

# ASHLEE N. FORD VERSYPT

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## I. PERSONAL HISTORY AND PROFESSIONAL EXPERIENCE

### EDUCATION

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University of Illinois at Urbana-Champaign (UIUC), Ph.D. Chemical Engineering, Graduate Option in Computational Science & Engineering, 2012

University of Illinois at Urbana-Champaign, M.S. Chemical Engineering, 2009

University of Oklahoma (OU), B.S. Chemical Engineering, Minor in Mathematics, Honors, *summa cum laude*, 2005

### HONORS AND AWARDS

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Young Alumni Achievement Award, UIUC Department of Chemical and Biomolecular Engineering, 2022

David Himmelblau Award for Innovations in Computer-Based Chemical Engineering Education, American Institute of Chemical Engineers (AIChE) Computing and Systems Technology (CAST) Division, 2022

Gary Leach Recognition Award for the AIChE Education Division Virtual Communities of Practice, AIChE Executive Committee, 2022

Class of Influential Researchers, *Industrial & Engineering Chemistry Research*, 2021

Ernest W. Thiele Lectureship, University of Notre Dame Department of Chemical and Biomolecular Engineering, 2021

Ray W. Fahien Award, American Society for Engineering Education (ASEE) Chemical Engineering Division, 2020

National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award, 2019

Election as Computer Aids for Chemical Engineering (CACHE) Corporation Trustee, 2019

Outstanding Achievement for the Mentorship of Women, Oklahoma State University (OSU) Women's Faculty Council, 2019

Outstanding Service Award, ASEE Midwest Section, 2019

Selected among 20 "Outstanding Young Chemical Engineering Educators" to attend the Computer Aids for Chemical Engineering Conference on the Future of Cyber-Assisted Chemical Engineering Education, 2019

35 Under 35 Award, AIChE, 2017

Excellent Teacher Award, OSU College of Engineering, Architecture and Technology (CEAT), 2017

Poster Award, ASEE Chemical Engineering Summer School, 2017

2<sup>nd</sup> place technical paper, ASEE Midwest Section Conference, 2017

Outstanding Poster Presentation, New York Academy of Sciences Symposium on Chronic Kidney Disease, 2016

Outstanding Mentor Award, OSU CEAT Student Council (voted by the student body), 2015

Undergraduate Research Video Competition winner—faculty category, OSU Vice President for Research, 2015

ASEE Chemical Engineering Division Joseph J. Martin Award (for outstanding paper at the ASEE Annual Meeting in 2013), 2014

Keystone Partnership Award, Girl Scouts of Eastern Massachusetts (recognizing impact on STEM programming with Girl Scouts and the Society of Women Engineers (SWE) Boston Professional Section), 2014

Frederick A. Howes Scholar in Computational Science (awarded to 1–2 recent alumni of the Department of Energy (DOE) Computational Science Graduate Fellowship annually for outstanding leadership, character, and technical achievement), 2013

DOE Computational Science Graduate Fellowship, 2006–2010

NSF Graduate Research Fellowship (declined), 2006

Outstanding Chemical Engineering Senior, OU College of Engineering, 2005

Outstanding Senior Researcher, OU School of Chemical, Biological, & Materials Engineering, 2005

Al Clark Chemical Engineering Prize, OU School of Chemical, Biological, & Materials Engineering, 2005

Undergraduate Research Opportunities Program Scholarship, OU Honors College, 2005

Program of Excellence Undergraduate Research Scholarship, OU School of Chemical, Biological, & Materials Engineering, 2004

## Curriculum Vitae – Ashlee N. Ford Versypt, Ph.D.

F. Mark Townsend Scholarship, OU School of Chemical, Biological, & Materials Engineering, 2004  
PACE (participation, academic achievement, community service, excellence in leadership) Award for Outstanding Freshmen, OU University College, 2002  
Oklahoma Academic Scholar/Regents Scholar (academic scholarship for in-state students selected based on ACT 99.5<sup>th</sup> percentile), Oklahoma State Regents for Higher Education/OU Scholars Program, 2001–2005

### **TRAVEL GRANT AWARDS**

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Young Investigator Award to attend Midwest Tumor Microenvironment Meeting, Kansas City, KS 2022  
Early Career Investigator Travel Fellowship to attend Symposium on Diabetic Kidney Disease, New York Academy of Sciences, 2014  
Biomedical Engineering Innovation and Career Development Award travel grant to attend Biomedical Engineering Society (BMES) Annual Meeting, 2014  
Association for Women in Mathematics travel grant to attend Society of Industrial & Applied Mathematics (SIAM) Annual Meeting, 2014  
Mathematical Biosciences Institute travel support to attend Molecular to Systems Physiology Workshop, 2014  
Institute for Mathematics and Its Applications travel funding to attend WhAM! A Research Collaboration Workshop for Women in Applied Mathematics: Dynamical Systems with Applications to Biology and Medicine, 2013  
Mathematical Biosciences Institute travel support and selected for oral presentation for Workshop for Young Researchers in Mathematical Biology, 2013  
SIAM Student Travel Award to attend SIAM Conference on the Life Sciences, 2012  
AIChE Women's Initiatives Committee Travel Award to attend AIChE Annual Meeting, 2010  
Hanratty Travel Grant, Department of Chemical & Biomolecular Engineering, UIUC, 2008, 2009  
AIChE Computing and Systems Technology Division Student Travel Grant to attend AIChE Annual Meeting, 2008

### **ACADEMIC POSITIONS SINCE FINAL DEGREE**

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Associate Professor (with tenure), Department of Chemical and Biological Engineering, University at Buffalo (UB), Jan 2021–Present  
Affiliated Faculty, Department of Biomedical Engineering, UB, 2022–Present  
Member, Witebsky Center for Microbial Pathogenesis and Immunology, UB, Aug 2022–Present  
Affiliated Faculty, Institute for Artificial Intelligence and Data Science (formerly Institute for Computational and Data Sciences), UB, Jan 2021–Present  
Affiliated Faculty, Department of Engineering Education, UB, Mar 2021–Present  
Adjunct Associate Professor, School of Chemical Engineering, OSU, Jan 2021–Aug 2021  
Associate Professor (with tenure), School of Chemical Engineering, OSU, Jul 2020–Jan 2021  
Assistant Professor, School of Chemical Engineering, OSU, Aug 2014–Jun 2020  
Center Investigator, Oklahoma Center for Respiratory and Infectious Diseases, Feb 2015–Jan 2021  
Member, Stephenson Cancer Center, OU Health Sciences Center, Nov 2015–Jan 2021  
Member, Harold Hamm Diabetes Center, OU Health Sciences Center, Nov 2014–Jan 2021  
Member, Interdisciplinary Toxicology Program, OSU, Nov 2014–Jan 2021  
Postdoctoral Research Associate, Department of Chemical Engineering, Massachusetts Institute of Technology (MIT), Jun 2012–Aug 2014

### **OTHER PROFESSIONAL EMPLOYMENT**

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Graduate Research Assistant, Department of Chemical & Biomolecular Engineering, UIUC, Aug 2005–May 2012  
DOE CSGF Practicum Researcher, Computational Science Center, Brookhaven National Laboratory, May–Aug 2007  
Process Engineering Intern, Valero Energy Corporation, Ardmore, OK, May–Aug 2005  
Undergraduate Research Assistant, School of Chemical, Biological, & Materials Engineering, OU, May 2004–May 2005

**INVITED LECTURES**

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40. “Mathematical Modeling of the Effects of Wnt-10b on Bone Metabolism,” Invited Talk, AIChE Journal Futures Session, AIChE Annual Meeting, Phoenix, AZ, Nov 2022.
39. “Modeling the Progression of Fibrosis with Dysregulation of TGF-beta in COVID19 Patients,” Computing and Systems Technology Division Plenary, AIChE Annual Meeting, Phoenix, AZ, Nov 2022.
38. “Mathematical Modeling of the Gut-Bone Axis and Implications of Butyrate Treatment on Osteoimmunology,” Invited Talk, Foundations of Systems Biology in Engineering (FOSBE) Conference, Cambridge, MA, Aug 2022.
37. “Systems Biomedicine and Pharmaceuticals: Multiscale Modeling of Tissue Remodeling and Damage,” Keynote, DOE CSGF Annual Program Review, Arlington, VA, Jul 2022.
36. “Systems Biomedicine and Pharmaceuticals: Multiscale Modeling of Tissue Remodeling and Damage,” Seminar, Department of Chemical and Biological Engineering, Illinois Institute of Technology, Virtual, Mar 2022.
35. “Systems Biomedicine and Pharmaceuticals: Multiscale Modeling of Tissues, Treatments, & Toxicology,” Distinguished Seminar Series, Department of Chemical Engineering, Auburn University, Auburn, AL, Feb 2022.
34. “Mathematical Modeling of Transport in Dynamic, Heterogeneous Biomaterials,” Thiele Award Lecture, Department of Chemical and Biomolecular Engineering, University of Notre Dame, South Bend, IN, Oct 2021.
33. “Computational Modeling of the Gut-Bone Axis and Implications of Butyrate Treatment on Osteoimmunology,” Invited Talk, Quantitative Systems Pharmacology Virtual Symposium, University at Buffalo, Jul 2021.
32. “Systems Biomedicine & Pharmaceuticals: Multiscale Modeling of Tissues, Treatments, & Toxicology,” Seminar, Department of Chemical & Biological Engineering, University of Iowa, Virtual, Apr 2021.
31. “Systems Biomedicine & Pharmaceuticals: Multiscale Modeling of Tissues, Treatments, & Toxicology,” Seminar, Department of Chemical & Life Science Engineering, Virginia Commonwealth University, Virtual, Mar 2021.
30. “Active Learning Exercises for Teaching Reactor Design,” Keynote, Survey Results & Best Practices: Reactor Design Session, Education Division, AIChE Annual Meeting, Virtual, Nov 2020. Archived recording: <https://youtu.be/qms5YEP0hbY>
29. “Systems Biomedicine & Pharmaceuticals: Multiscale Modeling of Tissues, Treatments, & Toxicology,” Seminar, Department of Aerospace & Mechanical Engineering, University of Southern California, Virtual, Oct 2020.
28. “Systems Biomedicine & Pharmaceuticals: Multiscale Modeling of Tissues, Treatments, & Toxicology,” Seminar, Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, Mar 2020.
27. “Teaching Computational Skills for Chemical Engineers,” Webinar, AIChE Education Division, Feb 2020. Archived recording: <https://www.aiche.org/academy/webinars/teaching-computational-skills-chemical-engineers>
26. “Systems Biomedicine & Pharmaceuticals: Multiscale Modeling of Tissues, Treatments, & Toxicology,” Seminar, Department of Chemical & Biomolecular Engineering, Clemson University, Clemson, SC, Feb 2020.
25. “Systems Biomedicine & Pharmaceuticals: Multiscale Modeling of Tissues, Treatments, & Toxicology,” Seminar, Department of Chemical & Biological Engineering, University at Buffalo, Buffalo, NY, Dec 2019.
24. “Systems Biomedicine & Pharmaceuticals: Multiscale Modeling of Tissues, Treatments, & Toxicology,” Seminar, Department of Chemical Engineering, University of Florida, Gainesville, FL, Nov 2019.
23. “Computational Modeling of the Diabetic Kidney,” Invited Talk, Diabetic Kidney Disease: Translating Pathogenic Mechanisms into Therapies Early Program, American Society of Nephrology Kidney Week, Washington, DC, Nov 2019.
22. “Systems Biomedicine & Pharmaceuticals: Multiscale Modeling of Tissues, Treatments, & Toxicology,” Seminar, Center for Biomanufacturing Science and Technology, University of Delaware, Newark, DE, Oct 2019.
21. “Systems Biomedicine & Pharmaceuticals: Multiscale Modeling of Tissues, Treatments, & Toxicology,” Seminar, School of Chemical & Biomolecular Engineering, Georgia Institute of Technology, Atlanta, GA, Oct 2019.
20. “Systems Biomedicine & Pharmaceuticals: Multiscale Modeling of Tissues, Treatments, & Toxicology,” Seminar, Quantitative Systems Biology Center, Vanderbilt University, Nashville, TN, Aug 2019.
19. “Graphical User Interfaces as Chemical Engineering Educational Tools in University and Informal Learning Environments,” Young Chemical Engineering Educator Invited Talk, The Future of Cyber-Assisted Chemical Engineering Education Conference, Computer Aids for Chemical Engineering, Breckenridge, CO, Jul 2019.
18. “Mathematical Modeling of Macromolecule Transport in Dynamic, Heterogeneous Micropores within Biomaterials,” Transport in Biological Systems Keynote, American Society of Mechanical Engineers (ASME) International Conference on Nanochannels, Microchannels, and Minichannels, St. John’s, Newfoundland, Canada, Jun 2019.

17. “Multiscale Computational Modeling of Renal Intercellular Cross-Talk at the Onset of Diabetic Kidney Disease,” Applied Mathematics and Numerical Analysis Area Plenary, Computing and Systems Technology Division, AIChE Annual Meeting, Pittsburgh, PA, Oct 2018.
16. “Systems Biomedicine & Pharmaceuticals: Mathematical Modeling of Tissues & Treatments,” Seminar, Department of Physiology, OU Health Sciences Center, Oklahoma City, OK, Oct 2018.
15. “Transforming Any Space into a Technology Enabled Active Learning Environment for Achieving Short- and Long-Term Learning Outcomes,” Keynote Lecture, Teaching with Technology Symposium, OSU, Stillwater, OK, Jun 2018.
14. “Systems Biomedicine & Pharmaceuticals: Mathematical Modeling of Tissues & Treatments,” Seminar, Department of Chemical & Biomolecular Engineering, Tulane University, New Orleans, LA, Mar 2018.
13. “Systems Biomedicine & Pharmaceuticals: Mathematical Modeling of Tissues & Treatments,” Seminar, Department of Chemical & Petroleum Engineering, University of Pittsburgh, Pittsburgh, PA, Sep 2017.
12. “Systems Biomedicine & Pharmaceuticals: Mathematical Modeling of Tissues & Treatments,” Seminar, Department of Chemical Engineering, Kansas State University, Manhattan, KS, Aug 2017.
11. “Systems Biomedicine & Pharmaceuticals: Mathematical Modeling of Tissues & Treatments,” Seminar, Department of Biochemistry and Molecular Biology, OSU, Stillwater, OK, Apr 2017.
10. “Systems Biomedicine & Pharmaceuticals: Mathematical Modeling of Tissues & Treatments,” Seminar, Ralph E. Martin Department of Chemical Engineering, University of Arkansas, Fayetteville, AR, Nov 2016.
9. “Mathematical Modeling of Pharmaceuticals: Predictive Design for Better Medicines,” Seminar, School of Chemical, Biological, and Materials Engineering, University of Oklahoma, Norman, OK, Mar 2015.
8. “Mathematical Modeling of Physiology & Pharmaceuticals: Engineering Design Improved Medications,” Seminar, Center for Veterinary Health Sciences, OSU, Stillwater, OK, Oct 2014.
7. “Mathematical Modeling of Pharmaceuticals: Predictive Design for Better Medicines,” Seminar, School of Chemical Engineering, Purdue University, West Lafayette, IN, Feb 2014.
6. “Mathematical Modeling of Pharmaceuticals: Predictive Design for Better Medicines,” Seminar, Department of Chemical Engineering, Texas Tech University, Lubbock, TX, Feb 2014.
5. “Mathematical Modeling of Pharmaceuticals: Predictive Design for Better Medicines,” Seminar, Artie McFerrin Department of Chemical Engineering, Texas A&M University, College Station, TX, Jan 2014.
4. “Mathematical Modeling of Pharmaceuticals: Predictive Design for Better Medicines,” Seminar, School of Chemical Engineering, OSU, Stillwater, OK, Dec 2013.
3. “Controlled-Release Dosage Forms,” Seminar, Sunovion Pharmaceuticals, Marlborough, MA, Nov 2013.
2. “Mathematical Modeling of Pharmaceuticals: Predictive Design for Better Medicines,” Howes Scholar Award Seminar, DOE CSGF Annual Program Review, Arlington, VA, Jul 2013. Archived recording: <https://youtu.be/rW6N4WMIALU>
1. “Mathematical Modeling of Pharmaceuticals: Predictive Design for Better Medicines,” Computational Research in Boston and Beyond Seminar Series, MIT, Cambridge, MA, Apr 2013.

## **EDITORSHIPS AND ADVISORY BOARDS OF JOURNALS OR PROGRAMS**

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Editorial Board, *Journal of Open Source Education*, 2021–Present  
Publications Board, *Chemical Engineering Education* journal, 2018–Present  
Editorial Board, *Processes* journal, 2018–2020  
Guest Editor for *Processes* journal special issue on Systems Biomedicine, 2018–2019  
Biomedical Sciences Program Advisory Committee, Central Technology Center, Drumright, OK, 2017–2020  
OkChE Advisory Board, OU School of Chemical, Biological and Materials Engineering, 2015–2020

## **OFFICES HELD IN PROFESSIONAL SOCIETIES**

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Director, CAST, AIChE, 2022–2024  
Academic Trustee, Computer Aids for Chemical Engineering (CACHE) Corporation, 2020–Present  
Chair, Technology Sub-Committee, Publications Board, *Chemical Engineering Education* journal, 2020–2022  
Chair-Elect/Chair/Past-Chair (3 year term with 1 year in each role), Chemical Engineering Division, ASEE, 2019–2022  
P-12 Committee Representative from Chemical Engineering Division, ASEE, 2018–2019  
Director, Chemical Engineering Division, ASEE, 2017–2019

2018 Program Coordinator for Area 10d: Applied Mathematics and Numerical Analysis, CAST Division, AIChE, 2015–2018  
Social Media Chair, CAST Division, AIChE, 2016–Present  
Girl Scout Liaison, Boston Professional Section, SWE, 2012–2014

## REVIEW PANELS

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Member, NIH Modeling and Analysis of Biological Systems Study Section, July 2022–June 2028  
Guest/ad hoc reviewer NIH Modeling and Analysis of Biological Systems Study Section panel, Jun 2020, Feb 2022;  
Special emphasis panel, Jun 2021  
Eight NSF peer review panels for Chemical, Bioengineering, Environmental and Transport Systems (CBET) Division  
and/or Engineering Directorate, 2014–2020  
NSF Graduate Research Fellowship Program review panel, 2022  
DOE Computational Science Graduate Fellowship screening panel, 2013, 2015–2018, 2022

## II. RESEARCH ACTIVITIES

Publication metrics, citation counts, and impact factors via Google Scholar as of May 20, 2022: 901 citations, h-index = 13, i10-index = 15

Google Scholar: <http://scholar.google.com/citations?user=Xaj6qbIAAAAJ>

ORCID: <http://orcid.org/0000-0001-9059-5703>

## DISSERTATION & THESIS

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*Modeling of Controlled-Release Drug Delivery from Autocatalytically Degrading Polymer Microspheres*,  
Doctoral Dissertation, University of Illinois at Urbana-Champaign, Urbana, IL, 2012.

*Biodegradable Polymeric Drug Delivery: Parallel Simulation & Optimal Drug Release Profiles*, Masters of Science  
Thesis, University of Illinois at Urbana-Champaign, Urbana, IL, 2009.

## BOOKS

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### *Graduate Research*

2. R. D. Braatz, **A. N. Ford Versypt**, L. M. Goh, and U. Ravaioli, *Nanoscale Drug Delivery Module: Student's Edition*, Materials World Modules, Northwestern University, Evanston, IL, 2012.
1. R. D. Braatz, **A. N. Ford Versypt**, L. M. Goh, and U. Ravaioli, *Nanoscale Drug Delivery Module: Teacher's Edition*, Materials World Modules, Northwestern University, Evanston, IL, 2012.

## REFEREED JOURNAL PAPERS

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*Symbols: authors contributed equally (†), graduate advisee (\*), undergraduate advisee (+), postdoctoral advisee (\*\*), corresponding author (#)*

### A. Published or accepted

31. C. V. Cook\*, M. A. Islam\*\*, B. J. Smith, and **A. N. Ford Versypt#**, Mathematical Modeling of the Effects of Wnt-10b on Bone Metabolism, *AIChE Journal*, invited contribution to 2022 Futures Issue, (Accepted, In Press) 2022. DOI: 10.1002/aic.17809 (open access *bioRxiv* preprint DOI: 10.1101/2021.06.12.448204v3)
30. H. Y. Thomas\* and **A. N. Ford Versypt#**, Pathophysiology of Mesangial Expansion in Diabetic Nephropathy: Mesangial Structure, Glomerular Biomechanics, and Biochemical Signaling and Regulation, *Journal of Biological Engineering*, 2022, 16, 19. DOI: 10.1186/s13036-022-00299-4. **Invited contribution to thematic series on Emerging Leaders in Biological Engineering.**
29. M. W. Liberatore#, D. Lepek, L. Ford, T. Carter, J. Pascal, M. Lamm, C. Patton Luks, D. L. Silverstein, **A. N. Ford Versypt**, S. Butler Velegol, T. Vogel, N. Raikar, M. Kipper, and C. W. West, AIChE Virtual Communities

- of Practice – Supporting Faculty During the COVID-19 Pandemic, *Chemical Engineering Education*, 2022, 56(1), 68–78. DOI: 10.18260/2-1-370.660-125282.
28. M. A. Islam\*\*, C. V. Cook\*, B. J. Smith, and **A. N. Ford Versypt#**, Mathematical Modeling of the Gut-Bone Axis and Implications of Butyrate Treatment on Osteoimmunology, *Industrial & Engineering Chemistry Research*, 2021, 60(49), 17814–17825. DOI: 10.1021/acs.iecr.1c02949. Impact factor: 3.573. **2021 Class of Influential Researchers special issue.**
  27. **A. N. Ford Versypt#**, Multiscale Modeling in Disease, *Current Opinion in Systems Biology*, 27, 100340, 2021. **Invited review.** DOI: 10.1016/j.coisb.2021.05.001. Impact factor: 2.09.
  26. J. E. Bara, **A. N. Ford Versypt#**, R. B. Getman, C. A. Kieslich, and R. S. Voronov, Apps for Chemical Engineering Education: Off the Shelf and Do It Yourself Development Options, *Chemical Engineering Education*, 54(3): 137–142, 2020. <https://journals.flvc.org/cee/article/view/116709>. Impact factor: 0.38.
  25. S. M. Ruggiero\* and **A. N. Ford Versypt#**, SBMLtoODEpy: A Software Program for Converting SBML Models into ODE Models in Python, *Journal of Open Source Software*, 4(41), 1643, 2019. DOI: 10.21105/joss.01643.
  24. Y. T. Nguyen Edalgo\*, A. L. Zornes+, and **A. N. Ford Versypt#**, A Hybrid Discrete-Continuous Model of Metastatic Cancer Cell Migration through a Remodeling Extracellular Matrix, *AIChE Journal*, 65(9), e16671, 2019. DOI: 10.1002/aic.16671. Impact factor: 3.51. Citations: 3.
  23. **A. N. Ford Versypt#**, Self-Evaluation and Reflection for Professional Development of Chemical Engineering Students, *Chemical Engineering Education*, 53(3), 157–161, 2019. Impact factor: 0.38.
  22. M. R. Pilvankar\*, H. L. Yong+, and **A. N. Ford Versypt#**, A Glucose-Dependent Pharmacokinetic/Pharmacodynamic Model of ACE Inhibition in Kidney Cells, *Processes*, 7(3), 131, 2019. DOI: 10.3390/pr7030131 **Cover article: <https://www.mdpi.com/2227-9717/7/3>. Editor’s Choice.** Impact factor: 2.753.
  21. J. D. Crall†, B. L. de Bivort, B. Dey†, and **A. N. Ford Versypt†#**, Social Buffering of Pesticides in Bumblebees: Agent-Based Modeling of the Effects of Colony Size and Neonicotinoid Exposure on Behavior within Nests, *Frontiers in Ecology and Evolution*, 7, 51, 2019. DOI: 10.3389/fevo.2019.00051. Impact factor: 2.416.
  20. C. V. Eastep+, G. K. Harrell+, A. N. McPeak+, and **A. N. Ford Versypt#**, A MATLAB App to Introduce Chemical Engineering Design Concepts to Engineering Freshmen through a Pharmaceutical Dosing Case Study, *Chemical Engineering Education*, 53(2), 85–90, 2019. Impact factor: 0.38. Citations: 1.
  19. J. D. Crall#, C. M. Switzer, R. L. Oppenheimer, **A. N. Ford Versypt**, B. Dey, A. Brown, M. Eyster, C. Guerin, N. E. Pierce, S. A. Combes, and B. L. de Bivort, Neonicotinoid Exposure Disrupts Bumblebee Nest Behavior, Social Networks, and Thermoregulation, *Science*, 362(6415), 683–686, 2018. DOI: 10.1126/science.aat1598 **Highlighted in perspective article:** N. E. Raine, Pesticide Affects Social Behavior of Bees, *Science*, 362, 643–644, 2018. DOI: 10.1126/science.aav5273. **Mentioned in 70+ news outlets including NPR and C&EN.** Impact factor: 41.845. Citations: 45.
  18. **A. N. Ford Versypt#**, J. D. Crall, and B. Dey, BeeNestABM: An Open-Source Agent-based Model of Spatiotemporal Distribution of Bumblebees in Nests, *Journal of Open Source Software*, 3(27), 718, 2018. DOI: 10.21105/joss.00718.
  17. Y. T. Nguyen Edalgo\* and **A. N. Ford Versypt#**, Mathematical Modeling of the Metastatic Cancer Migration through a Remodeling Extracellular Matrix, *Processes*, 6(5), 58, 2018. DOI: 10.3390/pr6050058 **Cover article: <https://www.mdpi.com/2227-9717/6/5>. Editor’s Choice.** Impact factor: 2.753. Citations: 5.
  16. S. M. Ruggiero†\*, J. Zhao†, and **A. N. Ford Versypt#**, Building a MATLAB Graphical User Interface to Solve Ordinary Differential Equations as a Final Project for an Interdisciplinary Elective Course on Numerical Computing, *Journal of Computational Science Education*, 9(1), 19–28, 2018. DOI: 10.22369/issn.2153-4136/9/1/3.
  15. M. R. Pilvankar\*, M. A. Higgins+, and **A. N. Ford Versypt#**, Mathematical Model for Glucose Dependence of the Local Renin-Angiotensin System in Podocytes, *Bulletin of Mathematical Biology*, 80(4), 880–905, 2018. DOI: 10.1007/s11538-018-0408-4. Impact factor: 1.812.
  14. S. A. Irfan, R. Razali, K. KuShaari, N. Mansor, B. Azeem, and **A. N. Ford Versypt#**, A Review of Mathematical Modeling and Simulation of Controlled-Release Fertilizers, *Journal of Controlled Release*, 271, 45–54, 2018. DOI: 10.1016/j.jconrel.2017.12.017. Impact factor: 7.877. Citations: 34.
  13. **A. N. Ford Versypt#**, Choose Your Own Kinetics Adventure: Student-Designed Case Studies for Chemical Reaction Engineering Course Projects, *Transactions on Techniques for STEM Education*, 3, 48–56, 2017.
  12. S. M. Ruggiero†\*, M. R. Pilvankar†\*, and **A. N. Ford Versypt#**, Computational Modeling of Tuberculosis Granuloma Activation, *Processes*, 5(4), 79, 2017. DOI: 10.3390/pr5040079. Impact factor: 2.753.

11. **A. N. Ford Versypt**<sup>#</sup>, G. K. Harrell<sup>+</sup>, and A. N. McPeak<sup>+</sup>, A Pharmacokinetic/Pharmacodynamic Model of ACE Inhibition of the Renin-Angiotensin System for Normal and Impaired Renal Function, *Computers & Chemical Engineering*, 104, 311–322, 2017. DOI: 10.1016/j.compchemeng.2017.03.027. Impact factor: 4.0. Citations: 8.
10. **A. N. Ford Versypt**<sup>#</sup>, G. K. Harrell<sup>+</sup>, and A. N. McPeak<sup>+</sup>, ACEInhibPKPD: An Open-Source MATLAB App for a Pharmacokinetic/Pharmacodynamic Model of ACE Inhibition, *Journal of Open Source Software*, 2(17), 340, 2017. DOI: 10.21105/joss.00340.
9. J. C. Arciero<sup>†</sup><sup>#</sup>, L. Ellwein<sup>†</sup>, **A. N. Ford Versypt**<sup>†</sup>, E. Makrides, and A. T. Layton, Modeling Blood Flow Control in the Kidney, *Applications of Dynamical Systems in Biology and Medicine*, 158, 55–73, 2015. DOI: 10.1007/978-1-4939-2782-1\_3. Citations: 5.
8. **A. N. Ford Versypt**<sup>†</sup>, E. Makrides<sup>†</sup><sup>#</sup>, J. C. Arciero, L. Ellwein, and A. T. Layton, Bifurcation Study of Blood Flow Control in the Kidney, *Mathematical Biosciences*, 263, 169–179, 2015. DOI: 10.1016/j.mbs.2015.02.015. Impact factor: 1.649. Citations: 7.

### Postdoctoral Research

7. A. Mesbah, **A. N. Ford Versypt**, X. Zhu, and R. D. Braatz<sup>#</sup>, Nonlinear Model-Based Control of a Thin-Film Dryer for Continuous Pharmaceutical Manufacturing, *Industrial & Engineering Chemistry Research*, 53(18), 7447–7460, 2014. DOI: 10.1021/ie402837c. Impact factor: 3.573. Citations: 18.

### Graduate Research

6. **A. N. Ford Versypt**, P. D. Arendt, D. W. Pack, and R. D. Braatz<sup>#</sup>, Derivation of an Analytical Solution to a Reaction-Diffusion Model for Autocatalytic Degradation and Erosion in Polymer Microspheres, *PLoS ONE*, 10(8), e01035506, 2015. DOI: 10.1371/journal.pone.0135506. Impact factor: 2.776. Citations: 13.
5. **A. N. Ford Versypt** and R. D. Braatz<sup>#</sup>, Analysis of Finite Difference Discretization Schemes for Diffusion in Spheres with Variable Diffusivity, *Computers & Chemical Engineering*, 71, 241–252, 2014. DOI: 10.1016/j.compchemeng.2014.05.022. Impact factor: 4.0. Citations: 18.
4. **A. N. Ford Versypt**, D. W. Pack, and R. D. Braatz<sup>#</sup>, Mathematical Modeling of Drug Delivery from Autocatalytically Degradable PLGA Microspheres—A Review, *Journal of Controlled Release*, 165(1), 29–37, 2013. DOI: 10.1016/j.jconrel.2012.10.015. Impact factor: 7.877. Citations: 241.
3. M. Kishida, **A. N. Ford Versypt**, D. W. Pack, and R. D. Braatz<sup>#</sup>, Optimal Control of 1D Cellular Uptake in Tissue Engineering, *Optimal Control Applications and Methods*, 34(6), 680–695, 2013. DOI: 10.1002/oca.2047. Impact factor: 1.252. Citations: 8.
2. M. Jiang, M. H. Wong, Z. Zhu, J. Zhang, L. Zhou, K. Wang, **A. N. Ford Versypt**, T. Si, L. M. Hasenberg, Y.-E. Li, and R. D. Braatz<sup>#</sup>, Towards Achieving a Flattop Crystal Size Distribution by Continuous Seeding and Controlled Growth, *Chemical Engineering Science*, 77, 2–9, 2012. DOI: 10.1016/j.ces.2011.12.033. Impact factor: 3.372. Citations: 45.

### Undergraduate Research

1. **A. N. Ford** and D. V. Papavassiliou<sup>#</sup>, Flow around Surface-Attached Carbon Nanotubes, *Industrial & Engineering Chemistry Research*, 45(5), 1797–1804, 2006. DOI: 10.1021/ie050932h. Impact factor: 3.573. Citations: 14.

### B. Preprints and under review

1. M. Getz, Y. Wang, G. An, M. Asthana, A. Becker, C. Cockrell, N. Collier, M. Craig, C. Davis, J. R. Faeder, **A. N. Ford Versypt**, T. Mapder, J. F. Gianlupi, J. A. Glazier, S. Hamis, R. Heiland, T. Hillen, D. Hou, M. A. Islam<sup>\*\*</sup>, A. L. Jenner, F. Kurtoglu, C. I. Larkin, B. Liu, F. Macfarlane, P. Maygrundter, P. A. Morel, A. Narayanan, J. Ozik, E. Pienaar, P. Rangamani, A. S. Saglam, J. E. Shoemaker, A. M. Smith, J. J. A. Weaver, and P. Macklin<sup>#</sup>, Iterative Community-Driven Development of a SARS-CoV-2 Tissue Simulator, *bioRxiv preprint*, 2021. DOI: 10.1101/2020.04.02.019075v5.
2. **A. N. Ford Versypt**<sup>#</sup> and D. H. Mullins<sup>\*</sup>, ApplNumComp: An Open Access Introductory Course for Applied Numerical Computing, submitted to *Journal of Open Source Education*, 2021.
3. B. A. Bartlett<sup>+</sup>, Y. Feng, C. A. Fromen, and **A. N. Ford Versypt**<sup>#</sup>, Computational Modeling of Aerosol Particle Transport through Lung Mucosa, *bioRxiv preprint*, 2021. DOI: 10.1101/2021.10.18.464809.
4. M. A. Islam<sup>\*\*</sup> and **A. N. Ford Versypt**<sup>#</sup>, An Agent-Based Modeling Approach for Modeling Lung Fibrosis in Response to COVID-19, *bioRxiv preprint*, 2022, DOI: pending.

**REFEREED CONFERENCE PROCEEDINGS PAPERS**

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*Symbols: authors contributed equally (†), graduate advisee (\*), undergraduate advisee (+), corresponding author (#)*

12. H. Y. Thomas\* and **A. N. Ford Versypt#**, Collagen Deposition in Diabetic Kidney Disease Boosts Intercellular Signaling: A Mathematical Model, *Proceedings of the Foundations of Systems Biology in Engineering Conference*, 2022 (Accepted, In Press), *bioRxiv preprint* DOI: 10.1101/2021.03.25.437068.
11. **A. N. Ford Versypt#**, S. L. Carpenter+, T. L. Adkins II+, T. A. Sperry, and Y. Feng, Kidney and Lung Demonstrations to Introduce Engineering Concepts to Middle School Students and Their Grandparents, *Proceedings of the ASEE Annual Conference*, Virtual, 2021. <https://peer.asee.org/37415>.
10. **A. N. Ford Versypt#** and D. Khvostichenko, Clean Water through Chemical Engineering: Introducing K-12 Students to ChE Using Filtration, *Proceedings of the ASEE Annual Conference*, Virtual, 2020. DOI: 10.18260/1-2--34288.
9. **A. N. Ford Versypt†#**, J. J. Versypt†, and H. Gappa-Fahlenkamp, University-Led Engineering Outreach to Adults: Public Engagement and Senior Adult Initiatives, *Proceedings of the ASEE Midwest Section Conference*, Wichita, KS, 2019. <https://peer.asee.org/33913>.
8. **A. N. Ford Versypt#**, An Interdisciplinary Elective Course to Build Computational Skills for Mathematical Modeling in Science and Engineering, *Proceedings of the ASEE Annual Conference*, Tampa, FL, 2019. DOI: 10.18260/1-2--32072.
7. **A. N. Ford Versypt#**, Choose Your Own Kinetics Adventure: Student-Designed Case Studies for Chemical Reaction Engineering Course Projects, *Proceedings of the ASEE Midwest Section Conference*, Stillwater, OK, 2017. **2<sup>nd</sup> place technical paper**. <https://www.asee.org/papers-and-publications/papers/section-proceedings/midwest/2017>.
6. G. K. Harrell†+, A. N. McPeak†+, and **A. N. Ford Versypt#**, A Pharmacokinetic Simulation-Based Module to Introduce Mass Balances and Chemical Engineering Design Concepts to Engineering Freshmen, *Proceedings of the ASEE Annual Conference*, Columbus, OH, 2017. DOI: 10.18260/1-2--27493. Citations: 3.
5. **A. N. Ford Versypt#**, Self-Reflection Assignments for Evaluating Non-Technical Skills and Setting Goals for Professional Development, *Proceedings of the ASEE Annual Conference*, Columbus, OH, 2017. DOI: 10.18260/1-2--28819.

**Postdoctoral Research**

4. A. E. Lu†, J. A. Paulson†, N. J. Mozdierz, A. Stockdale, **A. N. Ford Versypt**, K. J. Love, J. C. Love, and R. D. Braatz#, Control Systems Technology in the Advanced Manufacturing of Biologic Drugs, *Proceedings of the IEEE Conference on Control Applications*, Sydney, Australia, 1505–1515, 2015. DOI: 10.1109/CCA.2015.7320824. Citations: 7.

**Graduate Research**

3. J. J. Versypt† and **A. N. Ford Versypt†#**, Mapping Rural Students' STEM Involvement: Case Studies of Chemical Engineering Undergraduate Enrollment in the States of Illinois and Kansas, *Proceedings of the ASEE Annual Conference*, Atlanta, GA, 2013. DOI: 10.18260/1-2--22270. **Recognized as outstanding paper by the ASEE Chemical Engineering Division Joseph J. Martin Award**. Citations: 8.
2. **A. N. Ford**, D. W. Pack, and R. D. Braatz#, Multi-Scale Modeling of PLGA Microparticle Drug Delivery Systems, *Proceedings of the 21<sup>st</sup> European Symposium on Computer Aided Process Engineering (ESCAPE-21)*, Chalkidiki, Greece, 1475–1479, 2011. DOI: 10.1016/B978-0-444-54298-4.50074-X. Citations: 20.
1. M. Kishida, **A. N. Ford**, D. W. Pack, and R. D. Braatz#, Optimal Control of Cellular Uptake in Tissue Engineering, *Proceedings of the American Control Conference*, Seattle, WA, 2118–2123, 2008. DOI: 10.1109/ACC.2008.4586805. Citations: 20.

**UNREFEREED PUBLICATIONS (MAGAZINE & NEWS ARTICLES & LESSON PLANS)**

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5. **A. N. Ford Versypt**, What Can I Do About Systemic Racism As an Engineering Educator?, *ASEE Commission on Diversity, Equity, and Inclusion Guest Blog*, May 9, 2022. <https://diversity.asee.org/deicommitttee/2022/05/09/what-can-i-do-about-systemic-racism-as-an-engineering-educator>.
4. **A. N. Ford Versypt**, Mathematical Modeling to Improve Understanding of Diabetic Complications in the Kidneys, *SIAM News Blog*, Sep 6, 2016. <https://sinews.siam.org/Details-Page/tabid/900/ArtMID/2243/ArticleID/1473/Mathematical-Modeling-to-Improve-Understanding-of-Diabetic-Complications-in-the-Kidneys>.

3. **A. N. Ford** and D. Khvostichenko, “Filtration Fun Lesson Plan,” Illinois Researchers in Partnership with K-12 Science Educators, University of Illinois at Urbana-Champaign, Urbana, IL, 2011. Available for free download at [tinyurl.com/ashleefv/waterfiltration](http://tinyurl.com/ashleefv/waterfiltration).
2. D. J. Hoelzle, **A. N. Ford**, R. D. Gregg, M. J. Johnson, and J. P. Kemmerer, Symposium on Emerging Topics in Control and Modeling: Biomedical Systems [Conference Reports], *IEEE Control Systems Magazine*, 30(6), 132–134, 2010. DOI: 10.1109/MCS.2010.938489.
1. **A. N. Ford**, Girl Scout STEM Workshop: Experience with 6<sup>th</sup>–10<sup>th</sup> Grade Girls in Rural Oklahoma, *Proceedings of the ASEE North Midwest Section Conference*, Milwaukee, WI, 2009.

## SOFTWARE CODE REPOSITORIES

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*Symbols: authors contributed equally (†), postdoctoral advisee (\*\*), graduate advisee (\*), undergraduate advisee (+), corresponding author (#)*

14. C. V. Cook\* and **A. N. Ford Versypt#**, “Wnt10bBoneCompartment,” <https://github.com/ashleefv/Wnt10bBoneCompartment>, 2022. DOI: 10.5281/zenodo.6066256
13. M. A. Islam\*\* and **A. N. Ford Versypt#**, “butyrateGutBoneAxis,” <http://github.com/ashleefv/butyrateGutBoneAxis>, 2021. DOI: 10.5281/zenodo.5121874
12. H. Y. Thomas\* and **A. N. Ford Versypt#**, “ColDepSignalingImpact,” <http://github.com/ashleefv/ColDepSignalingImpact>, 2021. DOI: 10.5281/zenodo.4595364
11. S. M. Ruggiero\* and **A. N. Ford Versypt#**, “GlomSliceGen,” <http://github.com/ashleefv/GlomSliceGen>, 2021. DOI: 10.5281/zenodo.4304709
10. **A. N. Ford Versypt#** and D. H. Mullins\*, “ApplNumComp,” <http://github.com/ashleefv/ApplNumComp>, 2021. DOI: 10.5281/zenodo.4711792
9. S. M. Ruggiero\* and **A. N. Ford Versypt#**, “SBMLtoODEpy,” <http://github.com/SMRuggiero/SBMLtoODEpy>, 2019. DOI: 10.5281/zenodo.3441677
8. **A. N. Ford Versypt#**, J. D. Crall, and B. Dey, “BeeNestABM,” <http://github.com/ashleefv/BeeNestABM>, 2018. DOI: 10.5281/zenodo.1148830
7. Y. T. Nguyen Edalgo\* and **A. N. Ford Versypt#**, “MetastaticCancerECMRemodeling,” <http://github.com/ashleefv/MetastaticCancerECMRemodeling>, 2018. DOI: 10.5281/zenodo.1226605
6. Y. T. Nguyen Edalgo\* and **A. N. Ford Versypt#**, “MetastaticCancerECMRemodelingCC3D,” <http://github.com/ashleefv/MetastaticCancerECMRemodelingCC3D>, 2018. DOI: 10.5281/zenodo.1346336
5. M. R. Pilvankar\*, H. L. Yong+, and **A. N. Ford Versypt#**, “COMBINEDglucoseRASpodocytesACEInhibPKPD,” <http://github.com/ashleefv/COMBINEDglucoseRASpodocytesACEInhibPKPD>, 2018. DOI: 10.5281/zenodo.1303450
4. **A. N. Ford Versypt#**, G. K. Harrell+, A. N. McPeak+, and C. V. Eastep+, “ACEInhibPKPD,” <http://github.com/ashleefv/ACEInhibPKPD>, 2018. DOI: 10.5281/zenodo.1318682
3. S. M. Ruggiero\* and **A. N. Ford Versypt#**, “tbActivationDynamics,” <http://github.com/ashleefv/tbActivationDynamics>, 2017. DOI: 10.5281/zenodo.1034561
2. M. R. Pilvankar\*, M. A. Higgins+, and **A. N. Ford Versypt#**, “glucoseRASpodocytes,” <http://github.com/ashleefv/glucoseRASpodocytes>, 2017. DOI: 10.5281/zenodo.806015
1. **A. N. Ford Versypt#** and R. D. Braatz, “FD\_spheres\_variable\_diffusivity,” [http://github.com/ashleefv/FD\\_spheres\\_variable\\_diffusivity](http://github.com/ashleefv/FD_spheres_variable_diffusivity), 2017. DOI: 10.5281/zenodo.582349

## CONTRIBUTED ORAL PRESENTATIONS

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*Presenter underlined. Symbols: graduate advisee (\*), undergraduate advisee (+), postdoctoral advisee (\*\*)*

120. **A. N. Ford Versypt**, C. V. Cook\*, M. A. Islam\*\*, and B. J. Smith, “Mathematical Modeling of the Effects of Wnt-10b on Bone Metabolism,” AICHE Annual Meeting, Phoenix, AZ, Nov 2022, **AICHE Journal Futures Session, invited**.
119. M. A. Islam\*\* and **A. N. Ford Versypt**, “Modeling the Progression of Fibrosis with Dysregulation of TGF-beta in COVID19 Patients,” AICHE Annual Meeting, Phoenix, AZ, Nov 2022, **Computing and Systems Technology Division Plenary, invited**.
118. M. A. Islam\*\* and **A. N. Ford Versypt**, “Mathematical Modeling of Dysregulation of ACE2 Depending on Age-Sex and Blood Pressure and Progression of Fibrosis in COVID19 Survivors,” AICHE Annual Meeting, Phoenix, AZ, Nov 2022 (abstract accepted).

117. C. V. Cook\*, B. J. Smith, and **A. N. Ford Versypt**, “Short Chain Fatty Acid Influence on Normal and Estrogen Deficient Bone Remodeling,” AIChE Annual Meeting, Phoenix, AZ, Nov 2022 (abstract accepted).
116. H. Y. Thomas\* and **A. N. Ford Versypt**, “Predicting Therapeutic Efficacy on Renal Fibrosis in Diabetes: A Mathematical Model,” AIChE Annual Meeting, Phoenix, AZ, Nov 2022 (abstract accepted).
115. K. Patidar\* and **A. N. Ford Versypt**, “A Logic-Based Modeling Study of Glucose Mediated Immune Response in Diabetic Kidney Disease,” AIChE Annual Meeting, Phoenix, AZ, Nov 2022 (abstract accepted).
114. P. A. Adedigba, B. H. Hatter, S. E. Alake, I. Proapa, L. Perez, A. Snethen, **A. N. Ford Versypt**, J. A. Ice, E. A. Lucas, and B. J. Smith, “Role of Short Chain Fatty Acids in Mediating the Osteoprotective Effects of Tart Cherry and Fructooligosaccharides in C57BL/6 Female Mice,” American Society for Bone and Mineral Research Annual Meeting, Austin, TX, Sep 2022 (abstract submitted).
113. **A. N. Ford Versypt**, M. A. Islam\*\*, C. V. Cook\*, and B. J. Smith, “Mathematical Modeling of the Gut-Bone Axis and Implications of Butyrate Treatment on Osteoimmunology,” FOSBE, Cambridge, MA, Aug 2022, **invited**.
112. C. Campbell+ and **A. N. Ford Versypt**, “Adapting a Computational Simulation for Cancer Treatment for Healthcare Professionals,” National Summer Undergraduate Research Conference, Virtual, Jul 2022.
111. A. Belyablya+ and **A. N. Ford Versypt**, “Modeling Gut Inflammation Using Ordinary Differential Equations,” UB Undergraduate Research Conference, Virtual, Jul 2022.
110. M. A. Islam\*\* and **A. N. Ford Versypt**, “Modeling the Progression of Fibrosis with Dysregulation of TGF-beta in COVID19 Patients,” International Conference on Systems Biology of Human Diseases, Nashville, TN, Jun 2022.
109. **A. N. Ford Versypt**, Y. T. Nguyen Edalgo\*, and T. O. Benson\*, “A Hybrid CompuCell3D Model of Cancer Migration in a Metastatic Remodeling Extracellular Matrix,” Midwest Tumor Microenvironment Meeting, Kansas City, KS, May 2022. **Young Investigator Award (travel grant)**.
108. H. Y. Thomas\* and **A. N. Ford Versypt**, “Predicting Therapeutic Efficacy on Renal Fibrosis in Diabetes: A Mathematical Model,” UB SIAM Applied Math Seminar, Virtual, Apr 2022.
107. **A. N. Ford Versypt**, M. A. Islam\*\*, C. V. Cook\*, and B. J. Smith, “Mathematical Modeling of the Gut-Bone Axis and Implications of Butyrate Treatment on Osteoimmunology,” Joint Mathematics Meetings, Virtual, Mar 2022, **invited to special session: Current Advances in Computational Biomedicine**.
106. H. Y. Thomas\* and **A. N. Ford Versypt**, “Collagen Deposition during Diabetic Kidney Disease Enhances Cellular Communication,” AIChE Annual Meeting, Boston, MA, Nov 2021.
105. M. A. Islam\*\* and **A. N. Ford Versypt**, “Modeling the Progression of Fibrosis with Dysregulation of ACE2 in COVID19 Patients,” AIChE Annual Meeting, Boston, MA, Nov 2021.
104. C. V. Cook\* and **A. N. Ford Versypt**, “Computational Modeling of the Relationship between Immune Cell Populations and the Bone Remodeling Cycle,” AIChE Annual Meeting, Boston, MA, Nov 2021.
103. B. A. Bartlett+, Y. Feng, C. Fromen, and **A. N. Ford Versypt**, “Computer Modeling of Aerosol Particle Transport through Lung Mucosa,” AIChE Annual Meeting, Boston, MA, Nov 2021.
102. H. Y. Thomas\* and **A. N. Ford Versypt**, “Collagen Deposition during Diabetic Kidney Disease Enhances Cellular Communication,” NOBCChE Conference, Virtual, Sep 2021.
101. **A. N. Ford Versypt**, “Holding Space to Talk about Race: the ASEE Chemical Engineering Division Conversation Series on Inclusion and Thriving,” ASEE Midwest Section Conference, Virtual, Sep 2021.
100. **A. N. Ford Versypt**, M. A. Islam\*\*, C. V. Cook\*, and B. J. Smith, “Computational Modeling of the Gut-Bone Axis and Implications of Butyrate Treatment on Osteoimmunology,” Quantitative Systems Pharmacology Virtual Symposium, University at Buffalo, Jul 2021, **invited**.
99. G. Kimmerer+ and **A. N. Ford Versypt**, “Modeling Angiotensin Signaling in Diabetic Kidney Disease Using Logic-Based Approaches,” UB Undergraduate Research Conference, Virtual, Jul 2021.
98. B. A. Bartlett+ and **A. N. Ford Versypt**, “Computer Modeling of Aerosol Particle Transport through Lung Mucosa,” UB Undergraduate Research Conference, Virtual, Jul 2021.
97. **A. N. Ford Versypt**, S. L. Carpenter+, T. L. Adkins II+, T. A. Sperry, and Y. Feng, “Kidney and Lung Demonstrations to Introduce Engineering Concepts to Middle School Students and Their Grandparents,” ASEE Annual Conference, Virtual, Jul 2021.
96. H. Y. Thomas\* and **A. N. Ford Versypt**, “Excess Collagen Deposition in Diabetic Kidney Disease Enhances Cellular Communication: A Mathematical Model,” Society of Mathematical Biology (SMB) Annual Meeting, Virtual, Jun 2021.
95. M. A. Islam\*\* and **A. N. Ford Versypt**, “Modeling the Progression of Fibrosis with Dysregulation of ACE2 in COVID19 Patients,” SMB Annual Meeting, Virtual, Jun 2021.
94. M. A. Islam\*\* and **A. N. Ford Versypt**, “Multiscale Simulation of Lung Fibrosis Induced by SARS-CoV-2 Infection and Acute Respiratory Distress Syndrome,” SMB Annual Meeting, Virtual, Jun 2021.

93. **A. N. Ford Versypt**, “Development of Open Access Version of Applied Numerical Computing Course,” Computer Aids for Chemical Engineering Trustees Meeting, Virtual, Jun 2021.
92. **A. N. Ford Versypt** and M. A. Islam\*\*, “Multiscale Simulation of Lung Fibrosis Induced by SARS-CoV-2 Infection and Acute Respiratory Distress Syndrome,” Interagency Modeling and Analysis Group/Multi-Scale Modeling Working Group on Multiscale Modeling and Viral Pandemics mini seminar, Virtual, Mar 2021, **invited**. Archived recording: [https://youtu.be/5CL1v2\\_Uz7A?t=1378](https://youtu.be/5CL1v2_Uz7A?t=1378)
91. **H. Y. Thomas\*** and **A. N. Ford Versypt**, “Modeling Cellular Signaling and Mesangial Fibrosis during Diabetic Kidney Disease,” AIChE Annual Meeting, Virtual, Nov 2020. Archived recording: <https://youtu.be/Zy0h6K2A-EM>
90. **S. M. Ruggiero\*** and **A. N. Ford Versypt**, “Coupling the Mechanisms of Diabetic Kidney Disease by Modeling the Tissues of the Glomerulus,” AIChE Annual Meeting, Virtual, Nov 2020. Archived recording: <https://youtu.be/Zy70zWUyGfA>
89. **M. A. Islam\*\***, C. V. Cook\*, B. J. Smith, and **A. N. Ford Versypt**, “Computational Modeling of the Gut-Bone Axis and Implications of Butyrate Treatment on Osteoimmunology,” AIChE Annual Meeting, Virtual, Nov 2020. Archived recording: <https://youtu.be/tlqe2VR9DfE>
88. **A. N. Ford Versypt**, **M. A. Islam\*\***, and SARS-CoV-2 Tissue Simulation Coalition, “Multiscale Lung Tissue Simulator for SARS-CoV-2 Infection and Damage,” AIChE Annual Meeting, Virtual, Nov 2020. Archived recording: <https://youtu.be/KfQxSME62rQ>
87. **A. N. Ford Versypt**, “Active Learning Exercises for Teaching Reactor Design,” AIChE Annual Meeting, Virtual, Nov 2020, **invited talk in session Survey Results and Best Practices (reactor design)**. Archived recording: <https://youtu.be/qms5YEPOhbY>
86. **A. N. Ford Versypt**, “Choose Your Own Kinetics Adventure: Student-Designed Case Studies for Chemical Reactor Design Projects,” AIChE Annual Meeting, Virtual, Nov 2020. Archived recording: <https://youtu.be/AIRszvmu8E4>
85. **C. V. Cook\***, M. A. Islam\*\*, B. J. Smith, and **A. N. Ford Versypt**, “Mathematical Modeling of the Relationship between Wnt10b Produced by T Cells and the Bone Remodeling Cycle AIChE Annual Meeting, Virtual, Nov 2020. Archived recording: <https://youtu.be/T0Bmju9o7ZU>
84. **B. Bartlett+**, Y. Feng, C. A. Fromen, and **A. N. Ford Versypt**, “Computer Modeling of Aerosol Diffusion through Lung Mucosa,” Student Technical Paper Competition, AIChE Annual Student Conference, Virtual, Nov 2020.
83. **B. Bartlett+**, Y. Feng, C. A. Fromen, and **A. N. Ford Versypt**, “Computer Modeling of Aerosol Diffusion through Lung Mucosa,” Gulf Coast Undergraduate Research Symposium, Virtual, Oct 2020.
82. **M. A. Islam\*\***, C. V. Cook\*, B. J. Smith, and **A. N. Ford Versypt**, “Computational Modeling of the Gut-Bone Axis and Implications of Butyrate Treatment on Osteoimmunology,” BMES Annual Meeting, Virtual, Oct 2020.
81. **A. N. Ford Versypt**, M. A. Islam\*\*, C. V. Cook\*, and B. J. Smith, “Computational Modeling of the Gut-Bone Axis and Implications of Butyrate Treatment on Osteoimmunology,” European Conference on Mathematical and Theoretical Biology, Heidelberg, Germany, Sep 2020 (*cancelled due to COVID-19*).
80. **A. N. Ford Versypt**, M. A. Islam\*\*, C. V. Cook\*, and B. J. Smith, “Investigation of Short Chain Fatty Acids on the Gut-Bone Axis: From Mechanism to a Computational Systems Approach,” Society for Mathematical Biology Annual Meeting, Virtual, Aug 2020.
79. **M. A. Islam\*\***, C. V. Cook\*, B. J. Smith, and **A. N. Ford Versypt**, “Computational Modeling of the Gut-Bone Axis and Implications of Butyrate Treatment on Osteoimmunology,” Society for Mathematical Biology Annual Meeting, Virtual, Aug 2020.
78. **A. N. Ford Versypt** and D. Khvostichenko, “Clean Water through Chemical Engineering: Introducing K-12 Students to ChE Using Filtration,” ASEE Annual Conference, Virtual, Jun 2020.
77. **A. N. Ford Versypt**, “Modeling Intraglomerular Transport and Crosstalk in Diabetic Kidney Disease,” SIAM Conference on the Life Sciences, Jun 2020 (*cancelled due to COVID-19*).
76. **B. Bartlett+**, Y. Feng, C. A. Fromen, and **A. N. Ford Versypt**, “Computer Modeling of Aerosol Diffusion through Lung Mucosa,” AIChE Mid-America Student Regional Conference, Virtual, May 2020. **1<sup>st</sup> Place in Student Technical Presentation Competition.**
75. **J. D. Crall**, A. Easton-Calabria, K. Cronin, J. Thuma, B. Dey, **A. N. Ford Versypt**, and B. L. de Bivort, “The Social Scaling of Stress-Sensitivity: Understanding the Impacts of Pesticide Exposure and Temperature Stress in Bumblebee Colonies,” Society for Integrative and Comparative Biology Annual Meeting, Austin, TX, Jan 2020.
74. M. R. Pilvankar\*, A. D. Sartin+, C. Streeter+, S. M. Ruggiero\*, and **A. N. Ford Versypt**, “Intercellular Biochemical Cross-Talk at the Onset of Diabetic Kidney Disease,” AIChE Annual Meeting, Orlando, FL, Nov 2019.
73. **A. N. Ford Versypt**, J. D. Crall, B. L. de Bivort, and B. Dey, “Agent-Based Modeling of the Effects of Colony Size and Neonicotinoid Exposure on Bumblebee Behavior within Nests,” AIChE Annual Meeting, Orlando, FL, Nov 2019.

72. **A. N. Ford Versypt**, “Building Computational Skills for Mathematical Modeling in Science and Engineering through an Interdisciplinary Elective Course,” AIChE Annual Meeting, Orlando, FL, Nov 2019.
71. **J. D. Crall**, A. Easton-Calabria, K. Cronin, J. Thuma, B. Dey, **A. N. Ford Versypt**, and B. L. de Bivort, “The Social Scaling of Stress-Sensitivity: Understanding the Impacts of Pesticide Exposure and Temperature Stress in Bumblebee Colonies,” Entomological Society of America Entomology 2019, St. Louis, MO, Nov 2019.
70. **C. V. Cook\*** and **A. N. Ford Versypt**, “Mathematical Modeling of the Influence of Toxin Exposure on Rheumatoid Arthritis,” Niblack Research Scholars Symposium, Stillwater, OK, Sep 2019.
69. **A. N. Ford Versypt**, J. J. Versypt, and H. Gappa-Fahlenkamp, “University-Led Engineering Outreach to Adults: Public Engagement and Senior Adult Initiatives,” ASEE Midwest Section Conference, Wichita, KS, Sep 2019.
68. **A. N. Ford Versypt**, “An Interdisciplinary Elective Course to Build Computational Skills for Mathematical Modeling in Science and Engineering,” ASEE Annual Conference, Tampa, FL, Jun 2019.
67. **C. V. Eastep+** and **A. N. Ford Versypt**, “Mathematical Modeling of the Influence of Toxin Exposure on Rheumatoid Arthritis,” Research Day at the Capitol, Oklahoma City, OK, Mar 2019.
66. **A. N. Ford Versypt**, “Systems Biomedicine and Pharmaceuticals: Mathematical Modeling of Tissues and Treatments,” OSU AIChE Student Chapter Academic Speaker Meeting, Stillwater, OK, Nov 2018.
65. **C. V. Eastep+** and **A. N. Ford Versypt**, “Mathematical Modeling of the Influence of Toxin Exposure on Rheumatoid Arthritis,” Oklahoma Louis Stokes Alliance for Minority Participation Scholars (OK-LSAMP) Symposium, Stillwater, OK, Nov 2018.
64. M. R. Pilvankar\*, S. R. Ruggiero\*, A. D. Bucher+, and **A. N. Ford Versypt**, “Multiscale Computational Modeling of Renal Intercellular Cross-Talk at the Onset of Diabetic Kidney Disease,” AIChE Annual Meeting, Pittsburgh, PA, Nov 2018, **Applied Mathematics and Numerical Analysis Area Plenary, invited.**
63. M. R. Pilvankar\*, H. L. Yong+, and **A. N. Ford Versypt**, “Modeling Pharmaceutical Inhibition of Glucose-Stimulated Renin-Angiotensin System in Kidneys,” Biology and Medicine through Mathematics Conference, Richmond, VA, May 2018.
62. M. R. Pilvankar\*, H. L. Yong+, and **A. N. Ford Versypt**, “Modeling Pharmaceutical Inhibition of Glucose-Stimulated Renin-Angiotensin System in Kidneys,” Biology and Medicine through Mathematics Conference, Richmond, VA, May 2018.
61. **M. R. Pilvankar\***, H. L. Yong+, and **A. N. Ford Versypt**, “Mathematical Modeling of Renin-Angiotensin-System in Kidney Cells to Study Glucose-Stimulated Toxicity,” Interdisciplinary Toxicology Symposium, Stillwater, OK, Feb 2018.
60. **Y. T. Nguyen\***, A. Zornes+, and **A. N. Ford Versypt**, “Modeling of Extracellular Matrix Degradation in a Metastatic Tumor Microenvironment Using CompuCell3D,” Women in Engineering Local Conference, Tulsa, OK, Feb 2018.
59. S. M. Ruggiero\*, M. R. Pilvankar\*, and **A. N. Ford Versypt**, “Computational Modeling of Tuberculosis Granuloma Activation,” AIChE Annual Meeting, Minneapolis, MN, Oct 2017.
58. M. R. Pilvankar\*, H. L. Yong+, and **A. N. Ford Versypt**, “A PK/PD Model of ACE Inhibition in Kidney Cells for Treatment of Diabetic Tissue Damage,” AIChE Annual Meeting, Minneapolis, MN, Oct 2017.
57. **A. N. Ford Versypt**, “Introduction to Agent-Based Modeling,” REU Program Seminar, South Dakota School of Mines & Technology, Webinar, Jul 2017.
56. G. K. Harrell+, A. N. McPeak+, and **A. N. Ford Versypt**, “A Pharmacokinetic Simulation-Based Module to Introduce Mass Balances and Chemical Engineering Design Concepts to Engineering Freshmen,” ASEE Annual Conference, Columbus, OH, Jun 2017.
55. **A. N. Ford Versypt**, “Self-Reflection Assignments for Evaluating Non-Technical Skills and Setting Goals for Professional Development,” ASEE Annual Conference, Columbus, OH, Jun 2017.
54. S. M. Ruggiero\*, M. R. Pilvankar\*, and **A. N. Ford Versypt**, “Dynamic Modeling of Tuberculosis Granuloma Activation,” SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, May 2017.
53. S. M. Ruggiero\*, M. R. Pilvankar\*, and **A. N. Ford Versypt**, “Computational Modeling of the Transition from Latent to Active Tuberculosis,” Oklahoma Center for Respiratory Infectious Diseases Annual Retreat, Stillwater, OK, Apr 2017.
52. **J. I. Lane+** and **A. N. Ford Versypt**, “Mathematical Modeling of Cannabinoid Pharmacokinetic and Predictive Functions,” AIChE Mid-America Student Regional Conference, Tulsa, OK, Apr 2017. **2<sup>nd</sup> place.**
51. **M. A. Higgins+**, M. R. Pilvankar\*, and **A. N. Ford Versypt**, “Mathematical Modeling of Podocytes in Diabetic Kidney Disease,” AIChE Mid-America Student Regional Conference, Tulsa, OK, Apr 2017.
50. **M. R. Pilvankar\***, M. A. Higgins+, and **A. N. Ford Versypt**, “Mathematical Modeling of Glucose Dependent Renin-Angiotensin System in Podocytes in Diabetic Kidney Disease,” Joint Mathematics Meetings, Atlanta, GA, Jan 2017.

49. **A. N. Ford Versypt**, “Self-Reflection Assignments for Evaluating Non-Technical Skills and Setting Goals for Professional Development,” AIChE Annual Meeting, San Francisco, CA, Nov 2016.
48. G. K. Harrell+, A. N. McPeak+, and **A. N. Ford Versypt**, “An Educational MATLAB App for Pharmacokinetic/Pharmacodynamic Modeling of ACE-Inhibition,” AIChE Annual Meeting, San Francisco, CA, Nov 2016.
47. **M. R. Pilvankar\***, M. A. Higgins+, and **A. N. Ford Versypt**, “Parameter Estimation for Sparse Biological Data: Glucose-Dependence of Renin-Angiotensin System in Podocytes Cells during Diabetic Kidney Disease,” AIChE Annual Meeting, San Francisco, CA, Nov 2016.
46. **M. A. Higgins+**, M. R. Pilvankar\*, and **A. N. Ford Versypt**, “Mathematical Modeling of Podocytes in Diabetic Kidney Disease,” AIChE Annual Student Conference Undergraduate Research Forum, San Francisco, CA, Nov 2016.
45. **J. I. Lane+** and **A. N. Ford Versypt**, “Cannabinoid Pharmacokinetic Modeling,” National Institute for Mathematical and Biological Synthesis Undergraduate Research Conference, Knoxville, TN, Oct 2016.
44. M. R. Pilvankar\*, M. A. Higgins+, and **A. N. Ford Versypt**, “Mathematical Modeling of Glucose Sensitivity of Intracellular Renin-Angiotensin System in Podocytes,” Targeting Inflammation and Podocytopathy in Chronic Kidney Disease, New York Academy of Sciences, New York, NY, Sep 2016.
43. M. R. Pilvankar\*, M. A. Higgins+, and **A. N. Ford Versypt**, “Mathematical Modeling of Podocytes in Diabetic Kidney Disease,” SIAM Conference on the Life Sciences, Boston, MA, Jul 2016.
42. K. Gumte\* and **A. N. Ford Versypt**, “Mathematical Modeling of the Extracellular Matrix in Cancer Metastasis,” AIChE Annual Meeting, Salt Lake City, UT, Nov 2015.
41. M. A. Higgins+, M. Pilvankar\*, and **A. N. Ford Versypt**, “Mathematical Modeling of Podocytes in Diabetic Kidney Disease,” AIChE Annual Meeting, Salt Lake City, UT, Nov 2015.
40. **A. N. Ford Versypt**, “Systems Biomedicine & Pharmaceuticals,” CEAT Research Seminar Series, OSU, Stillwater, OK, Oct 2015.
39. **A. N. Ford Versypt**, “Mathematical Modeling of Podocytes in Diabetic Kidney Disease,” Harold Hamm Diabetes Center Research Symposium, Oklahoma City, OK, Oct 2015.
38. **A. N. Ford Versypt**, “Systems Biomedicine & Pharmaceuticals,” Process Systems Engineering Laboratory, MIT, Cambridge, MA, Aug 2015.
37. **A. N. Ford Versypt**, “Systems Biomedicine & Pharmaceuticals,” SMB Annual Meeting, Atlanta, GA, Jun 2015.
36. **A. N. Ford Versypt**, J. C. Arciero, L. Ellwein, E. Makrides, and A. T. Layton, “Modeling Autoregulation in the Kidney,” SMB Annual Meeting, Atlanta, GA, Jun 2015.
35. **M. Pilvankar\*** and **A. N. Ford Versypt**, “Mathematical Modeling of Biodistribution of Polymer Nanoparticles,” American Society of Mechanical Engineers Oklahoma Section Symposium, Stillwater, OK, Apr 2015.
34. **K. Gumte\*** and **A. N. Ford Versypt**, “Mathematical Modeling of the Extracellular Matrix in Cancer Metastasis,” OSU Research Symposium, Stillwater, OK, Feb 2015.
33. **M. Pilvankar\*** and **A. N. Ford Versypt**, “Mathematical Modeling of Biodistribution of Polymer Nanoparticles,” OSU Research Symposium, Stillwater, OK, Feb 2015.
32. **A. N. Ford Versypt**, J. C. Arciero, L. Ellwein, E. Makrides, and A. T. Layton, “Modeling Blood Flow Control in the Kidney,” AIChE Annual Meeting, Atlanta, GA, Nov 2014.
31. **A. N. Ford Versypt**, J. C. Arciero, L. Ellwein, E. Makrides, and A. T. Layton, “Modeling Blood Flow Control in the Kidney,” BMES Annual Meeting, San Antonio, TX, Oct 2014.
30. **A. N. Ford Versypt** and R. D. Braatz, “Analysis of Finite Difference Schemes for Diffusion in Spheres with Variable Diffusivity,” SIAM Annual Meeting, Chicago, IL, Jul 2014.
29. **A. N. Ford Versypt**, “Mathematical Modeling of Pharmaceuticals: Predictive Design for Better Medicines,” Molecular Pharmacology and Chemistry Program, Memorial Sloan Kettering Cancer Center, New York, NY, Apr 2014.
28. **A. N. Ford Versypt**, D. W. Pack, and R. D. Braatz, “Mechanistic Modeling of PLGA Microsphere Drug Delivery: Analytical Autocatalytic Degradation of Polymer and Hindered Diffusion of Drug,” AIChE Annual Meeting, San Francisco, CA, Nov 2013.
27. **A. N. Ford Versypt** and R. D. Braatz, “Analysis of Finite Difference Schemes for Diffusion in Spheres with Variable Diffusivity,” AIChE Annual Meeting, San Francisco, CA, Nov 2013.
26. **A. Mesbah**, **A. N. Ford Versypt**, X. Zhu, and R. D. Braatz, “Nonlinear Model Predictive Control for a Continuous Pharmaceutical Manufacturing System: A Comparison of Control Strategies for a Thin-Film Formation Process,” AIChE Annual Meeting, San Francisco, CA, Nov 2013.
25. **A. T. Layton**, J. Arciero, L. Ellwein, **A. N. Ford Versypt**, and E. Makrides, “Modeling Autoregulation in the Kidney,” Research Collaboration Workshop for Women in Applied Mathematics: Dynamical Systems with

Applications to Biology & Medicine, Institute for Mathematics and its Applications, University of Minnesota, Minneapolis, MN, Sep 2013.

24. **A. N. Ford Versypt**, “Mathematical Modeling of Pharmaceuticals: Predictive Design for Better Medicines,” Workshop for Young Researchers in Mathematical Biology, Mathematical Biosciences Institute, The Ohio State University, Columbus, OH, Aug 2013.
23. **A. Mesbah**, **A. N. Ford Versypt**, X. Zhu, and R. D. Braatz, “Nonlinear Model Predictive Control of a Thin-Film Manufacturing Process,” Process Systems Engineering Consortium Meeting, Cambridge, MA, Jun 2013.
22. J. J. Versypt and **A. N. Ford Versypt**, “Mapping Rural Students’ STEM Involvement: Case Studies of Chemical Engineering Undergraduate Enrollment in the States of Illinois and Kansas,” ASEE Annual Conference, Atlanta, GA, Jun 2013. **Recognized as outstanding paper by the ASEE Chemical Engineering Division Joseph J. Martin Award.**
21. **A. N. Ford Versypt**, D. W. Pack, and **R. D. Braatz**, “Modeling of Drug Delivery from PLGA Microspheres Using Reaction-Diffusion Equations with Hindered Diffusion,” AIChE Annual Meeting, Pittsburgh, PA, Oct 2012.
20. **J. J. Versypt** and **A. N. Ford Versypt**, “Mapping Rural Students’ STEM Participation,” UIUC College of Education Graduate Student Conference, Champaign, IL, Mar 2012.
19. **A. N. Ford Versypt**, D. W. Pack, and R. D. Braatz, “Modeling of Dynamic Hindered Diffusion of Drugs from Biodegradable PLGA Microspheres with Evolving Porous Structure,” AIChE Annual Meeting, Minneapolis, MN, Oct 2011.
18. **A. N. Ford**, D. W. Park, and R. D. Braatz, “Multi-Scale Modeling of PLGA Microparticle Drug Delivery Systems,” Process Systems Engineering Consortium Meeting, Amherst, MA, Jun 2011.
17. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Multi-Scale Modeling of PLGA Microparticle Drug Delivery Systems,” 21<sup>st</sup> European Symposium on Computer Aided Process Engineering (ESCAPE-21), Chalkidiki, Greece, May 2011.
16. **A. N. Ford** and **J. J. Versypt**, “Industry’s Unique Role in Increasing Rural Students in the STEM Pipeline,” AIChE Spring Meeting, Chicago, IL, Mar 2011.
15. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Design of PLGA Microparticle Drug Delivery Systems Using a Reaction-Diffusion Model,” AIChE Annual Meeting, Salt Lake City, UT, Nov 2010.
14. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Modeling of Controlled-Release Drug Delivery from Autocatalytically Degrading Polymer Microparticles,” UIUC Chemical and Biomolecular Engineering Graduate Research Symposium, Urbana, IL, Oct 2010.
13. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Design of PLGA Microparticle Drug Delivery Systems Using a Mechanistic Reaction-Diffusion Model,” DOE CSGF Annual Conference, Washington, DC, Jun 2010.
12. **A. N. Ford** and R. D. Braatz, “Design of PLGA Microparticle Drug Delivery Systems Using Mechanistic Reaction-Diffusion Model,” AIChE Annual Meeting, Nashville, TN, Nov 2009.
11. **A. N. Ford**, “Girl Scout STEM Workshop: Experience with 6th–10th Grade Girls in Rural Oklahoma,” AIChE Annual Meeting, Nashville, TN, Nov 2009. **Video and transcript featured on AIChE ChemE on Demand website.**
10. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Multiscale Modeling of Polymer Microsphere Drug Delivery,” Process Systems Engineering Consortium Meeting, Santa Barbara, CA, Mar 2009.
9. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Multiscale Modeling of Polymer Microsphere Drug Delivery,” AIChE Annual Meeting, Philadelphia, PA, Nov 2008.
8. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “A Mechanistic Modeling Approach to the Design and Evaluation of Polymeric Drug Delivery Systems,” AIChE Annual Meeting, Philadelphia, PA, Nov 2008.
7. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “A Mechanistic Modeling Approach to the Design and Evaluation of Polymeric Drug Delivery Systems,” UIUC Chemical and Biomolecular Engineering Graduate Research Symposium, Urbana, IL, Oct 2008.
6. **A. N. Ford** and R. D. Braatz, “Modeling Autocatalytic Controlled-Release Drug Delivery from PLGA Microspheres,” Process Systems Engineering Consortium Meeting, Amherst, MA, May 2008.
5. **R. D. Braatz**, P. D. Arendt, **A. N. Ford**, and D. W. Pack, “Design of Polymer Microparticles for Controlled Release,” Process Systems Engineering Consortium Meeting, Amherst, MA, May 2008.
4. **M. Kishida**, **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Optimal Control of Cellular Uptake Rate in Tissue Scaffolds,” AIChE Annual Meeting, Salt Lake City, UT, Nov 2007.
3. **A. N. Ford** and **D. V. Papavassiliou**, “Simulations of Flow around Multiwall Carbon Nanotubes,” AIChE Annual Meeting, Cincinnati, OH, Nov 2005.
2. **A. N. Ford** and **D. V. Papavassiliou**, “Simulations of the Flow of Water around Carbon Nanotubes,” Undergraduate Research Day, University of Oklahoma Honors College, Norman, OK, Apr 2005.

1. **A. N. Ford** and D. V. Papavassiliou, “Simulations of the Flow of Water around Carbon Nanotubes,” AIChE Mid-America Student Regional Conference, Manhattan, KS, Apr 2005. **5<sup>th</sup> place**.

## POSTER PRESENTATIONS

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*Presenter underlined. Symbols: graduate advisee (\*), undergraduate advisee (+), postdoctoral advisee (\*\*)*

130. E. A. Chacin Ruiz\*, K. E. Swindle-Reilly, and **A. N. Ford Versypt**, “Mathematical Modeling of Drug Release from Bi-Layered Polymer Capsules in the Eye,” AIChE Annual Meeting, Phoenix, AZ, Nov 2022 (abstract accepted).
129. T. O. Benson\* and **A. N. Ford Versypt**, “A Multiscale Agent-Based In Silico Model of Cancer Cell Migration and Invasion Phenotype,” Systems Approaches to Cancer Biology, Woods Hole, MA, Oct 2022 (abstract submitted).
128. M. A. Islam\*\* and **A. N. Ford Versypt**, “Modeling the Progression of Fibrosis with Dysregulation of TGF-beta in COVID19 Patients,” The Many Faces of Fibroblasts Workshop, American Society for Matrix Biology, Charlottesville, VA, Oct 2022 (abstract submitted).
127. M. A. Islam\*\* and **A. N. Ford Versypt**, “Modeling the Progression of Fibrosis with Dysregulation of TGF-beta in COVID19 Patients,” BMES Annual Meeting, San Antonio, TX, Oct 2022 (abstract accepted).
126. T. O. Benson\* and **A. N. Ford Versypt**, “Data Analytics for Computational Multiscale Modeling of Metastatic Cancer Migration,” SIAM Conference on Mathematics of Data Science, San Diego, CA, Sep 2022 (abstract submitted).
125. C. V. Cook\*, B. J. Smith, and **A. N. Ford Versypt**, “Short Chain Fatty Acid Influence on Normal and Estrogen Deficient Bone Remodeling,” FOSBE, Cambridge, MA, Aug 2022 (abstract accepted).
124. M. A. Islam\*\* and **A. N. Ford Versypt**, “Modeling the Progression of Fibrosis with Dysregulation of TGF-beta in COVID19 Patients,” FOSBE, Cambridge, MA, Aug 2022 (abstract accepted).
123. K. Patidar\* and **A. N. Ford Versypt**, “A Logic-Based Modeling Study of Glucose Mediated Immune Response in Diabetic Kidney Disease,” FOSBE, Cambridge, MA, Aug 2022 (abstract accepted).
122. H. Y. Thomas\* and **A. N. Ford Versypt**, “Collagen Deposition in Diabetic Kidney Disease Boosts Intercellular Signaling: A Mathematical Model,” FOSBE, Cambridge, MA, Aug 2022 (abstract accepted).
121. Y. T. Nguyen Edalogo\*, T. O. Benson\*, and **A. N. Ford Versypt**, “A Hybrid CompuCell3D Model of Metastatic Cancer Migration in a Remodeling Extracellular Matrix,” TERMIS-AM, Toronto, Canada, Jul 2022.
120. M. A. Islam\*\* and **A. N. Ford Versypt**, “Modeling the Progression of Fibrosis with Dysregulation of TGF-beta in COVID19 Patients,” International Conference on Systems Biology of Human Diseases, Nashville, TN, Jun 2022.
119. T. O. Benson\* and **A. N. Ford Versypt**, “A Multiscale Agent-Based In Silico Model of Cancer Cell Migration and Invasion Phenotype,” Institute for Artificial Intelligence and Data Science Days, Buffalo, NY, Apr 2022.
118. K. Patidar\* and **A. N. Ford Versypt**, “A Logic-Based Modeling Study of Glucose Mediated Immune Response in Diabetic Kidney Disease,” UB SIAM Applied Math Seminar, Virtual, Apr 2022.
117. H. Y. Thomas\* and **A. N. Ford Versypt**, “Predicting Therapeutic Efficacy on Renal Fibrosis in Diabetic Mice: A Mathematical Model,” NOBCChE Collaborative Conference, Pittsburgh, PA, Mar 2022.
116. K. Patidar\* and **A. N. Ford Versypt**, “A Logic-Based Modeling Study of the Immune Response Under High Glucose Conditions in Diabetic Kidney Disease,” AIChE Annual Meeting, Boston, MA, Nov 2021.
115. **A. N. Ford Versypt**, S. L. Carpenter+, T. L. Adkins II+, T. A. Sperry, and Y. Feng, “Kidney and Lung Activities for Biomedical Engineering Major at Grandparent University,” BMES Annual Meeting, Oct, Orlando, FL, Oct 2021.
114. M. A. Islam\*\* and **A. N. Ford Versypt**, “Modeling the Progression of Fibrosis with Dysregulation of ACE2 in COVID19 Patients,” BMES Annual Meeting, Orlando, FL, Oct 2021 (*virtual poster*).
113. G. Kimmerer+ and **A. N. Ford Versypt**, “Modeling Angiotensin Signaling in Diabetic Kidney Disease Using Logic-Based Approaches,” BMES Annual Meeting, Orlando, FL, Oct 2021.
112. H. Y. Thomas\* and **A. N. Ford Versypt**, “Excess Collagen Deposition in Diabetic Kidney Disease Enhances Cellular Communication: A Mathematical Model,” Summer Biomechanics, Bioengineering, and Biotransport Conference, Virtual, Jun 2021.
111. B. Bartlett+, Y. Feng, C. A. Fromen, and **A. N. Ford Versypt**, “Computer Modeling of Aerosol Particle Transport through Lung Mucosa,” OSU Undergraduate Research Symposium, Virtual, Apr 2021.
110. H. Y. Thomas\* and **A. N. Ford Versypt**, “Modeling the Spatial Distribution of Collagen in Mesangial Fibrosis during Diabetic Kidney Disease,” Regenerative Engineering Symposium, Virtual, Dec 2020.
109. C. Strickling+ and **A. N. Ford Versypt**, “Modeling Transport of Blood Plasma and Solutes within the Kidney Glomerulus,” AIChE Annual Student Conference, Virtual, Nov 2020. Archived recording: [https://youtu.be/d\\_ky7Tk3iZw](https://youtu.be/d_ky7Tk3iZw)

108. K. Lane<sup>+</sup> and **A. N. Ford Versypt**, “A Mathematical Model of Pulmonary Edema Due to COVID-19,” AIChE Annual Student Conference, Virtual, Nov 2020. Archived recording: <https://youtu.be/Vihn5ChJ8ts>
107. S. L. Carpenter<sup>+</sup>, K. E. Swindle-Reilly, and **A. N. Ford Versypt**, “Modeling Controlled Release Drug Delivery through Core-Shell Microparticles Using Finite Differences for Spatially Dependent Diffusivity,” AIChE Annual Student Conference, Virtual, Nov 2020. Archived recording: <https://youtu.be/1kw8Y799IWk>
106. D. H. Mullins<sup>\*</sup> and **A. N. Ford Versypt**, “A Mathematical Model of the Glomerular Filtration Barrier in Diabetic Kidney Disease,” AIChE Annual Meeting, Virtual, Nov 2020. Archived recording: <https://youtu.be/yRpNqHdwyeE>
105. D. H. Mullins<sup>\*</sup> and **A. N. Ford Versypt**, “A Mathematical Model of the Glomerular Filtration Barrier Damage in Diabetic Kidney Disease,” Harold Hamm Diabetes Center Research Symposium, Virtual, Nov 2020.
104. T. O. Benson<sup>\*</sup> and **A. N. Ford Versypt**, “Validation of an In Silico Model of Metastatic Cancer Cell Migration through a Remodeling Extracellular Matrix,” Systems Approaches to Cancer Biology, Virtual, Nov 2020.
103. S. L. Carpenter<sup>+</sup>, K. E. Swindle-Reilly, and **A. N. Ford Versypt**, “Modeling Controlled Release Drug Delivery through Core-Shell Microparticles Using Finite Differences for Spatially Dependent Diffusivity,” Undergraduate Research Conference at the Interface of Mathematics and Biology, National Institute for Mathematical and Biological Synthesis, Virtual, Oct 2020.
102. H. Y. Thomas<sup>\*</sup> and A. N. Ford Versypt, “Modeling the Spatial Distribution of Collagen in Mesangial Fibrosis during Diabetic Kidney Disease,” AfroBiotech Conference, Virtual, Oct 2020.
101. H. Y. Thomas<sup>\*</sup> and **A. N. Ford Versypt**, “Modeling Cellular Signaling and Mesangial Fibrosis during Diabetic Kidney Disease,” National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE) Conference, Virtual, Sep 2020.
100. M. A. Islam<sup>\*\*</sup>, C. V. Cook<sup>\*</sup>, B. J. Smith, and **A. N. Ford Versypt**, “Computational Modeling of the Gut-Bone Axis and Implications of Butyrate Treatment on Osteoimmunology,” Virtual Physiological Human Conference, Virtual, Aug 2020.
99. H. Y. Thomas<sup>\*</sup> and **A. N. Ford Versypt**, “Modeling Cellular Signaling and Mesangial Fibrosis during Diabetic Kidney Disease,” SMB Annual Meeting, Virtual, Aug 2020.
98. C. V. Cook<sup>\*</sup>, M. A. Islam<sup>\*\*</sup>, B. J. Smith, and **A. N. Ford Versypt**, “Mathematical Modeling of the Relationship between T Cell Produced Wnt10b and the Bone Remodeling Cycle,” SMB Annual Meeting, Virtual, Aug 2020.
97. **A. N. Ford Versypt**, “Graphical User Interfaces as Chemical Engineering Educational Tools in University and Informal Learning Environments,” Coalition for Advancing Digital Research & Education Conference, Virtual, April 2020.
96. B. Bartlett<sup>+</sup>, Y. Feng, C. A. Fromen, and **A. N. Ford Versypt**, “Computer Modeling of Aerosol Diffusion through Lung Mucosa,” OSU Undergraduate Research Symposium, Stillwater, OK, Apr 2020 (*cancelled due to COVID-19, presented virtually to lab*).
95. C. Haug<sup>+</sup> and **A. N. Ford Versypt**, “Modeling the Controlled Release of Risperidone from PLGA Microsphere Formulations,” OSU Undergraduate Research Symposium, Stillwater, OK, Apr 2020 (*cancelled due to COVID-19, presented virtually to lab*).
94. M. Linna<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of Prostate Cancer Immunotherapy,” OSU Freshman Research Scholars Symposium, Stillwater, OK, Apr 2020 (*cancelled due to COVID-19, presented virtually to lab*).
93. K. N. White<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of Tumor Treatments and Application to Brain Immunotherapy,” OSU Freshman Research Scholars Symposium, Stillwater, OK, Apr 2020 (*cancelled due to COVID-19, presented virtually to lab*).
92. A. Wolfe<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of Melanoma Treatments and Its Applications to Skin Cancer Immunotherapy,” OSU Freshman Research Scholars Symposium, Stillwater, OK, Apr 2020 (*cancelled due to COVID-19, presented virtually to lab*).
91. A. D. Sartin<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of Mesangial Matrix Expansion in Diabetic Kidney Disease,” Research Day at the Capital, Oklahoma City, OK, Mar 2020 (selected as one of four representatives from OSU) (*cancelled due to COVID-19, presented virtually to lab*).
90. M. A. Islam<sup>\*\*</sup>, C. V. Cook, B. J. Smith, and **A. N. Ford Versypt**, “Computational Modeling of the Gut-Bone Axis and Implications of Butyrate Treatment on Osteoimmunology,” Multiscale Modeling Consortium Meeting, Interagency Modeling and Analysis Group, Virtual, Mar 2020.
89. **A. N. Ford Versypt**, M. R. Pilvankar<sup>\*</sup>, A. D. Sartin<sup>+</sup>, C. Streeter<sup>+</sup>, and S. M. Ruggiero<sup>\*</sup>, “Modeling Intraglomerular Transport in Diabetic Kidney Disease,” Harold Hamm Diabetes Center Research Symposium, Oklahoma City, OK, Nov 2019.
88. A. D. Sartin<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of Mesangial Cells in Diabetic Kidney Disease,” Harold Hamm Diabetes Center Research Symposium, Oklahoma City, OK, Nov 2019.

87. S. L. Carpenter<sup>+</sup> and **A. N. Ford Versypt**, “3D Printed Kidney Filters for Hands-On Learning,” AIChE Annual Student Conference, Orlando, FL, Nov 2019.
86. C. Streeter<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of Nephron Loss in Diabetic Kidney Disease,” Harold Hamm Diabetes Center Research Symposium, Oklahoma City, OK, Nov 2019.
85. S. M. Ruggiero<sup>\*</sup> and **A. N. Ford Versypt**, “SBMLtoODEpy: A Software Program for Converting SBML Models into ODE Models in Python,” AIChE Annual Meeting, Orlando, FL, Nov 2019.
84. B. Bartlett<sup>+</sup>, Y. Feng, C. A. Fromen, and **A. N. Ford Versypt**, “Computer Modeling of Aerosol Diffusion through Lung Mucosa,” AIChE Annual Student Conference, Orlando, FL, Nov 2019. **3<sup>rd</sup> Place in Computing, Simulation and Process Control III category.**
83. C. V. Cook<sup>\*</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of the Influence of Toxin Exposure on Rheumatoid Arthritis,” AIChE Annual Student Conference, Orlando, FL, Nov 2019. **2<sup>nd</sup> Place in Computing, Simulation and Process Control III category.**
82. C. Haug<sup>+</sup> and **A. N. Ford Versypt**, “Modeling the Controlled Release of Risperidone from PLGA Microsphere Formulations,” AIChE Annual Student Conference, Orlando, FL, Nov 2019.
81. K. Lane<sup>+</sup>, C. A. Fromen, and **A. N. Ford Versypt**, “A Systems Biology Model of Myeloid-Derived Suppressor Cells and Cancer Immunotherapy,” AIChE Annual Student Conference, Orlando, FL, Nov 2019.
80. A. D. Sartin<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of Mesangial Cells in Diabetic Kidney Disease,” AIChE Annual Student Conference, Orlando, FL, Nov 2019.
79. C. Streeter<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of Nephron Loss in Diabetic Kidney Disease,” AIChE Annual Student Conference, Orlando, FL, Nov 2019.
78. **A. N. Ford Versypt**, M. R. Pilvankar<sup>\*</sup>, A. D. Sartin<sup>+</sup>, C. Streeter<sup>+</sup>, and S. M. Ruggiero<sup>\*</sup>, “Modeling Intraglomerular Transport in Diabetic Kidney Disease,” Integrating Machine Learning with Multiscale Modeling for Biomedical, Biological, and Behavioral Systems Conference, Interagency Modeling and Analysis Group, Bethesda, MD, Oct 2019.
77. Y. T. Nguyen Edalgo<sup>\*</sup>, A. L. Zornes<sup>+</sup>, and **A. N. Ford Versypt**, “A Hybrid Discrete-Continuous Model of Metastatic Cancer Cell Migration through a Remodeling Extracellular Matrix,” BMES Annual Meeting, Philadelphia, PA, Oct 2019.
76. S. M. Ruggiero<sup>\*</sup> and **A. N. Ford Versypt**, “SBMLtoODEpy: A Software Program for Converting SBML Models into ODE Models in Python,” Research Symposium in Biological Sciences, OSU Biochemistry and Molecular Biology Graduate Student Association, Stillwater, OK, Sep 2019.
75. B. Bartlett<sup>+</sup>, Y. Feng, C. A. Fromen, and **A. N. Ford Versypt**, “Computer Modeling of Aerosol Diffusion through Lung Mucosa,” Research Symposium in Biological Sciences, OSU Biochemistry and Molecular Biology Graduate Student Association, Stillwater, OK, Sep 2019. **2<sup>nd</sup> Place Undergraduate Poster Presentation.**
74. C. Haug<sup>+</sup> and **A. N. Ford Versypt**, “Modeling the Controlled Release of Risperidone from PLGA Microsphere Formulations,” Research Symposium in Biological Sciences, OSU Biochemistry and Molecular Biology Graduate Student Association, Stillwater, OK, Sep 2019.
73. K. Lane<sup>+</sup>, Y. Feng, C. A. Fromen, and **A. N. Ford Versypt**, “Myeloid-Derived Suppressor Cells and Cancer Immunotherapy: Dosing Dynamics via MATLAB Simulation,” Research Symposium in Biological Sciences, OSU Biochemistry and Molecular Biology Graduate Student Association, Stillwater, OK, Sep 2019. **4<sup>th</sup> Place Undergraduate Poster Presentation.**
72. A. D. Sartin<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of Mesangial Matrix Expansion in Diabetic Kidney Disease,” Research Symposium in Biological Sciences, OSU Biochemistry and Molecular Biology Graduate Student Association, Stillwater, OK, Sep 2019.
71. C. Streeter<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of Nephron Loss in Diabetic Kidney Disease,” Research Symposium in Biological Sciences, OSU Biochemistry and Molecular Biology Graduate Student Association, Stillwater, OK, Sep 2019. **3<sup>rd</sup> Place Undergraduate Poster Presentation.**
70. **A. N. Ford Versypt**, M. R. Pilvankar<sup>\*</sup>, A. D. Sartin<sup>+</sup>, C. Streeter<sup>+</sup>, and S. M. Ruggiero<sup>\*</sup>, “Modeling Intraglomerular Transport in Diabetic Kidney Disease,” American Physiological Society Interface of Mathematical Models and Experimental Biology: Role of the Microvasculature Conference, Scottsdale, AZ, Sep 2019.
69. **A. N. Ford Versypt**, “Graphical User Interfaces as Chemical Engineering Educational Tools in University and Informal Learning Environments,” Computer Aids for Chemical Engineering Conference on the Future of Cyber-Assisted Chemical Engineering Education, Breckenridge, CO, Jul 2019.
68. B. Bartlett<sup>+</sup>, Y. Feng, C. A. Fromen, and **A. N. Ford Versypt**, “Computer Modeling of Aerosol Diffusion through Lung Mucosa,” OSU Freshman Research Scholars Symposium, Stillwater, OK, Apr 2019.

67. N. Evans<sup>+</sup>, Y. Feng, C. A. Fromen, and **A. N. Ford Versypt**, “Dendritic Cell Therapies for Cancer,” OSU Freshman Research Scholars Symposium, Stillwater, OK, Apr 2019.
66. K. Lane<sup>+</sup>, Y. Feng, C. A. Fromen, and **A. N. Ford Versypt**, “Myeloid-Derived Suppressor Cells and Cancer Immunotherapy: Dosing Dynamics via MATLAB Simulation,” OSU Freshman Research Scholars Symposium, Stillwater, OK, Apr 2019.
65. I. Posey<sup>+</sup>, Y. Feng, C. A. Fromen, and **A. N. Ford Versypt**, “Utilization of Pharmacokinetic Modeling for Drug Delivery in the Lung via an Interactive MATLAB Simulation,” OSU Freshman Research Scholars Symposium, Stillwater, OK, Apr 2019.
64. C. V. Eastep<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of the Influence of Toxin Exposure on Rheumatoid Arthritis,” OSU Women’s Faculty Council Poster Symposium, Stillwater, OK, Apr 2019.
63. C. V. Eastep<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of the Influence of Toxin Exposure on Rheumatoid Arthritis,” Research Day at the Capitol, Oklahoma City, OK, Mar 2019 (invited among 22 undergraduates from higher education institutions across the state and among 4 from OSU).
62. C. Streeter<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of Nephron Loss in Diabetic Kidney Disease,” Oklahoma Research Day, Weatherford, OK, Mar 2019.
61. A. D. Sartin<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of Mesangial Matrix Expansion in Diabetic Kidney Disease,” Oklahoma Research Day, Weatherford, OK, Mar 2019.
60. C. V. Eastep<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of the Influence of Toxin Exposure on Rheumatoid Arthritis,” OSU Researchers’ Reception, Stillwater, OK, Feb 2019.
59. Y. T. Nguyen\* and **A. N. Ford Versypt**, “A Hybrid CompuCell3D Model of Cancer Cell Migration in a Metastatic Extracellular Matrix,” Stephenson Cancer Center Cancer Research Symposium, Oklahoma City, OK, Feb 2019.
58. M. R. Pilvankar\* and **A. N. Ford Versypt**, “A PK/PD Model of ACE Inhibition in Renal Cells in Diabetic Kidney Disease,” Harold Hamm Diabetes Center Symposium, Oklahoma City, OK, Nov 2018.
57. Y. T. Nguyen\* and **A. N. Ford Versypt**, “A Hybrid CompuCell3D Model of Cancer Cell Migration in a Metastatic Extracellular Matrix,” Systems Approaches to Cancer Biology Conference, Woods Hole, MA, Nov 2018.
56. C. V. Eastep<sup>+</sup> and **A. N. Ford Versypt**, “Mathematical Modeling of the Influence of Toxin Exposure on Rheumatoid Arthritis,” AIChE Annual Student Conference, Pittsburgh, PA, Oct 2018.
55. M. R. Pilvankar\*, H. L. Yong<sup>+</sup>, and **A. N. Ford Versypt**, “A PKPD Model of ACE Inhibition of Local RAS in Kidney Cells,” Foundations of Systems Biology in Engineering Conference, Chicago, IL, Aug 2018.
54. M. R. Pilvankar\*, H. L. Yong<sup>+</sup>, and **A. N. Ford Versypt**, “Mathematical Modeling of Renin-Angiotensin-System in Kidney Cells to Study Glucose-Stimulated Toxicity,” Chronic Kidney Disease Drug Development Summit, Boston, MA, May 2018.
53. M. R. Pilvankar\*, H. L. Yong<sup>+</sup>, and **A. N. Ford Versypt**, “Mathematical Modeling of Renin-Angiotensin-System in Kidney Cells to Study Glucose-Stimulated Toxicity,” OSU Graduate Research Gala, Stillwater, OK, Apr 2018.
52. A. D. Bucher<sup>+</sup> and **A. N. Ford Versypt**, “Computational Modeling of Mesangial Cell Injury in Diabetic Kidney Disease,” AIChE Mid-America Student Regional Conference, Stillwater, OK, Apr 2018.
51. C. V. Eastep<sup>+</sup> and **A. N. Ford Versypt**, “Expansion and Use of an Educational Pharmacokinetic Simulation-Based Module in a High School to College Transition Program,” AIChE Mid-America Student Regional Conference, Stillwater, OK, Apr 2018.
50. K. Jenkins<sup>+</sup> and **A. N. Ford Versypt**, “Digital Tools for Modeling Pharmacokinetics of Treatments for Diabetic Kidney Disease,” OSU Freshman Research Scholars Symposium, Stillwater, OK, Apr 2018.
49. L. Cordier<sup>+</sup> and **A. N. Ford Versypt**, “Digital Tools for Modeling Drug Release from Biodegradable Biomaterials,” OSU Freshman Research Scholars Symposium, Stillwater, OK, Apr 2018.
48. S. M. Ruggiero\* and **A. N. Ford Versypt**, “Procedural Generation for Automated CompuCell3d Workflows for Kidney Tissue Modeling,” Coalition for Advancing Digital Research & Education Conference, Stillwater, OK, Apr 2018.
47. C. V. Eastep<sup>+</sup> and **A. N. Ford Versypt**, “Expansion and Use of an Educational Pharmacokinetic Simulation-Based Module in a High School to College Transition Program,” Coalition for Advancing Digital Research & Education Conference, Stillwater, OK, Apr 2018.
46. M. R. Pilvankar\*, H. L. Yong<sup>+</sup>, and **A. N. Ford Versypt**, “Mathematical Modeling of Renin-Angiotensin-System in Kidney Cells to Study Glucose-Stimulated Toxicity,” Interdisciplinary Toxicology Symposium, Stillwater, OK, Feb 2018.
45. Y. T. Nguyen\*, A. Zornes<sup>+</sup>, and **A. N. Ford Versypt**, “Modeling of Extracellular Matrix Degradation in a Metastatic Tumor Microenvironment Using CompuCell3D,” Women in Engineering Local Conference, Tulsa, OK, Feb 2018.

44. S. M. Ruggiero\*, M. R. Pilvankar\*, and **A. N. Ford Versypt**, “Computational Modeling of Tuberculosis Granuloma Activation,” BMES Annual Meeting, Phoenix, AZ, Oct 2017.
43. **Y. T. Nguyen\***, A. Zornes+, and **A. N. Ford Versypt**, “Modeling of Extracellular Matrix Degradation in a Metastatic Tumor Microenvironment Using CompuCell3D,” BMES Annual Meeting, Phoenix, AZ, Oct 2017.
42. **C. V. Eastep+** and **A. N. Ford Versypt**, “Expansion and Use of an Educational Pharmacokinetic Simulation-Based Module in a High School to College Transition Program,” ASEE Midwest Section Conference, Stillwater, OK, Sep 2017.
41. **Y. T. Nguyen\***, A. Zornes+, and **A. N. Ford Versypt**, “Modeling of Extracellular Matrix Degradation in a Metastatic Tumor Microenvironment Using CompuCell3D,” ASEE Midwest Section Conference, Stillwater, OK, Sep 2017.
40. **S. M. Ruggiero\***, M. R. Pilvankar\*, and **A. N. Ford Versypt**, “Computational Modeling of Tuberculosis Granuloma Activation,” ASEE Midwest Section Conference, Stillwater, OK, Sep 2017.
39. **M. R. Pilvankar\***, M. A. Higgins+, and **A. N. Ford Versypt**, “Glucose-Dependence of Renin-Angiotensin System in Podocytes Cells During Diabetic Kidney Disease,” ASEE Midwest Section Conference, Stillwater, OK, Sep 2017. **3<sup>rd</sup> place poster.**
38. **Y. T. Nguyen\***, A. Zornes+, and **A. N. Ford Versypt**, “Modeling of Extracellular Matrix Degradation in a Metastatic Tumor Microenvironment Using CompuCell3D,” Research Symposium in Biological Sciences, OSU Biochemistry and Molecular Biology Graduate Student Association, Stillwater, OK, Sep 2017, **2<sup>nd</sup> place poster.**
37. **A. N. Ford Versypt**, “Self-Evaluation and Reflection for Professional Development of Chemical Engineering Students,” ASEE Chemical Engineering Summer School, Raleigh, NC, Jul 2017, **Poster Award.**
36. **Y. T. Nguyen+**, A. Zornes+, and **A. N. Ford Versypt**, “Computational Modeling of Extracellular Matrix Degradation in Tumor Microenvironment using CompuCell3D,” Coalition for Advancing Digital Research & Education Conference, Stillwater, OK, Apr 2017.
35. **S. M. Ruggiero\***, M. R. Pilvankar\*, and **A. N. Ford Versypt**, “Computational Modeling of Tuberculosis Granuloma Activation,” Coalition for Advancing Digital Research & Education Conference, Stillwater, OK, Apr 2017.
34. **M. R. Pilvankar\***, M. A. Higgins+, and **A. N. Ford Versypt**, “Glucose-Dependence of Renin-Angiotensin System in Podocytes Cells During Diabetic Kidney Disease,” Coalition for Advancing Digital Research & Education Conference, Stillwater, OK, Apr 2017.
33. **M. R. Pilvankar\***, S. M. Ruggiero\*, and **A. N. Ford Versypt**, “Computational Modeling of Tuberculosis Granuloma Activation,” Oklahoma Center for Respiratory Infectious Diseases Annual Retreat, Stillwater, OK, Apr 2017.
32. **Y. T. Nguyen+**, A. Zornes+, and **A. N. Ford Versypt**, “Computational Module and Simulation Development for the Remodeling of Extracellular Matrix in Tumor Microenvironment,” AIChE Mid-America Student Regional Conference, Tulsa, OK, Apr 2017.
31. **M. R. Pilvankar\***, M. A. Higgins+, and **A. N. Ford Versypt**, “Glucose-Dependence of Renin-Angiotensin System in Podocytes Cells During Diabetic Kidney Disease,” SIAM Conference on Computational Science and Engineering, Atlanta, GA, Mar 2017. **Best Posterium Award.**
30. **M. R. Pilvankar\***, S. M. Ruggiero\*, and **A. N. Ford Versypt**, “Computational Modeling of Tuberculosis Granuloma Activation,” AIChE Annual Meeting, San Francisco, CA, Nov 2016.
29. **M. R. Pilvankar\***, M. A. Higgins+, and **A. N. Ford Versypt**, “Glucose-Dependence of Renin-Angiotensin System in Podocytes Cells During Diabetic Kidney Disease,” Harold Hamm Diabetes Center Research Symposium, Oklahoma City, OK, Oct 2016. **Gold Poster Prize (1<sup>st</sup> place) for Graduate Student & Postdoc Category.**
28. **M. R. Pilvankar\***, M. A. Higgins+, and **A. N. Ford Versypt**, “Glucose-Dependence of Renin-Angiotensin System in Podocytes Cells During Diabetic Kidney Disease,” BMES Annual Meeting, Minneapolis, MN, Oct 2016.
27. G. K. Harrell+, A. N. McPeak+, and **A. N. Ford Versypt**, “Chemical and Biomedical Engineering Educational MATLAB App for PK/PD Modeling of ACE-Inhibition,” BMES Annual Meeting, Minneapolis, MN, Oct 2016.
26. **M. R. Pilvankar\***, M. A. Higgins+, and **A. N. Ford Versypt**, “Mathematical Modeling of Glucose Sensitivity of Intracellular Renin-Angiotensin System in Podocytes,” Targeting Inflammation and Podocytopathy in Chronic Kidney Disease, New York Academy of Sciences, New York, NY, Sep 2016. **Outstanding Poster Prize.**
25. **M. A. Higgins+**, M. R. Pilvankar\*, and **A. N. Ford Versypt**, “Mathematical Modeling of Podocytes in Diabetic Kidney Disease,” OSU Undergraduate Research Symposium, Stillwater, OK, Apr 2016.
24. **I. Khan+**, A. Ranjan, and **A. N. Ford Versypt**, “Computational Fluid Dynamics Simulation of Blood Clot Mechanical Deformation,” OSU Undergraduate Research Symposium, Stillwater, OK, Apr 2016.
23. **G. K. Harrell+**, **A. N. McPeak+**, and **A. N. Ford Versypt**, “Utilization of Pharmacokinetic Modeling for Chemical Engineering Education via an Interactive MATLAB Simulation,” AIChE Mid-America Student Regional Conference, Manhattan, KS, Apr 2016.

22. G. K. Harrell<sup>+</sup>, A. N. McPeak<sup>+</sup>, and **A. N. Ford Versypt**, “Utilization of Pharmacokinetic Modeling for Chemical Engineering Education via an Interactive MATLAB Simulation,” OSU Research Symposium, Stillwater, OK, Feb 2016. **1<sup>st</sup> place undergraduate poster in the Physical Sciences & Technology Division.**
21. M. A. Higgins<sup>+</sup>, M. R. Pilvankar<sup>\*</sup>, and **A. N. Ford Versypt**, “Mathematical Modeling of Podocytes in Diabetic Kidney Disease,” OSU Research Symposium, Stillwater, OK, Feb 2016. **3<sup>rd</sup> place undergraduate poster in the Physical Sciences & Technology Division.**
20. I. Khan<sup>+</sup>, A. Ranjan, and **A. N. Ford Versypt**, “Computational Fluid Dynamics Simulation of Blood Clot Mechanical Deformation,” AIChE Annual Student Conference, Salt Lake City, UT, Nov 2015.
19. **A. N. Ford Versypt**, M. A. Higgins<sup>+</sup>, and M. Pilvankar<sup>\*</sup>, “Mathematical Modeling of Podocytes in Diabetic Kidney Disease,” Harold Hamm Diabetes Center Research Symposium, Oklahoma City, OK, Oct 2015.
18. **A. N. Ford Versypt**, and R. D. Braatz, “A Reaction-Diffusion Model for Drug Delivery from PLGA Microspheres,” Foundations of Systems Biology in Engineering Conference, Boston, MA, Aug 2015.
17. **A. N. Ford Versypt**, “Systems Biomedicine & Pharmaceuticals,” From Computational Biophysics to Systems Biology Workshop, Oklahoma City, OK, May 2015.
16. **A. N. Ford Versypt**, J. Arciero, L. Ellwein, E. Makrides, and A. T. Layton, “Mathematical Modeling of Blood Flow Control in Healthy and Diabetic Kidneys,” Diabetic Kidney Disease: Drug Discovery and Clinical Development Challenge, New York Academy of Sciences, New York, NY, Dec 2014.
15. **A. N. Ford Versypt**, “Systems Biomedicine & Pharmaceuticals,” AIChE Annual Meeting, San Francisco, CA, Nov 2013.
14. C. Li, S. Sant, **A. N. Ford Versypt**, A. Khademhosseini, and R. L. Mass, “In Vitro Manipulation of a Morphogen Distribution in Early Odontogenesis,” International/American/Canadian Association for Dental Research General Session, Seattle, WA, Mar 2013.
13. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Modeling of Controlled-Release Drug Delivery from PLGA Microspheres,” MIT Polymer Day, Cambridge, MA, Mar 2013.
12. **A. N. Ford Versypt**, D. W. Pack, and R. D. Braatz, “Modeling of Controlled-Release Drug Delivery from Polymer Microspheres Using Reaction-Diffusion Equations with Hindered Diffusion,” SIAM Conference on the Life Sciences, San Diego, CA, Aug 2012.
11. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Mechanistic Modeling of PLGA Microparticle Drug Delivery Systems,” Controlled Release Society Illinois Student Chapter Symposium, Chicago, IL, May 2010.
10. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Mechanistic Modeling of PLGA Microparticle Drug Delivery Systems,” AIChE Annual Meeting, Nashville, TN, Nov 2009.
9. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Modeling Autocatalytic Controlled-Release Drug Delivery from PLGA Microspheres,” DOE CSGF Annual Conference, Washington, D.C., Jul 2009.
8. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Modeling Drug Delivery for Design of PLGA Microparticles,” AIChE Annual Meeting, Philadelphia, PA, Nov 2008.
7. **A. N. Ford**, J. J. Sestrich, E. Frankfurt, and S. Joy, “Performance of Parallel Simulations for Drug Delivery from Polymer Matrices,” DOE CSGF Poster Session, Scientific Discoveries in Advanced Computing Conference, Seattle, WA, Jul 2008.
6. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Modeling Controlled-Release Drug Delivery from PLGA Microspheres,” DOE CSGF Annual Conference, Washington, D.C., Jul 2008.
5. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Modeling Controlled-Release Drug Delivery from PLGA Microspheres,” AIChE Annual Meeting, Salt Lake City, UT, Nov 2007.
4. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Modeling Controlled-Release Drug Delivery from PLGA Microspheres,” UIUC Chemical & Biomolecular Engineering Graduate Research Symposium, Urbana, IL, Oct 2007.
3. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Modeling Controlled-Release Drug Delivery from Polymer Microspheres,” DOE CSGF Annual Conference, Washington, D.C., Jul 2007.
2. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Modeling Controlled-Release Drug Delivery from Polymer Microspheres,” Process Systems Engineering Consortium Meeting, Urbana, IL, May 2007.
1. **A. N. Ford**, D. W. Pack, and R. D. Braatz, “Modeling Controlled-Release Drug Delivery from Polymer Microspheres,” Process Systems Engineering Consortium Meeting, Santa Barbara, CA, Jun 2006.

## **DISSERTATIONS & THESES OF STUDENTS ADVISED**

1. Minu R. Pilvankar, *Mathematical Modeling of Podocytes in Diabetic Kidney Disease*, M.S. Thesis, Oklahoma State University, Stillwater, OK, 2015.

2. Yen T. Nguyen, *Computational Modeling of Metastatic Cancer Migration through a Remodeling Extracellular Matrix*, M.S. Thesis, Oklahoma State University, Stillwater, OK, 2018.
3. Minu R. Pilvankar, *Mechanistic Computational Modeling for Pathophysiology and Pharmacology: Case Studies of Diabetic Kidney Disease, Latent Tuberculosis, and Opioids*, Ph.D. Dissertation, Oklahoma State University, Stillwater, OK, 2019.
4. Carley V. Cook, *Mathematical Modeling of the Effect of Wnt-10b on Bone Metabolism*, M.S. Thesis, Oklahoma State University, Stillwater, OK, 2020.
5. Steve M. Ruggiero, *Development of Tools to Accelerate and Advance Modeling Disease Progression*, Ph.D. Dissertation, Oklahoma State University, Stillwater, OK, 2020.

## RESEARCH SUPPORT

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### **Total Amount Awarded: \$2,652,370**

National Institutes of Health NCCIH R15 Award: R15AT010725 (PI: Smith) Role: Project Collaborator on Administrative Supplement, Subaward PI Total Amount: \$583,065; UB/Ford Versypt share: \$37,690 “Prebiotic Activity of Tart Cherry and the Immunoregulation of Bone Homeostasis”	09/20–08/22
National Institutes of Health NIGMS R35 MIRA ESI Award: R35GM133763 Role: PI (Single Investigator) Total Amount: \$1,917,890; PI Transfer to UB Amount: \$1,591,282 “Quantitative Systems Biomedicine and Pharmacology for Multiscale Tissue Damage”	09/19–08/24
National Science Foundation CAREER Award: 1845117; PI Transfer Award: 2133411 Role: PI (Single Investigator) Total Amount: \$550,000; PI Transfer to UB Amount: \$393,301 “CAREER: Multiscale Modeling of a Virtual Kidney during the Onset and Progression of Diabetic Kidney Disease”	06/19–05/24
Oklahoma Center for the Advancement of Science and Technology Health Research Program Award: HR17-057 Role: PI (Single Investigator) Total Amount: \$135,000 “Computational Modeling of the Onset of Diabetic Kidney Disease”	09/17–08/20
Oklahoma Center for Respiratory & Infectious Diseases (NIH CoBRE) Pilot Grant Role: PI (Single Investigator) Total Amount: \$50,000 “Computational Modeling of Tuberculosis Granuloma Activation”	07/16–06/17
Harold Hamm Diabetes Center Seed Grant Role: PI (Single Investigator) Total Amount: \$45,000 “Mathematical Modeling of Podocytes in Diabetic Kidney Disease”	03/15–05/16

## III. EDUCATIONAL ACTIVITIES

### EDUCATIONAL EXTERNAL SUPPORT

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#### **Total Amount Awarded: \$5,000**

Computer Aids for Chemical Engineering (CACHE) Corporation Role: PI (Single Investigator) Total Amount: \$5,000 “Development of Open Access Version of Applied Numerical Computing Course”	01/20–12/20
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**COURSES TAUGHT**

Semester	Course Designation	Course Name	Enrollment (Honors Projects Supervised)
<b>Oklahoma State University</b>			
Fall 2014	CHE 3013	Rate Operations I	63 (1)
Spring 2015	CHE 3123	Chemical Reaction Engineering	63 (2)
	CHE 4990	Independent Study	2
Fall 2015	CHE 3013	Rate Operations I	85 (4)
	CHE 6010	Graduate Seminar	31
	CHE 4990	Independent Study	2
Spring 2016	CHE 3123	Chemical Reaction Engineering	82 (9)
	CHE 6010	Graduate Seminar	25
Fall 2016	CHE 5110	Special Topics in Chemical Engineering: Applied Numerical Computing for Scientists & Engineers	6
Spring 2017	CHE 3123	Chemical Reaction Engineering	66
	CHE 4843	Chemical Process Instrumentation & Control	80 (2)
	CHE 4990	Independent Study	2
Fall 2017	CHE 4990/5110	Special Topics in Chemical Engineering: Applied Numerical Computing for Scientists & Engineers	5/13
Spring 2018	CHE 3123	Chemical Reaction Engineering	79 (6)
	CHE 4990	Independent Study	2
Summer 2018	CHE 4990	Independent Study	2
Fall 2018	CHE 4753/5753	Applied Numerical Computing for Scientists & Engineers	5/12
	CHE 4990	Independent Study	4
Spring 2019	CHE 3123	Chemical Reaction Engineering	65 (3)
	CHE 4990	Independent Study	6
Summer 2019	CHE 4990	Independent Study	2
Fall 2019	CHE 4753/5753	Applied Numerical Computing for Scientists & Engineers	8/25
	CHE 4990	Independent Study	3
Spring 2020	CHE 3123	Chemical Reaction Engineering	60 (5)
	CHE 4990	Independent Study	2
Fall 2020	CHE 4753/5753	Applied Numerical Computing for Scientists & Engineers	9/8 (1)
<b>University at Buffalo</b>			
Fall 2021	CE 212	Fundamental Principles of Chemical Engineering	50 (3)
	CE 531	Chemical Engineering Mathematics & Computation	22
Spring 2022	CE 498	Undergraduate Research (Independent study)	3
Fall 2022	CE 212	Fundamental Principles of Chemical Engineering	TBD
	CE 498	Undergraduate Research (Department-wide research methods section, 1 credit)	TBD
	CE 498	Undergraduate Research (Independent study, 2 credits)	TBD
	DEE 599	Apprentice Teaching (Independent study, 2 credits)	1

## **COURSES PARTICIPATED IN**

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Guest Lecturer, OSU CHE 5743 Chemical Engineering Process Modeling, Fall 2016  
Guest Lecturer, OSU CHE 4603/5603 Membrane Separations, Spring 2017  
Guest Lecturer, OSU CHE 4843 Chemical Process Instrumentation & Control, Spring 2018 & 2019  
Guest Lecturer, Washington University in St. Louis BME 301B Quantitative Physiology II, Spring 2021

## **NEW COURSE DEVELOPMENT**

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OSU CHE 4753/CHE 5753 Applied Numerical Computing for Scientists & Engineers (CHE 4990/5990 in 2016, 2017)  
*Course Description:* Practical software tools for computational problem solving in science and engineering: version control (e.g., Git), mathematical typesetting (LaTeX), graphical user interfaces, and high level programming languages with libraries of solvers and visualization tools (e.g., Python and MATLAB). Application of numerical computing methods to solve systems of differential and algebraic equations and to estimate model parameters using optimization. Guest lectures from science & engineering faculty conducting computational research supplement the course.

Short course/workshop: Numerical Problem Solving across the Curriculum with Python and MATLAB Using Interactive Coding Templates, delivered at ASEE/AIChE Chemical Engineering Summer School 2022

*Co-developers:* Robert Hesketh, Austin Johns, Matthew Stuber

*Course Description:* This workshop explores Python and MATLAB templates and interactive coding notebooks for use throughout chemical engineering core courses and computational thinking as a problem solving approach. Students do not need prior Python or MATLAB programming to use these templates.

## **PRE-TENURE TRACK MENTORING & UNIVERSITY TEACHING EXPERIENCE**

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Mentor for Association of Women in Science mentoring circle, Mass-AWIS Chapter, 2013–2014  
Mentor for Women in Science & Engineering program, MIT SWE Collegiate Section, 2012–2013  
Postdoctoral mentor for Coffee with Grads program, MIT Dept. of Chemical Engineering, 2012–2013  
Ph.D. research mentor for 7 undergraduate students over 3 terms, UIUC, 2010–2011  
Teaching assistant for CHBE 431 Process Design, UIUC, 2010  
Certificate in Foundations of Teaching, UIUC Center for Teaching Excellence, 2009  
Graduate mentor for Professional & Leadership Development for Women course, UIUC College of Engineering, 2009  
Tutor for chemical engineering undergraduate courses, UIUC Dept. of Chemical & Biomolecular Engineering, 2006–2011

## **STUDENT RESEARCH ADVISING & STUDENT RECOGNITIONS**

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### **A. Masters students advised (6 total)**

#### *Current (alphabetical)*

1. Nicholas Glover, UB CBE, Nov 2021–Present
2. Austin Johns, UB CBE, Nov 2021–Present

#### *Alumni (reverse chronological)*

3. Duncan Mullins, OSU CHE, Aug 2019–Jan 2021 & May 2021–Aug 2021, UB CBE, Jan 2021–Aug 2021  
Now at University at Buffalo, Engineering Education Ph.D. Program  
Report: “Cellular Cross Talk and Damage to the Glomerular Filtration Barrier in Diabetic Kidney Disease”  
2nd place poster, OSU, CHE 5302 Research Methods poster competition, 2019
4. Carley V. (Easteop) Cook, OSU CHE, Aug 2019–Dec 2020, Defense: 11/5/2020  
Now at University at Buffalo, Chemical Engineering Ph.D. Program  
Thesis: “Mathematical Modeling of the Effects of Wnt-10b on Bone Metabolism”  
OSU Women’s Faculty Council Student Research Award (\$750), 2020  
2<sup>nd</sup> Place in Computing, Simulation and Process Control III category, AIChE Annual Meeting Undergraduate Student Poster Competition, 2019  
Selected to attend Tutorial Workshop on Parameter Estimation for Biological Models, Raleigh, NC, 2019

5. Yen T. Nguyen, OSU CHE, Jul 2017–Aug 2018, Defense: 7/6/2018  
Now at United Community Bank as Treasury Quantitative Analyst  
Thesis: “Computational Modeling of Metastatic Cancer Migration through a Remodeling Extracellular Matrix”  
OSU Women’s Faculty Council Student Research Award (\$750), 2018  
2<sup>nd</sup> place poster, Biochemical and Molecular Biology Graduate Student Association Research Symposium, Oklahoma State University, 2017
6. Minu R. Pilvankar, OSU CHE, Aug 2014–Dec 2015, Defense: 11/23/2015  
Now at Boehringer Ingelheim pharmaceutical company as Senior Scientist  
Thesis: “Mathematical Modeling of Podocytes in Diabetic Kidney Disease”

## **B. Doctoral students advised (9 total)**

### ***Current (alphabetical)***

1. Temitope O. Benson, OSU Mathematics, Jan 2020–Jan 2021, UB Computational and Data Enabled Science and Engineering, Jan 2021–Present  
Selected to attend (with support) SIAM Conference on Computational Science and Engineering, Broadening Engagement Program, 2021
2. Eduardo A. Chacin Ruiz, UB CBE, Jan 2021–Present
3. Carley V. Cook, UB CBE, Jan 2021–Present  
UB Arthur A. Schomburg Fellowship (\$10,000/year for 4 years), 2021–Present  
Travel grant to attend NDiSTEM Conference by SACNAS, 2022
4. Kailei Lui, UB CBE, Jan 2021–Present
5. Krutika Patidar, UB CBE, Aug. 2020–Present  
AIChE Women in Chemical Engineering Travel Award to attend AIChE Annual Meeting, Boston, MA, 2021  
Selected to attend CAMBAM Summer School in Nonlinear Dynamics for the Life Sciences, Virtual, 2022
6. Haryana Y. Thomas, OSU CHE, Aug 2019–Jan 2021, UB CBE, Jan 2021–Present  
Travel grant to attend NOBCCChE Collaborative Conference, Pittsburgh, PA, 2022  
UB School of Engineering and Applied Sciences (SEAS) Leadership Development Fellow (\$1500 scholarship/mentorship program with the SEAS Dean and an undergraduate student), 2021–2022  
SB3C Diversity Participation Award, 2021

### ***Alumni (reverse chronological)***

7. Anabel S. M. Ruggiero, OSU CHE, Aug 2016–Dec 2020, Defense: 11/9/2020  
Now at Stellar Science as Software Engineer  
Dissertation: “Development of Tools to Accelerate and Advance Modeling Disease Progression”  
Rob L. Robinson, Jr. Endowed Graduate Fellowship (\$1,000), OSU School of Chemical Engineering, 2019–2020  
Walt Kolb Graduate Studies Scholarship (\$1,500), OSU Graduate College, 2018–2019  
Selected to attend User Training Workshop: Developing Multi-Scale, Virtual Tissue Simulations with CompuCell3D, Bloomington, IN, 2017
8. Minu R. Pilvankar, OSU CHE, Jan 2016–May 2019, Defense: 3/28/2019  
Now at Boehringer Ingelheim pharmaceutical company as Senior Scientist  
Dissertation: “Mechanistic Computational Modeling for Pathophysiology and Pharmacology: Case Studies of Diabetic Kidney Disease, Latent Tuberculosis, and Opioids”  
Graduate Certificate in Interdisciplinary Toxicology  
ACM SIGHPC/Intel Computational and Data Science Fellowship (\$15,000/year for 2 years), 2017–2019  
OSU Interdisciplinary Toxicology Program Fellowship (\$2,500), 2017–2018  
OSU Spears School of Business Creativity, Innovation, & Entrepreneurship Scholars Program (\$2,500), 2017–2018  
OSU Women’s Faculty Council Student Research Award (\$1,000), 2017  
Selected to attend (with travel support) SIAM Conference on Computational Science and Engineering, Broadening Participation Program, 2017  
Best Posterium Award, SIAM Conference on Computational Science and Engineering, 2017  
3<sup>rd</sup> place poster, ASEE Midwest Section Conference, 2017  
Gold Poster Prize (1<sup>st</sup> place) for Graduate Student & Postdoc Category, Harold Hamm Diabetes Center Research Symposium, 2016  
Outstanding Poster Presentation, New York Academy of Sciences Symposium on Chronic Kidney Disease, 2016

Selected to attend (with travel support) Mathematics Research Communities Conference on Mathematics in Physiology and Medicine, 2016

Summer Research Fellowship (\$4,000), OSU Graduate College, 2016

9. Kapil Gumte, OSU CHE, Aug 2014–Dec 2015, left the university without completing Ph.D. degree  
Now at IIT Hyderabad as Senior Research Fellow

### C. Postdoctoral scholars advised (2 total)

#### *Current*

1. Mohammad Aminul Islam, Ph.D. Chemical Engineering, Missouri University of Science and Technology, 2019  
Postdoctoral Research Associate, OSU, Dec 2019–Jan 2021, UB, Jan 2021–Present
2. Jabia M. Chowdhury, Ph.D. Electrical and Computer Engineering, University of Memphis, 2022  
Postdoctoral Research Associate, UB, May 2022–Present

#### *Alumni*

None.

### D. Undergraduate students advised (47 total)

**Total UG research scholarship program mentoring:** 1 NSF GRF, 2 Goldwater Scholars, 1 NSURP, 2 Niblack Scholars, 3 Wentz Scholars, 2 Oklahoma Louis Stokes Alliance for Minority Participation Scholars (OK-LSAMP) Scholars, 2 CEAT Undergraduate Research Scholars, 2 Wentz Semester Grant Scholars, 9 Freshman Research Scholars.

#### *Current (alphabetical)*

1. Ibukunoluwapo Adetola (UB B.S. BME 2024), May–Aug 2022
2. Anna Belyablya (UB B.S. CBE 2024), Feb 2022–Present  
CE 498 independent study research for course credit, Spring 2022  
Bauer Foundation Women in Science and Engineering (WiSE) experiential learning fund scholarship, Summer 2022
3. Chanel Campbell (Jun–Aug 2022, Howard University, B.S. Nursing 2024)  
National Summer Undergraduate Research Program
4. Joseph Mennicucci (UB B.S. CBE 2024), May 2022–Present
5. Joyce Naluwoza (UB B.S. CBE 2022), May 2022–Present
6. Christine Singh (UB B.S. CBE 2024), May 2022–Present
7. Steven Stanislevic (UB B.S. CBE 2022), May 2022–Present
8. Alexandra Villafuerte (Case Western Reserve University B.S. Chemical Engineering 2023), May–Aug 2022

#### *Alumni (alphabetical)*

9. Troy Adkins II (OSU B.S. Microbiology 2021), Jan–Jun 2018  
OK-LSAMP Scholar
10. Teagan Allart (UB B.S. CBE 2024), Sep–Dec 2021  
CE 212 honors credit, Fall 2021
11. Ava Asklar (UB B.S. CBE 2024), Feb–May 2022  
CE 498 independent study research for course credit, Spring 2022
12. Blake Bartlett (OSU B.S. CHE 2022), Dec 2018–May 2022  
Goldwater Scholar 2020  
National Merit Scholar  
1st Place, AIChE Mid-America Regional Student Technical Presentation Competition, 2020  
3<sup>rd</sup> Place in Computing, Simulation and Process Control III category, AIChE Annual Meeting Undergraduate Student Poster Competition, 2019  
2<sup>nd</sup> Place Undergraduate Poster Presentation, OSU Research Symposium in Biological Sciences, 2019  
CHE 4990 independent study research for course credit, Fall 2019  
Wentz Research Scholar (\$4,500), OSU, 2019–2020, 2020–2021, 2021–2022 (supervised by Dr. Yu Feng)  
Freshman Research Scholar (\$1,000), OSU, 2018–2019
13. Albert Cai (University of Michigan B.S. Biomedical Engineering 2019), Apr–Aug 2017
14. Samantha L. Carpenter (OSU B.S. Mechanical Engineering 2021), May–Dec 2019, Aug–Dec 2020

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15. Lindsay Cordier (OSU B.S. Mechanical Engineering 2021), Jan–May 2018  
Freshman Research Scholar (\$1,000), OSU, 2017–2018
16. Travis Diamond (OSU B.S. CHE 2017), Dec 2016–May 2017  
CHE 4990 independent study research for course credit, Spring 2017
17. Carley V. Eastep (OSU B.S. CHE 2019), Dec 2016–May 2019  
One of four students selected to represent OSU at 2019 Research Day at the Capitol, Oklahoma City, OK  
OK-LSAMP Scholar  
Niblack Research Scholar (\$8,000), OSU, 2018–2019  
CHE 4990 independent study research for course credit, Spring–Fall 2018, Spring 2019
18. Natalie Evans (OSU B.S. CHE 2022), Dec 2018– May 2019  
Freshman Research Scholar (\$1,000), OSU, 2018–2019
19. Noah Gade (OSU B.S. CHE 2017), Dec 2016–Mar 2017  
OSU Director’s Chair senior student-athlete academic award for Men’s Track & Field
20. Kody J. Harper (OSU B.S. CHE 2016), Aug–Dec 2015  
CHE 4990 independent study research for course credit, Fall 2015
21. Grace K. Harrell (OSU B.S. CHE 2016), May 2015–Jun 2016  
1<sup>st</sup> place undergraduate poster in Physical Sciences & Technology Division, OSU Research Symposium (co-  
presenter ANM), 2016
22. Caitlin Haug (OSU B.S. CHE 2020), Dec 2018–May 2020  
CHE 4990 independent study research for course credit, Spring 2019, Fall 2019  
Wentz Research Scholar (\$4,500), OSU, 2019–2020
23. John Hayes (OSU B.S. CHE 2018), May–Aug 2017
24. Megan Henderson (OSU B.S. CHE 2016), Jan–May 2015  
CHE 4990 independent study research for course credit, Spring 2015
25. Michele A. Higgins (OSU B.S. CHE 2017), Sep 2014–May 2017  
Senior of Significance, OSU Alumni Association, 2016  
3<sup>rd</sup> place undergraduate poster in Physical Sciences & Technology Division, OSU Research Symposium, 2016  
OSU Women’s Faculty Council Student Research Award (\$500), 2016  
Semester Wentz Research Scholar, OSU, Fall 2015 (\$750)
26. Cory Hopcus (OSU B.S. Computer Engineering 2018), May–Aug 2017
27. Kelcie Jenkins (OSU B.S. Nutrition 2021), Jan–May 2018  
Freshman Research Scholar (\$1,000), OSU, 2017–2018
28. Irum Khan (OSU B.S. CHE 2016), Jan–Dec 2015  
Semester Wentz Research Scholar, OSU, Fall 2015 (\$750)  
CHE 4990 independent study research for course credit, Spring & Fall 2015
29. Gregory Kimmerer (Emory University B.S. Biology and Applied Mathematics 2022), May 2021–Aug 2021  
Goldwater Scholar 2021
30. Jacquelyn I. Lane (OSU B.S. CHE 2017), Jan 2016–May 2017  
Outstanding Senior, OSU Alumni Association, 2017  
OSU Women’s Faculty Council Student Research Award (\$500), 2017  
2<sup>nd</sup> place, oral presentation, AIChE Mid-America Regional Student Conference, 2017  
CHE 4990 independent study research for course credit, Spring 2017  
Senior of Significance, OSU Alumni Association, 2016  
Travel grant to attend National Institute of Mathematical & Biological Synthesis Undergraduate Research  
Conference at the Interface of Biology and Mathematics, 2016  
Wentz Research Scholar, OSU, 2016–2017 (\$4,500)  
W. W. Allen Scholar, 2013–2017
31. Kaitlyn Lane OSU (B.S. Biosystems & Agricultural Engineering 2022), Dec 2018–Dec 2020  
4<sup>th</sup> Place Undergraduate Poster Presentation, OSU Research Symposium in Biological Sciences, 2019  
Niblack Research Scholar (\$8,000), OSU, 2019–2020  
CHE 4990 independent study research for course credit, Summer–Fall 2019  
Freshman Research Scholar (\$1,000), OSU, 2018–2019
32. Matthew Linna (OSU B.S. CHE 2023), Oct 2019– May 2020  
Freshman Research Scholar (\$1,000), OSU, 2019–2020
33. Zachary Mauck (OSU B.S. CHE 2021), Aug–Dec 2018

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- CHE 4990 independent study research for course credit, Fall 2018
34. Kirsten McGraw (UB B.S. CBE 2024), Feb–May 2022  
CE 498 independent study research for course credit, Spring 2022
35. Alexandra N. McPeak (OSU B.S. CHE 2016), May 2015–Jun 2016  
1<sup>st</sup> place undergraduate poster in Physical Sciences & Technology Division, OSU Research Symposium (co-presenter GKH), 2016
36. Yen T. Nguyen (OSU B.S. CHE 2017), Aug 2016–May 2017  
1<sup>st</sup> place William Cunningham Award for National AIChE Student Design Competition—Team Category, 2017
37. Isabelle Posey (OSU B.S. Nutrition 2022), Dec 2018–Apr 2019  
Freshman Research Scholar
38. Meredith Proctor (OSU B.S. Biochemistry 2021, B.S. Microbiology/Cell & Molecular Biology 2021), Nov 2018–Aug 2019  
CHE 4990 independent study research for course credit, Spring–Summer 2019
39. Jonathan E. Ramos (OSU B.S. CHE 2018), Jan 2015–Mar 2016
40. Ashlea D. (Bucher) Sartin (OSU B.S. CHE 2020), Jan 2018–May 2020  
CEAT Undergraduate Research Scholar Year 1 (\$1,500), 2018–2019  
CEAT Undergraduate Research Scholar Year 2 (\$2,000), 2019–2020  
Fleming Research Scholar, Oklahoma Medical Research Foundation, 2019  
CHE 4990 independent study research for course credit, Spring 2018, Fall 2018, Spring 2019  
One of four students selected to represent OSU at 2020 Research Day at the Capitol, Oklahoma City, OK
41. Susanna Stewart (OSU B.S. CHE 2022), Dec 2018–May 2019, Dec 2019–May 2020  
CHE 4990 independent study research for course credit, Spring 2019
42. Claire Streeter (OSU B.S. CHE 2020), Jun 2018–May 2020  
3<sup>rd</sup> Place Undergraduate Poster Presentation, OSU Research Symposium in Biological Sciences, 2019  
CEAT Undergraduate Research Scholar Year 1 (\$1,500), 2019–2020  
CHE 4990 independent study research for course credit, Summer–Fall 2018, Spring 2019
43. Cole Strickling (OSU B.S. CHE 2021), Jun 2020–Dec 2020
44. Karley White (OSU B.S. CHE 2023), Oct 2019–May 2020  
Oklahoma State Scholars Society (premiere, competitive undergraduate scholarship offered to top 5 incoming first year students)  
Freshman Research Scholar (\$1,000), OSU, 2019–2020
45. Aubrey Wolfe (OSU B.S. CHE 2023), Oct 2019–May 2020  
Freshman Research Scholar (\$1,000), OSU, 2019–2020
46. Hui Ling Yong (OSU B.S. CHE 2017), Dec 2016–May 2017
47. Anya Zornes (OSU B.S. CHE 2019, B.S. Mathematics 2019), Aug 2016–May 2017

## GRADUATE STUDENT COMMITTEES

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### M.S. (Dept., Advisor, End Date)

Carley V. Cook (OSU CHE, ANFV, Nov 2020), Ahmad Hagnehadar (OSU CHE, Dr. Yu Feng, Nov 2018), Yen T. Nguyen (OSU CHE, ANFV, Aug 2018), Minu R. Pilvankar (OSU CHE, ANFV, Dec 2015), Nicholas Rai (UB, Dr. Rudi Gunawan, May 2021), Casey Williamson (OSU Chemistry, Dr. Chris Fennell, Dec 2017)

### Ph.D. (Dept., Advisor, End Date)

Momen Amer (OSU CHE, Dr. Josh Ramsey, Apr 2019), Temitope O. Benson (UB CDSE, ANFV), Eduardo A. Chacin Ruiz (UB CBE, ANFV), Carley V. Cook (UB CBE, ANFV), Nicholas Flynn (OSU CHE, Dr. Josh Ramsey, Jul 2018), Yasmine Gabal (OSU CHE, Dr. Josh Ramsey, Jul 2020), Carrie German (OSU CHE, Dr. Sundar Madihally, Dec 2017), Utkarsh Kapoor (OSU CHE, Dr. Jindal Shah, Nov 2018), Kailei Lui (UB CBE, ANFV), Saber Meamardoost (UB CBE, Dr. Rudi Gunawan, Aug 2022), Uddhaba R. Pandey (OSU Mathematics, Dr. Jiahong Wu), Krutika Patidar (UB CBE, ANFV), Minu R. Pilvankar (OSU CHE, ANFV, May 2019), Ricardo X. Ramirez Iza (UB CBE, Dr. Viviana Monje-Galvan), Steve M. Ruggiero (OSU CHE, ANFV Nov 2020), Haryana Y. Thomas (UB CBE, ANFV), Hang Yi (OSU CHE, Dr. Yu Feng, Nov 2020), Jianan Zhao (OSU CHE, Dr. Yu Feng, Jul 2021)

**STUDENT ACADEMIC ADVISING**

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Academic advisor/faculty advisor for chemical engineering undergraduate students

Year	Spring Term	Fall Term
2015	NA	21 juniors
2016	25 juniors	25 seniors
2017	30 sophomores	28 juniors
2018	28 juniors	28 seniors
2019	NA	10 juniors
2020	20 juniors	NA
2021	NA	4 sophomores
2022	4 sophomores	TBD

**IV. SERVICE ACTIVITIES****PROFESSIONAL AND HONOR SOCIETY MEMBERSHIPS**

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American Institute of Chemical Engineers (Senior Member), American Physiological Society, American Society for Engineering Education, American Society of Nephrology, Association for Cancer Systems Biology, Association of Women in Mathematics, Biomedical Engineering Society, Omega Chi Epsilon Chemical Engineering Honor Society, Society of Industrial and Applied Mathematics, Society of Mathematical Biology, Society of Women Engineers, Tau Beta Pi Engineering Honor Society

**PROFESSIONAL SERVICE**

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***American Institute of Chemical Engineers***

Director, CAST Division, 2022–2024

Mentor, Future Faculty Mentoring Program, Education Division, 2020–2022

2021–2022 mentee Dr. Vivek Bajpai is now tenure track faculty at University of Oklahoma

2020–2021 mentee Dr. Shachi Mittal is now tenure track faculty at University of Washington

Panelist, “CAST Academic Career” panel, virtual, 2021

Produced “Time saving tips for using iPosters for AIChE (virtual) Annual Meeting” video with over 3,500 views, 2020  
Chair of Virtual Community of Practice on Chemical Reaction Engineering & Process Control, Education Division, 2020Planning committee member and moderator for Women’s Initiatives Committee (WIC) 20<sup>th</sup> Anniversary Topical Conference, AIChE Annual Meeting, 2018

2018 AIChE Annual Meeting Program Coordinator for Area 10d: Applied Mathematics and Numerical Analysis, CAST Division, 2015–2018

Student Paper Competition oral presentation judge, AIChE Mid-America Regional Student Conference, 2018

Faculty panelist, WIC Graduate Students and Postdocs Workshop, AIChE Annual Meetings, 2017, 2018

Chem-E Car Competition emcee, AIChE Mid-America Regional Student Conference, 2018, local competition, 2017–2019

Social media coordinator, CAST Division, 2016–Present

***American Society for Engineering Education***

Chair-Elect/Chair/Past-Chair (3 year term, 1 year in each role), Chemical Engineering Division (CHED), 2019–2022

Facilitator for CHED Virtual Community of Practice in Action on Inclusive Teaching Practices, 2022

Facilitator for CHED Conversation Series on Inclusion and Thriving, 2020–2021

Panelist and moderator, “Inclusion in Chemical Engineering: Reflections From the Conversation Series on Inclusion and Thriving,” panel discussion, Chemical Engineering Division, ASEE Annual Meeting, Virtual, 2021

Panelist, “Equity in Engineering Education: Perspectives From Different Engineering Disciplines” panel discussion, Equity, Culture &amp; Social Justice in Education Division, ASEE Annual Meeting, Virtual, 2021

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Panelist, “Striking a Balance with Teaching, Research and Service” panel discussion, ASEE Midwest Section Conference, Virtual, 2021

P-12 Committee Representative from CHED, 2018–2019

Director, CHED, 2017–2019

Technical Programming Committee Member for 2017 ASEE Midwest Section Conference, OSU, 2016–2017

***Computer Aids for Chemical Engineering***

Academic Trustee, 2020–Present

Facilitator for ASEE/AIChE Chemical Engineering Summer School session: “Numerical Problem Solving across the Curriculum with Python and MATLAB Using Interactive Coding Templates,” 2022

Coordinator of CACHE Trustee submissions of workshops to the ASEE/AIChE Chemical Engineering Summer School, 2021

Diversity Committee Member, 2020–Present

***Chemical Engineering Education Publications Board***

Chair, Technology Sub-Committee, 2020–2022

***Department of Engineering Computational Science Graduate Fellowship***

Postdoctoral and career panelist, DOE CSGF Annual Program Review, 2017

Fellowship Screening Panel, 2013, 2015–2018, 2022

Recruitment booth, SWE Annual Meeting, 2011

***Society for Mathematical Biology***

Diversity, Equity, and Inclusion Committee Member, 2020–Present

***Society of Women Engineers***

Girl Scout Liaison for SWE Boston Professional Section, Boston, MA, 2012–2014

Workshop developer and instructor for Clean Water through Chemical Engineering session for Changing the World through STEM Expo, Girl Scouts of Eastern Massachusetts, Boston, MA, 2012, 2014

Mentor for Women in Science & Engineering program, MIT Collegiate Section, 2012–2013

Outreach Committee Member, Boston Professional Section, Boston, MA, 2012–2014

Outreach Committee Member, UIUC Student Section, Urbana, IL 2008–2009

***Additional Conference/Symposium Planning Committees***

Project team leader for Modeling Sex Differences in Physiology collaboration workshop, Banff, AB, Canada, 2023

Planning committee member for Collaborative Workshop for Women in Mathematical Biology: Mathematical Approaches to Support Women’s Health, Minneapolis, MN, 2022

Planning committee member for 2022 Systems Approaches to Cancer Biology Conference, Woods Hole, MA, 2021–2022

Planning committee member for 2020 Systems Approaches to Cancer Biology Conference, Virtual, 2019–2020

Program committee member for Interagency Modeling and Analysis Group Multiscale Modeling Meeting, Virtual, 2020

Organizer for 2012 Path of Professorship future faculty workshop for MIT female graduate students and postdoctoral researchers, MIT Office of the Dean for Graduate Education, Cambridge, MA, 2012

Organizer for Symposium on Emerging Topics in Control & Modeling: Biomedical Applications student-led research symposium with nation-wide participation and 12 invited keynote speakers, UIUC Beckman Institute and Coordinated Science Laboratory, Urbana, IL, 2009–2010

Organizer for UIUC Dept. of Chemical & Biomolecular Engineering Graduate Research Symposium, Urbana, IL, 2007

***Conference Moderator and Referee Roles***

Conference session chair/co-chair/moderator for AIChE Annual Meeting, 2011, 2014, 2015, 2016 (3 sessions), 2017 (4 sessions), 2018 (4 sessions), 2019 (2 sessions), 2020 (2 sessions), 2021 (2 sessions), 2022; ASME Oklahoma Symposium, 2015; ASEE Annual Meeting, 2013, 2022; ASEE Midwest Section Conference, 2018, 2019; BMES Annual Meeting, 2014, 2016, 2020; Foundations of Systems Biology in Engineering Conference, 2018; SIAM Life Sciences, 2020; Society of Mathematical Biology, 2015; Society of Petroleum Engineers Regional Paper Contest, 2015

Conference reviewer for American Control Conference, 2016, 2018; AIChE Annual Meeting, 2011, 2014–2022; ASEE Annual Meeting, 2016–2022; ASEE Midwest Section Conference, 2017; BMES Annual Meeting, 2014, 2015, 2016 (2 tracks), 2020, 2022; Collaborative Network for Computing & Engineering Diversity, 2020; Foundations of Systems Biology in Engineering, 2018, 2019; Interagency Modeling and Analysis Group Multiscale Modeling Meeting, 2020;

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International Federation of Automatic Control World Congress, 2020; National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE) Conference, 2020; Process Systems Engineering, 2018; Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) – The National Diversity in STEM Conference, 2020  
Conference student award reviewer for CAST Division, AIChE Annual Meeting, 2016, 2017, 2022; BMES Annual Meeting, 2014  
Poster session judge for AIChE Annual Meeting, 2013 (undergraduate), 2015–2018 (CAST Division Applied Mathematics Area), 2021 (CAST Division Directors Award; Minority Affairs Committee Eminent Engineers); ASEE Annual Meeting, 2022; ASEE Midwest Section Conference, 2016, 2017; DOE CSGF Annual Program Review, 2012, 2013, 2017, 2022; Interagency Modeling and Analysis Group Multiscale Modeling Conference (Virtual), 2020; OK-LSAMP Symposium, 2017, 2018; OSU Biochemistry & Molecular Biology Research Symposium, 2019; SIAM Annual Meeting, 2016; Summer Biomechanics, Bioengineering, and Biotransport Conference (Virtual), 2020

### ***Journal Referee***

Acta Biomaterialia; Advanced Healthcare Materials; AIChE Journal; ASEE Computers in Education; Biotechnology & Bioengineering; British Journal of Pharmacology; Chemical Engineering Education; Computations; Computers & Chemical Engineering; Computing in Science and Engineering; Current Drug Delivery; Current Opinion in Systems Biology; Drug Delivery Letters; Drug Development & Industrial Pharmacy; Drug Discovery Today; Education for Chemical Engineers; Environmental Toxicology & Chemistry; European Journal of Pharmaceutics & Biopharmaceutics; Frontiers in Physiology; Hydrological Processes; IEEE Transactions on Biomedical Engineering; IEEE Transactions on Control Systems Technology; Industrial & Engineering Chemistry Research; Integrative Biology; International Journal of Numerical Methods for Heat & Fluid Flow; International Journal of Pharmaceutics; Involve: a Journal of Mathematics; Journal of Pharmacokinetics & Pharmacodynamics; Journal of Process Control; Mathematical Medicine & Biology; Optimal Control, Applications & Methods; PLOS Computational Biology; Processes

## **UNIVERSITY SERVICE**

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### **University at Buffalo**

#### ***Department of Chemical and Biological Engineering***

Chair, Student Awards Committee, Apr 2022–Present

Member, Undergraduate Committee, Feb 2022–Present

Faculty academic advisor for 4 undergraduates/semester, Oct 2021–Present

#### ***School of Engineering and Applied Sciences***

Alternate member, Tenure Committee, Spring 2022–Present

Committee for Justice, Equity, Diversity, and Inclusion, Spring 2021–Present

Faculty panelist, New Student Move-In events and Coffee & Conversations event, Women in Science & Engineering, 2021–2022

#### ***University***

Faculty Fellow for the NSF Graduate Research Fellowship Program, 2021–2025

Member, Search Committee for Chair of Department of Pharmaceutical Sciences, 2021–2022

Faculty panelist, Women in STEM event, UB Society of Industrial & Applied Mathematics and Association of Women in Mathematics student chapters, Mar 2022

### **Oklahoma State University**

#### ***School of Chemical Engineering***

Social media coordinator, Fall 2016–Fall 2020

Academic advisor for 10-30 undergraduates/semester, Fall 2015–Fall 2020

Faculty advisor, Chemical Engineering Student Mentoring Program, Spring 2015–Spring 2020

Organizer for Chemical Reaction Engineering course brewery tours, Spring 2016–Spring 2019

Organizer for ConocoPhillips Lectureship in Chemical Engineering Education, 2015–2019

Member, Search Committee for School Head, 2018–2019

Reviewer for Outstanding Graduate Student Award, Spring 2018

Member, Scholarship Committee, Spring 2015–Spring 2018

Member, Faculty Search Committee, 2014–2015, 2015–2016, 2017–2018

Seminar coordinator, Graduate Seminar Series, 2015–2016

### ***College of Engineering, Architecture and Technology***

Member, Math Advisory Committee, Fall 2019

Presenter, IGNITE Engineering Leadership Speaker Series: “Developing Non-Technical Skills,” Mar 2019

Faculty panelist, Passport to CEAT event for incoming freshmen, Aug 2018, Aug 2019

Interviewer, CEAT Scholar candidates, Jan 2016, Dec 2016, Dec 2017, Dec 2018, Dec 2019

Panel reviewer, St. Patrick’s Award for Outstanding CEAT Senior, OSU, Mar 2016, Mar 2017

Member, Diversity Programs/Women in CEAT Committee, Fall 2016–Spring 2017

Member, CEAT Undergraduate Laboratory Building (renamed as Endeavor Building) planning groups for fluids, heat transfer, and unit operations laboratories, 2016

### ***University***

Faculty advisor, Alpha Phi Omega co-ed service fraternity, Theta Sigma Chapter at OSU, Fall 2014–Fall 2020

Reviewer, OSU Women’s Faculty Council Research Award, Spring 2017–Spring 2020

Faculty advisor, Alpha Omega Epsilon technical sorority, Beta Pi Chapter at OSU, Fall 2014–Spring 2020

Presenter, OK-LSAMP professional development session: “Conference Best Practices,” Oct 2019

Faculty panelist, Undergraduate research informational event, OSU Alpha Omega Epsilon, Mar & Oct 2019

Interviewee and workshop participant, OSU research business process review with external consulting firm, Office of the Vice President for Research, Spring 2019

Faculty panelist, Preparing Future Faculty event, OSU Women’s Faculty Council, Apr 2019

Faculty advisor, Out in Science, Technology, Engineering, and Mathematics (oSTEM) Club at OSU, 2017–2019

Reviewer, Niblack Scholars Program, OSU, Spring 2015

Judge for oral presentations, OSU Graduate Research Symposium, Spring 2015

Interviewee, OSU Institute for Teaching and Learning Excellence ITLE LIVE 40-minute broadcast on engaging instructional practices: <https://vimeo.com/141915144>, Fall 2015

Faculty mentor, OSU First2Go Mentoring Program for first generation students, 2014–2015

## **COMMUNITY ENGAGEMENT & STEM OUTREACH SERVICE**

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Instructor for more than 40 STEM outreach events (in addition to those itemized below) through Girl Scouts, Boys & Girls Club, Society of Women Engineers, Boy Scouts, a senior citizens’ center, and classroom visits in NY, OK, MA, and IL, 2002–Present

Instructor for UB Chemical Engineering Summer Camp (week-long camp for high-school juniors and seniors) session on chemical engineering behind pharmaceutical dosing design and manufacturing (90 min of activities), 2022, (3 sessions total)

Guest speaker for roundtable with women in engineering and/or undergraduate groups during seminar visits: University of Arkansas, Sep 2016; University of Pittsburgh, Sep 2017; University of Florida, Nov 2019; Illinois Institute of Technology, Mar 2022

Interviewee, Fox 23 News Tulsa 3-minute broadcast “OSU researchers’ simulation shows how COVID-19 affects the body”: <https://www.fox23.com/news/local/osu-researchers-simulation-shows-how-covid-19-affects-body/2WGRLN5ZVBFUNION4XIVBIOAYM/>, 2020

Instructor for biomedical engineering session (6 hour of content) of Grandparent University three-day camp for grandchildren and their grandparents, Stillwater, OK, 2018, 2019, 2020 (*cancelled due to COVID-19*)

Instructor for College of Engineering, Architecture and Technology Summer Bridge Program chemical engineering design module (6 hour short course for incoming freshmen), 2015–2019, (12 sessions total)

Demonstrator at hands-on booth featuring simulation apps from ANFV lab at Oklahoma EPSCoR Women in Science Conference for 1000+ middle school and high school girls and teachers, Tulsa, OK, 2016, 2017, Oklahoma City, OK 2018, 2019

Chemistry merit badge counselor for OSU Merit Badge University, Boy Scouts of America & Alpha Phi Omega service fraternity, Stillwater, OK, 2016, 2018, 2019

Guest speaker on biomedical engineering for high school biomedical sciences students from Central Technology Center vocational school, Drumright, OK, 2017, 2018

Guest speaker for Research Experience for Undergraduates seminar series on computational modeling at South Dakota School of Mines and Technology, webinar, 2017

Keynote speaker for National Center for Women in Information Technology Oklahoma Regional Aspirations in Computing Award reception, 2017  
Panelist for SWE Day outreach event for high school girls, Stillwater, OK, 2015  
Guest lecturer for Girls' Angle Math Club for Girls, Cambridge, MA, 2013  
Workshop developer and instructor for Clean Water through Chemical Engineering session for Changing the World through STEM Expo, Girl Scouts of Eastern Massachusetts, Boston, MA, 2012, 2014  
Girl Scout Liaison for SWE Boston Professional Section, Boston, MA, 2012–2014  
SWE Outreach Committee Member, SWE Boston Professional Section, Boston, MA, 2012–2014, SWE UIUC Collegiate Section, Urbana, IL 2008–2009  
Instructor for session on water filtration for middle school teachers at a teachers' enrichment program, UIUC, 2011  
Lesson plan writer and tester for hands-on engineering activities in middle school and high school science classes, UIUC, 2010–2012  
STEM activities director for one-week residential science camp for 4<sup>th</sup>-6<sup>th</sup> grade girls, Girl Scouts of Sooner Council, Marlow, OK, 2002

## **ACADEMIC PROFESSIONAL DEVELOPMENT**

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The Impact of Racialized Bias on Academic Success in STEM, Lecture & Workshop, UB, 2022  
ASEE CHED/AICHe Education Division Book Club on Teaching to Transgress: Education as the Practice of Freedom, 2022  
Computing for Teaching and Learning with Jupyter, George Washington University, 2021  
AICHe Annual 2021 workshops: (1) Social Justice and Chemical Engineering and (2) The Science of Intersectionality Addressing Diversity, Equity, Inclusion, and Anti-Racism in 21st Century STEMM Organizations summit, National Academies of Science, Engineering, and Medicine, Virtual, 2021  
Conversation Series on Inclusion and Thriving (facilitator), ASEE Chemical Engineering Division, Virtual, 2020–2021  
SUNY PRODiG (promoting recruiting opportunity, diversity, inclusion, and growth) faculty support program, 2021  
Living Materials Square Table, National Cancer Institute & National Science Foundation, Virtual, 2021  
SMB Workshop on Diversity, Equity, and Inclusion, Virtual, 2021  
Equity and Anti-Racism: A Roadmap to Policy Transformation in BME summit, American Institute for Medical and Biological Engineering, Virtual, 2021  
Academics for Black Survival and Wellness anti-racism short course, Virtual, 2020  
LGBTQ Safe Zone Training, OSU, Virtual, 2020  
Nonlinear Regression Modeling short course, OSU Professional Development Program: Engineering & Business Modeling, Optimization and Control, Stillwater, OK 2020  
Community Building for High-Performance Computing Curriculum Development workshop, National Computational Science Institute, Tulsa, OK, 2019  
ASEE Midwest Section Conference, Kansas City, MO, 2018  
AICHe Center for Chemical Process Safety faculty workshop, LyondellBasell, Houston, TX, 2018  
Teaching with Technology Symposium, OSU, 2018  
ASEE Summer School for Chemical Engineering Faculty, North Carolina State University, 2017  
Data-Driven Modeling of Collective Behavior and Emerging Phenomena in Biology workshop, Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC, 2017  
Effective College Teaching workshop by Drs. Felder & Brent, OSU, 2017  
Society of Women Engineers Women in Academia mentoring program (mentee), 2016–2017  
ASEE Midwest Section Conference, Manhattan, KS, 2016  
Computing MATTERS: Inquiry-Based Science & Mathematics Enhanced by Computational Thinking workshop, 2016  
National Institutes of Health Regional Seminar on Program Administration, Baltimore, MD, 2015  
National Science Foundation Grants Conference, Tampa, FL, 2015  
Scholarship of Teaching & Learning faculty course, OSU Institute for Teaching and Learning Excellence, 2015  
Grantsmanship graduate course GRAD 5990 (audit), OSU, 2015  
Software Carpentry Workshop, OSU, 2015  
COMSOL Multiphysics Workshop, OSU, 2015  
Women Assistant Professors in Chemical Engineering: Developing Your Career workshop, AICHe Women's Initiatives Committee, AICHe Annual Meeting, 2014  
Write Winning Grant Proposals, Grant Writers' Seminars & Workshops, OSU, 2014

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Institute for Teaching and Learning Excellence Early Career Faculty Support Program, OSU, 2014–2015  
An Introduction to Evidence-Based Undergraduate STEM Teaching coursera online course, Center for the Integration of Research, Teaching, and Learning, Virtual, 2014  
Association for Women in Mathematics Workshop for Graduate Students & Recent PhDs, SIAM Annual Meeting, 2014  
NextProf future faculty workshop for women in engineering, University of Michigan, 2013  
Path of Professorship future faculty workshop for women, MIT, 2012  
Negotiating the Ideal Faculty Position future faculty workshop for underrepresented groups in science and engineering, Rice University, 2012  
Introduction to Science Education graduate course for scientists and engineers, UIUC, 2011  
Women Graduate Students in Chemical Engineering: Development for an Academic Career workshop, AIChE Women's Initiatives Committee, AIChE Annual Meeting, 2010  
College Teaching & Academic Careers graduate course, UIUC, 2009  
Certificate in Foundations of Teaching, Center for Teaching Excellence, UIUC, 2009