**CURRICULUM VITAE**

**CHENGPENG CHEN (born 02/1988)**

**EDUCATION**

 Ph.D. 2015 Michigan State University, Chemistry (analytical)

 B.S. 2011 Ocean University of China, Chemistry

**WORK Experience in Higher Education**

 2022-present, Member of Stem Cell Center, University of Maryland, School of Medicine

2018-present, University of Maryland Baltimore County, Assistant Professor, Department of

 Chemistry and Biochemistry

 2015-2018, Saint Louis University, Teaching/Research Postdoc Fellow, Department of Chemistry

**Research Interest**

 **Organs-on-a-chip to accelerate pre-clinical studies**

Bioinspired devices, microfluidics, biomaterials, 3D-printing, 3D cell culture, stem cells

**Metabolomic bioanalytical chemistry**

 LC-MS based assays; bioassay development

**Biophysical roles of extracellular matrices**

 The mechanistic interactions between extracellular matrices and cell metabolome

 **Wearable biochemical sensors**

 New sensor technologies and platforms for continuous health monitoring from sweat

**Honors Received**

2022-present, Review Editor, the Editorial Board of Frontiers in Bioengineering and Biotechnology

2020, Emerging Young Investigator, the Journal of Materials Chemistry B

2018-present, Early Career Editorial Board Fellow, ACS Biomaterials Science&Engineering

 2018, UMBC Summer Research Faculty Fellowship

 2017, Saint Louis University Research Award

 2014, Michigan State University Graduate Student Travel Award

 2014, Tony B. Award for research, Society for Laboratory Automation and Screening

**Honors received by advisees/trainees in lab since 2018**

2022, John A. Terrell (Ph.D. student), Chemical and Biological Interface (CBI) program fellowship

2021, Giraso Keza Monia Kabandana (Ph.D. candidate), American Association of University Women (AAUW) International Fellowship

2020-2021, Adam Ratajczak (undergraduate researcher in the lab), 1) Undergraduate Research Award ($1000 for research), 2) ACS Analytical Chemistry Award, and 3) Faculty Award for Excellence in Biochemistry.

2020, Giraso Keza Monia Kabandana (Ph.D. candidate), 2nd place winner in Graduate Poster Presentation at MAPRS

2019, Giraso Keza Monia Kabandana (Ph.D. candidate), Outstanding Research Award, UMBC

**PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS**

**Publications after 2018 (independence)**

1. Tao Zhang, Adam Michael Ratajczak (*undergraduate author*), Hui Chen, John A. Terrell1, and Chengpeng Chen\*, A step forward for smart clothes—fabric-based microfluidic sensors for wearable health monitoring. **ACS Sensors**. **2022**, 7, 12, 3857–3866. *IF=9.6*
2. Giraso Keza Monia Kabandana, Tao Zhang, and Chengpeng Chen\*, Emerging 3D printing technologies and methodologies for microfluidic development. **Analytical Methods**, **2022**, 14, 2885-2906. *INVITED CONTRIBUTION*. *IF=3.5*
3. Tao Zhang, Giraso Keza Monia Kabandana, Adam Ratajczak (*undergraduate author*), and Chengpeng Chen\*, A quantitative sensing system based on a 3D-printed ion-selective electrode for rapid and sensitive detection of bacteria in biological fluid. **Talanta**, **2022**, 238, 123040. *IF=6.6*
4. Tianjiao Huang, John A. Terrell, Jay H. Chung, and Chengpeng Chen\*, Electrospun microfibers modulate intracellular amino acids in liver cells via integrin β1, **Bioengineering**, **2021**, 8 (7), 88. (FRONT COVER). *IF=5.0*
5. Giraso Keza Monia Kabandana, Adam M. Ratajczak*(undergraduate author)*, and Chengpeng Chen\*, Making quantitative biomicrofluidics from microbore tubing and 3D-printed adapters, **Biomicrofluidics**, **2021**, 15 (3), 034107. *IF=3.3*
6. Curtis G. Jones, Tianjiao Huang, Jay H. Chung, and Chengpeng Chen\*, 3D-printed, modular, and parallelized microfluidic system with customizable scaffold integration to investigate the roles of basement membrane topography on endothelial cells, **ACS Biomaterials Science & Engineering**, **2021**, 7, 4, 1600-1607 (FRONT COVER). *IF=5.4*
7. Curtis G. Jones and Chengpeng Chen\*, An arduino-based sensor to measure transendothelial electrical resistance, **Sensors and Actuators A**, **2020**, 314, 112216. *IF=4.3*
8. Tianjiao Huang, Curtis G. Jones, Jay H. Chung, and Chengpeng Chen\*, Microfibrous extracellular matrix changes the liver hepatocyte energy metabolism via integrins, **ACS Biomaterials Science & Engineering**, **2020**, 6, 10, 5849-5856. *IF=5.4*
9. Giraso Keza Monia Kabandana, Curtis G. Jones, Sarah K. Sharifi*(undergraduate author)*, and Chengpeng Chen\*, 3D-printed microfluidic devices for enhanced online sampling and direct optical measurements, **ACS sensors**, **2020**, 5, 7, 2044-2051. (FRONT COVER). *IF=9.6*
10. John A. Terrell, Curtis G. Jones, Giraso Keza Monia Kabandana, and Chengpeng Chen\*, From cells-on-a-chip to organs-on-a-chip: scaffolding materials for 3D cell culture in microfluidics, **Journal of Materials Chemistry B**, **2020**, 8 (31), 6667-6685. *INVITED CONTRIBUTION*. *IF=7.6*

**Publications before joining UMBC**

1. Yueli Liu, Laura E. Hesse, Morgan K. Geiger, Kurt R. Zinn, Timothy J. McMahon\*, Chengpeng Chen\*, and Dana M. Spence\*, A 3D-printed transfusion platform reveals beneficial effects of normoglycemic erythrocyte storage solutions and a novel rejuvenating solution. Lab on a Chip, 2022, 22, 1310-1320. *IF=7.5*
2. Chengpeng Chen, Alexandra D. Townsend, Elizabeth A. Hayter, Hanna M. Birk (*undergraduate author*), Scott A. Sell and R. Scott Martin, Insert-based microfluidics for 3D cell culture with analysis, Analytical and bioanalytical chemistry, 2018, 410 (12), 3025-3035.
3. Akash S. Munshi, Chengpeng Chen, Alexandra D. Townsend and R. Scott Martin, Use of 3D printing and modular microfluidics to integrate cell culture, injections and electrochemical analysis, Analytical Methods, 2018, 10 (27), 3364-3374.
4. Chengpeng Chen, Alexandra. D. Townsend, Scott. A. Sell and R. Scott Martin, [Microchip-based 3D-cell culture using polymer nanofibers generated by solution blow spinning](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=FppSA-0AAAAJ&sortby=pubdate&citation_for_view=FppSA-0AAAAJ:vDijr-p_gm4C), Analytical Methods, 2017, 9, 3274-3283. (FRONT COVER)
5. Kevin P. Feltz, Emily A. Growney Kalaf, Chengpeng Chen, R. Scott Martin and Scott A. Sell. A review of electrospinning manipulation techniques to direct fiber deposition and maximize pore size, Electrospinning, 2017, 2, 16-31.
6. Ruipeng Mu , Chengpeng Chen , Yimeng Wang and Dana M. Spence, A quantitative, in vitro appraisal of experimental low-glucose storage solutions used for blood banking, Analytical Methods, 2016, 8, 6856-6864.
7. Chengpeng Chen, Benjamin T. Mehl, Akash S. Munshi, Alexandra D. Townsend, Dana M. Spence and R. Scott Martin, 3D-printed microfluidic devices: fabrication, advantages and limitations—a mini review, Analytical Methods, 2016, 8, 6005-6012.
8. Chengpeng Chen,  Benjamin T. Mehl, Scott A. Sell and R. Scott Martin, Use of electrospinning and dynamic air focusing to create three-dimensional cell culture scaffolds in microfluidic devices, Analyst, 2016, 141, 5311-5320.
9. Yueli Liu, Chengpeng Chen,  Suzanne Summers,  Wathsala Medawala  and  Dana M. Spence, C-peptide and zinc delivery to erythrocytes requires the presence of albumin: implications in diabetes explored with a 3D-printed fluidic device, Integrative Biology, 2015, 7(5), 534-543. (BACK COVER)
10. Chengpeng Chen, Yimeng Wang , Sarah Y. Lockwood and Dana M. Spence, 3D-printed fluidic devices enable quantitative evaluation of blood components in modified storage solutions for use in transfusion medicine, Analyst, 2014, 139, 3219-3226. (FRONT COVER)
11. Bethany C. Gross, Jayda L. Erkal, Sarah Y. Lockwood, Chengpeng Chen, and Dana M. Spence, Evaluation of 3D Printing and Its Potential Impact on Biotechnology and the Chemical Sciences, Analytical Chemistry, 2014, 86 (7), 3240–3253.

**Invited presentations and seminars after joining UMBC**

1. 04/2023, Invited seminar, Department of Chemistry, University of North Carolina Chapel Hill, NC
2. 03/2023, invited symposium presenter, Pittcon, Philadelphia, PA
3. 03/2022, presentation invited, Analytical Methods for the Investigation of Inflammation and Oxidative Stress (Lunte), Pittcon, Atlanta, GA
4. 04/2022, Invited seminar, Department of Chemistry, Wichita State University, KS

3. 02/2022, Invited seminar, Department of Chemistry, Hood College, MD

4. 09/2021, Invited seminar, Department of Chemistry, Millersville University, PA

5. 12/2020, Invited seminar, Department of Chemistry, American University, MD

6. 03/2020, Invited presentation, Pittcon, Chicago, IL

7. Multiple presentations for new graduate students since 2018

**Creative Achievements after joining UMBC**

Chengpeng Chen, Tao Zhang, Adam M. Ratajczek. A Step Forward for Smart Clothes—Fabric-based Microfluidic Sensors for Wearable Health Monitoring. Disclosed in Oct. 2022.

Chengpeng Chen, Giraso Keza Monia Kabandana, Adam M. Ratajczek. A modular and reusable toolkit to make functional microfluidic devices without fabricating microchannels. No. 626-572-PROV

**GRANTS AND AWARDS**

1. 2022-2027

R35GM146779, A physiological and translational liver model to study the metabolism-modulating roles of extracellular matrix microstructures, NIH, $1,666,565, PI (100%).

1. 2022-2024

2023-MSCRFL-6015, 3D Model and in-line Assessment of Colon based on iPS cells for Ulcerative Colitis Treatment, Maryland Stem Cell Research Fund, $350,000, PI (70%, in collaboration with CoI Erin Lavik from Dept Bioengineering at UMBC).

1. 2022-2023

Alex. Brown Center for Entrepreneurship Award, A new bacteria-killing material for direct 3D printing of self-sterilizing objects, $10,000, PI (100%).

1. 2022-2023

Maryland Technology Catalyst Fund, A clothes-based platform for wearable sensor developments, $20,000, PI (100%).

**SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION**

2021. Organized a symposium for ACS Fall Conference, “3D printing and Chemistry”

2020-2022. Organizing departmental seminars, including online seminars during the pandemic

2018-present. Member of the Graduate Recruitment Committee of the department

2018-present. Poster judges for various symposiums on campus

2018-present. Voluntary reviewer for 10+ journals in the fields of analytical chemistry and biomaterials. Examples are Analyst, Analytical Methods, Bioengineering, Scientific Reports, and RSC Advances.

2018-present. Committee chair of four Ph.D. students (two passed candidacy, two pending)

2018- present. Committee member of ten Ph.D. students in the department

2018-present. Committee member of three Ph.D. students from the School of Engineering

**teaching experiences**

Quantitative Analysis (CHEM 300)

 Instrumental Analysis (CHEM 461)

Elective for both undergraduate and graduate students: Bioanalytical Lab-on-a-chip (four modules: microfluidic basics, instrumental analysis reinforcement, microfluidic applications, data mining and processing with R programming)

**Ph.D. Trainees**

John A. Terrell, Ph.D. student, Advisor

Tao Zhang, Ph.D. candidate (exam passed 04/22), Advisor

Curtis G. Jones, Ph.D. candidate (exam passed 07/21), Advisor

Giraso Keza Monia Kabandana, Ph.D. candidate (exam passed 06/21), Advisor

Jacquelyn Cunning, Ph.D. conferred (08/19), Committee Member

Ciara Pitman, Ph.D., defended 03/22, Committee Member

Narendra Goud Pandala, Ph.D. defended 10/21 (Bioengineering), Committee Member

Haotian Wu, Ph.D. candidate, Committee Member

Ryan Grant, Ph.D. candidate, Committee Member

Amanda Belunis, Ph.D. candidate, Committee Member

Sarah Wirick, Ph.D. student, Committee Member

Naba Krishna Das, Ph.D. student, Committee Member

Patricia Boyd, Ph.D. student, Committee Member

**Undergraduate students**

 Adam Ratajczak, undergraduate researcher, 2019-present, Research Mentor

 Sahra Khan Sharifi, undergraduate researcher, 2019-present, Research Mentor

 Ahmed Al-Anesi, undergraduate student, Academic Advisor

Ben Cole, undergraduate student, Academic Advisor

Clifton Cunningham, undergraduate student, Academic Advisor

Josiah Hardy, undergraduate student, Academic Advisor

Murari Harish, undergraduate student, Academic Advisor

Benjamin Hung, undergraduate student, Academic Advisor

Zena Jang, undergraduate student, Academic Advisor

India Kelly, undergraduate student, Academic Advisor

Jiabao Liang, undergraduate student, Academic Advisor

Saja Mahdi, undergraduate student, Academic Advisor

Aliyah Remoroza, undergraduate student, Academic Advisor

Leelee Sands, undergraduate student, Academic Advisor

Selena Srirattanapirom, undergraduate student, Academic Advisor

Faith Zaruba, undergraduate student, Academic Advisor

Jiayu Zhao, undergraduate student, Academic Advisor

Mei Zheng, undergraduate student, Academic Advisor

Jenny Zou, undergraduate student, Academic Advisor

*I certify all contents are up to date (as of 11/14/2022) and accurate.*

