, March 22, 2022

[24]. **'3D printed artificial organs and smart electronics for biomedical and healthcare applications.'** Guest Lecture for ***Bioengineering, Washington State University***, February 18, 2022

[23] **'3D printed artificial organs and smart electronics for biomedical and healthcare applications.'** Oral Invited Talk for ***Mechanical Engineering Program, Washington State University Tri-Cities***, January 28, 2022

[22] **'3D printed presurgical organ models for surgical applications.'** Guest Lecture for ***University of Nebraska Lincoln***, March 25, 2021

[21] **'3D printed artificial organs and smart electronics for biomedical and healthcare applications.'** Guest Lecture for ***Bioengineering, Washington State University***, March 5, 2021

[20] **'3D printed artificial organs and smart electronics for biomedical and healthcare applications.'** Guest Lecture for ***Chemical Engineering and Bioengineering, Washington State University***, November 9, 2020

[19] **'3D printed artificial organs.'** Guest Lecture for ***MSE 110, Washington State University***, October 8, 2020

[18] **'3D printed smart electronics.'** Guest Lecture for ***MSE 110, Washington State University***, October 1, 2020

[17] **'3D printed artificial organs and smart electronics for biomedical and healthcare applications.'** Oral Invited Talk for ***MME, Washington State University***, September 10, 2020

[16] **'3D printed artificial organs and smart electronics for biomedical and healthcare applications.'** Oral Invited Talk for ***Washington State University***, April 23, 2020

[15] **'3D printed artificial organs and smart electronics for biomedical and healthcare applications.'** Oral Invited Talk for ***University of Tennessee***, March 31 & April 1, 2020

[14] **'3D printed artificial organs and smart electronics for biomedical and healthcare applications.'** Oral Invited Talk for ***Florida Institute of Technology***, March 27, 2020

[13] **'3D printed artificial organs and smart electronics for biomedical and healthcare applications.'** Oral Invited Talk in ***University of Georgia***, Athens, GA, January 23, 2020

[12] **'3D printed organ models and flexible electronics for biomedical applications.'** Oral Invited Talk in ***Mississippi State University***, Starkville, MS, January 8, 2020

[11] **'3D printed models of the aortic valve.'** Oral Invited Talk in ***2019 Earl E. Bakken Surgical Device Symposium: Update on Surgical Aortic Disease***, Minneapolis, MN, November 8, 2019

[10] **'3D printed organ models with physical properties of tissue and integrated sensors.'** Oral Invited Talk in ***Micro- and Nanotechnology Sensors, Systems, and Applications XI*** in ***SPIE Defense + Commercial Sensing***, Baltimore, MD, April 14, 2019

- ❖ Proceedings Volumes 10982, https://doi.org/10.1117/12.2518370

[9] **'3D printed organ models with integrated electronics.'** Oral Invited Talk in ***University of Georgia***, Athens, GA, February 21, 2019

[8] **K. Qiu**, M. C. McAlpine. **'3D printed organ models with physical properties of tissue and integrated sensors.'** Oral Presentation & Poster Presentation (03/20/18 & 03/19/18) in ***255th ACS National Meeting & Exposition***, New Orleans, LA, 2018 (Selected as ACS Sci-Mix Poster)

[7] **K. Qiu**, M. C. McAlpine. **'3D printed tissue-simulated organ model using designed synthesized polymeric inks and human organ data.'** Oral Presentation (08/23/16) in ***252th ACS National Meeting & Exposition***, Philadelphia, PA, 2016

[6] **K. Qiu**, M. C. McAlpine. **'3D printed bionic prostate.'** Oral Presentation (04/01/16) in ***2016 Spring MRS Meeting & Exhibit***, Phoenix, AZ, 2016

[5] **K. Qiu**, M. C. McAlpine, R. M. Sweet. **'Patient specific 3D printed prostate with tissue and anatomic fidelity.'** Poster Presentation in ***Engineering & Urology Society 31th Annual Meeting***, San Diego, CA, 2016

[4] **K. Qiu**, U. G. K. Wegst. **'The structure and performance of freeze-cast bacterial cellulose aerogels.'** Poster Presentation in ***2013 MRS Fall Meeting & Exhibit***, Boston, MA, 2013

[3] **K. Qiu**, A. N. Netravali. **'Biodegradable polymer nanocomposites using polyvinyl alcohol and nanomaterials.'** Poster Presentation in ***2012 Fiber Society Fall Meeting***, Boston, MA, 2012

[2] **K. Qiu**, A. N. Netravali. **"Green' composites using soy protein resin and novel low cost carbon source based bacterial cellulose.'** Poster Presentation in for ***2011 Fiber Society Fall Meeting***, Charleston, SC, 2011

[1] F. Hong, **K. Qiu**. **'Mutation of Acetobacter xylinum for high-yield production of bacterial cellulose.'** Presentation in ***234th ACS National Meeting & Exposition***, Boston, MA, August 19-23, 2007

STUDENTS MENTORING

Student Mentoring at WSU and in Washington (WA)

- ➢ WSU MSE PhD student (Chuchu Chen) *Fall 2021-May 2025*
- ➢ WSU MSE PhD student (Yonghao Fu) *Summer 2023-Present*
- ➢ WSU ME PhD student (Hongyi Shen) *Fall 2024-Present*
- ➢ WSU MSE PhD student (Alejandro G. Obando) *Fall 2023-Present*
- ➢ WSU ME PhD student (Sonja Sargent Sparks, undergraduate researcher in group since 2021) *Fall 2023-Present*
- ➢ University of Maryland Undergraduate (Eric Chen) *Summer 2023-Present*
- ➢ WSU ME Undergraduate (Jose L. Policarpio) *Spring 2024-Present*
- ➢ WSU ME Undergraduate (Myles M. McGovern) *Spring 2024-Present*
- ➢ WSU ME Undergraduate (Yushen Zhang) *August 2024-Present*
- ➢ WSU ME Undergraduate (Nikolai K. Bogdev) *August 2024-Present*
- ➢ WSU ME undergraduate (Matthew M. Demorse) *Spring 2023*
- ➢ WSU ME PhD student (Jin Miao, health issue since 2022) *Fall 2021-Spring 2023*
- ➢ WSU ME PhD student (Shihab Ahmed, co-advised with Nestor Preze) *Fall 2022*
- ➢ Summer students for supportive work (Ambrose Wang & Xinlan Wen) *Summer 2022*
- ➢ WSU ME undergraduate (Jasper Allan Ellingson) *Spring 2022*
- ➢ WSU MSE 425 undergraduates (Petra A. Jonson, co-advised with Dr. Nara Boddeti) *Spring 2022*
- ➢ Tesla STEM High School student, Redmond, WA (Rhea Kuppa, 11th grade) *Fall 2021*
  Topic: "3D Printing Bio-Inspired Heart Valves to Increase Efficiency of Pre-operative Care"
  The first place in Central Sound Regional Research and Engineering Fair (CSRSEF)
  The first place in Washington State Science and Engineering Fair (WSSEF).
- ➢ WSU ME undergraduate (George Sam Eralil) *Spring 2021*
- ➢ WSU MSE 425 undergraduates (1. Hilal Al Harmali; 2. Zhuocheng Huang; 3. Badar Al Hosni) *Fall 2020*

Serving as a Committee Member for Graduate Students at WSU

- Nathaniel W. Zuckschwerdt *October 2024-Present*
- Bryson N. White, ME MS/PhD *January 2024-Present*
- Cassandra L. Orozco, ME MS *October 2023-July 2024*
- Rachel Kennedy*, ChemE MS* *July 2023-Present*
- Kimberlee Hughes, ME PhD *December 2022-Present*
- Zihui Zhao, IIDP PhD *December 2020-Present*
- Luiz Longo, ME MS *September 2021-April 2022*
- Zhaoyuan Lyu, ME PhD *October 2021-April 2022*
- Shahriar Safaee, MSE PhD *October 2020-August 2021*

Student Mentoring before WSU

- ME PhD student (UMN Total 1) *2018-2020*
- MSE, ME, ChemE undergraduates (Total 7) *2007-2018*
  - A. Shortell, A. Wolford, J. Burno (Cornell);
  - D. Jutras (REU at Cornell, from Mount Holyoke College);
  - M. Silva, R. Tu (Dartmouth);
  - K. Levac (UMN)
- High school students (Total 3) *2017-2018*
  - A. Anderson, S. Ma, and N. Tank (Breck School, MN)
  - All three high school students received a number of awards based on their work in the lab.

TEACHING

Teaching at WSU

- Course Instructor for ME 312 Manufacturing Engineering *Fall, 2025*
- Course Instructor for ME 216 Integrated CAD Design *Spring, 2025*
- Course Instructor for ME 312 Manufacturing Engineering and ME 216 Integrated CAD Design *Fall, 2024*
- Course Instructor for ME 312 Manufacturing Engineering *Spring, 2024*
- Course Instructor for ME 216 Integrated CAD Design *Fall, 2023*
- Course Instructor for ME 579/MSE 503 3D Printing Biomedical Devices (newly developed) *Spring, 2023*
- Course Instructor for ME 216 Integrated CAD Design *Fall, 2022*
- Course Instructor for ME 216 Integrated CAD Design *Spring, 2022*
- Course Instructor for ME 216 Integrated CAD Design *Fall, 2021*
- Course Instructor for ME 312 Manufacturing Engineering/ME 310 Manufacturing Processes/ME 311 Manufacturing Processes Laboratories & ME 598 Seminar *Spring, 2021*
- Course Instructor for ME 312 Manufacturing Engineering/ME 311 Manufacturing Processes Laboratories *Fall, 2020*

Teaching before WSU

- A Lecture on Manufactured Regenerated Polymer Fibers for TXMI 3500 (Textiles) at University of Georgia *February 2019*
- A Lecture on Extrusion-based Multi-material 3D Printing for high school juniors with NIH Continuing Umbrella of Research Experience (CURE) Internship, University of Minnesota *Summer, 2018*
- A Lecture on 3D Printing Organ Models in ME 8390 (Introduction to Nanotechnology), University of Minnesota *Fall, 2016*
- TA lectures for FSAD 4660 (Textiles, Apparel, and Innovation), Cornell University *Fall, 2011*
- Lectures on Applying Clickers as an Interactive and Assessment Tool in the Chemistry Class in TA summer institute, Cornell University (a lecture was featured in Cornell Center for Teaching Innovation) *Summer, 2009*
- TA lectures for FSAD 4320 (Product Quality Assessment), Cornell University *Spring, 2009*

WSU MME COMMITTEE SERVICE

- MME Graduate Studies Committee *Fall 2024-Present*

- MME Development Committee *Fall 2022-Present*
- MME Research Committee *Fall 2022-Present*
- MME Student Success Committee *Fall 2022-Present*
- MME Undergraduate Studies Committee *Fall 2021-Spring 2022*

FACULTY DEVELOPMENT TRAINING

- Work with Industry 101 *May 17, 19, 24, 26, 2022*
- Delta Junior Faculty Institute *April 6-8, 2022*
- NETI-3E Online *June 2-3, 2021*

INUDSTRIAL AND OTHER EDUCATIONAL EXPERIENCE

- Project Leader in UMN side for Research Collaborations with Medtronic, Inc. *2018-2020*
- Outreach Chair at Translator and Interpreter Program, Cornell University *2011-2012*
- Internship at Shanghai Coastline Co., LTD., Shanghai, China *Spring, 2007*
- Internship at BASF(China), Shanghai, China *Summer, 2004*
- Undergraduate Secondary Major Diploma (July 2004) in Business Administration at Shanghai Jiaotong University *Feb. 2002-July 2004*

AWARDS & HONORS

- Our 3D-printed calorimetric biosensor was selected by Editor in Chief as one of the favorite paper in ACS Sensors for the first 10 years *2025*
- MRS Spring 2025 Best Poster Nominee for our 3D-printed hollow microneedle-based biosensor work *2025*
- Nominated and selected for attending Delta Junior Faculty Institute *2022*
- The Professorship has been named as Berry Family Assistant Professor of Mechanical Engineering *2021*
- The '3D printed organ models' paper has been selected as a Best of 2018 article by *Adv. Mater. Technol.* *2019*
- Approval of US Permanent Residency through the First Preference Extraordinary Ability EB1A *2015*
- Placed 3rd in National Textile Center (NTC) Forum Student Competition, Charleston, SC *2011*
- Placed 1st in FSAD student paper competition, Cornell University *2011*
- Liu memorial award scholarship, Cornell University *2010*
- Teaching & Research assistant scholarship, Cornell University *2007-2012*
- College graduate excellence award, Donghua University *2004*
- Several scholarships from Invista (Dupont), Coasts and Sang Ma Trust Fund *2000-2007*

PROFESSIONAL AFFILIATIONS

- Secretary of Electronic Materials Technical Committee in IMECE
- Member of American Chemical Society
- Member of American Society of Mechanical Engineering
- Member of Material Research Society
- Member of Fiber Society

SEMINAR ORGANIZER SERVICE

- Serve as a Seminar Organizer for ME598 at WSU to invite speakers and host seminars *Spring 2021*
  - The outstanding speakers include John Rogers (Northwestern U), Michael McAlpine (U of Minnesota), Zhenan Bao (Stanford), Robert Shepherd (Cornell), Anil Netravali (Cornell), and Girish Krishnan (UIUC), and Tamas Havar (Blue Origin).

GRANT & JOURNAL REVIEWER SERVICE

- ***Grants***
  - Serve as a Panelist Reviewer for NSF ECCS/CCSS Engineering Research Initiative (ERI)
  - Serve as an External Reviewer for Research Grant Council of Hong Kong
  - Serve as a Reviewer for UK Research and Innovation Funding Services

- ❖ Serve as an External Reviewer for CATALYST Funding Program, Rowan University
- ❖ Served as a Reviewer for grants from ACS Petroleum Research Fund

➢ ***Journals***

- ❖ Proceedings of National Academy of Sciences of the United States of America (PNAS);
- ❖ Advanced Materials
- ❖ Advanced Functional Materials
- ❖ Advanced Materials Technologies
- ❖ Scientific Reports;
- ❖ Mechatronics;
- ❖ Materials & Design;
- ❖ Sensors;
- ❖ MRS Communications;
- ❖ Trends in Pharmacological Sciences;
- ❖ ACS Macro Letters;
- ❖ ACS Applied Materials & Interfaces;
- ❖ ACS Sustainable Chemistry & Engineering;
- ❖ ACS Books;
- ❖ Journal of Materials Chemistry A;
- ❖ Journal of Materials Chemistry B;
- ❖ Composites Science and Technology;
- ❖ Carbohydrate Polymers;
- ❖ Cellulose;
- ❖ The Journal of Physical Chemistry;
- ❖ Composite Part A;
- ❖ Composite Part B;
- ❖ Composite Interfaces;
- ❖ Polymer Chemistry;
- ❖ RSC Advances;
- ❖ Analyst;
- ❖ Scanning;
- ❖ Journal of the Brazilian Chemical Society;
- ❖ ASME Journal of Engineering and Science in Medical Diagnostics and Therapy;
- ❖ International Journal of Engineering, Science and Technology;
- ❖ Journal of Renewable Materials;
- ❖ International Journal of Biological Macromolecules;
- ❖ Food Biophysics;
- ❖ Food & Function;
- ❖ Food Hydrocolloids
- ❖ Advanced Fiber Materials