

E(Sarah) Du, PhD

Department of Ocean and Mechanical Engineering

Department of Biomedical Engineering

College of Engineering and Computer Science

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EDUCATION

Postdoctoral training, Massachusetts Institute of Technology, Cambridge, USA 2011 – 2014

PhD of Mechanical Engineering, Stevens Institute of Technology, Hoboken, USA 2011

MS of Mechanical Engineering, Wuhan University, Wuhan, China 2005

BS of Mechanical Engineering, Wuhan University, Wuhan, China 2002

ACADEMIC/PROFESSIONAL APPOINTMENTS

Co-director, Center for SMART Health, Florida Atlantic University 04/2022 - current

Associate professor, OME/CECS, Florida Atlantic University 08/2019 - current

Assistant professor, OME/CECS, Florida Atlantic University 08/2014 - 07/2019

EXTERNAL GRANTS

[1] The development of flexible wearable sensors to alert for heart failure decompensation and reduce hospital admissions, Phase 2: Sensor Validation

Southern Nursing Research society SNRS research grant award (2024)

Du (co-PI) with PI Dr. Leavitt

[2] Functional investigation of a novel and essential subcellular compartment in Plasmodium falciparum transmission stage parasites

NIH # R01AI169648 subaward from Boston Children's Hospital (04/2022-03/2025)

Du (co-PI) with PI Dr. Oleinikov

[3] Acquisition of a Transmission Electron Microscope to Enhance Multidisciplinary Research and STEM Education

Department of Defense #W911NF2110147 (5/2021 – 4/2022)

Du (co-PI) with PI Dr. Merk

[4] A Multiscale Experimental Approach to Study the Mechanobiology and Failure of Hemosomes
NSF #1941655 with REU supplement (10/2020 – 9/2024)

Du (PI)

[5] A Novel Bioimpedance Sensor for Intracellular Hemoglobin Analysis in Single Sickle cells
NSF #2032730 (9/2020 – 8/2024)

Du (PI)

[6] Alzheimer's disease supplement for virtual neuroprosthesis

NIH # 3R01EB025819-04S1(9/2020 – 6/2023)

Du (multi-PI) with contact PI Dr. Engberg and other multi-PIs Drs. Wei, Tognoli, and Hutchinson

- [7] Diversity Supplement for Virtual Neuroprosthesis
NIH # R01EB025819-03S1 (9/2019 – 6/2022)
Du (multi-PI) with contact PI Dr. Engberg and other multi-PIs Drs. Wei, Tognoli, and Hutchinson
- [8] Validation of Imaging and Electrical Impedance-based Microfluidic Assays for Cell Sickling
NIH # OT2HL152638-01(9/2019 – 2/2020)
Du (PI)
- [9] Effect of neuronal activity on synaptopathy in Alzheimer's disease using a novel multi-electrode microfluidic platform
Florida Department of Health #9AZ06 (3/2019 – 2/2021)
Du (co-PI) with PI Dr. Wei
- [10] SCH: INT: Virtual Neuroprosthesis: Restoring Autonomy to People Suffering From Neurotrauma
NIH R01EB025819 (9/1/2017 – 6/30/2023)
Du (multiple PI) with PI Dr. Engeberg
- [11] Placenta-on-a-Chip Sensing Platform to Study Placental Malaria
NIH R21 HD092779-02 (7/14/2017 – 6/30/2020)
Du (PI)
- [12] Multiscale Modeling of Water Absorption and Mechanical Strength of Polymer Matrix Composite Materials Containing Voids
NSF CMMI-1562062 (6/1/2016 - 5/31/2020)
Du (PI)
- [13] Dynamic and Fatigue Analysis of Healthy and Diseased Red Blood Cells
NSF CMMI-1635312 (9/1/2016 – 8/31/2020)
Du (PI)
- [14] Targeting cMyc in the control of Inflammation in Acute Lung Injury
NIH subaward from University of Miami, #R01HL128536 (8/10/2017 – 7/9/2018)
Du (subaward PI)
- [15] CRII: SCH: A Smart Biosensor for Monitoring Cell Sickling in Patients with Sickle Cell Disease
NSF IIS-1464102 (6/9/2015 – 8/31/2018)
Du (PI)

INTERNAL GRANTS

- [1] Acquiring a Reverse Engineering System to Support Engineering Design and Innovation
FAU TechFee (2024)
Du (PI)
- [2] A Novel Biophysical Progression Marker for Huntington's disease
I-SENSE seed grant (2023 – 2024)
Du (co-PI) with PI Dr. Wei
- [3] Development of a microfluidic cell prism for label-free cell sorting between live and dead plasmodium falciparum parasites
I-HEALTH seed grant (2022 – 2023)
Du (PI) with co-PI Dr. Oleinikov

- [4] Development of flexible skin sensors to predict heart failure decompensation and reduce hospital admissions
I-SENSE seed grant (2019 - 2020)
Du (co-PI) with PI Dr. Asghar and other co-PIs Drs. Mahgoub and Leavitt
- [5] Multidiscipline Capacity Building to Expand Microfluidics for Environmental and Oceanographic Method Design
I-SENSE seed grant (4/2018 – 4/2019)
Du (co-PI) with PI Dr. Beckler
- [6] Robo symbiosis with neuronal action potential sensing electrodes (ROBO-SYNAPSE): Noninvasive investigation of neural plasticity
I-SENSE seed grant (12/2016- 12/2017)
Du (co-PI) with PI Dr. Engeberg
- [7] Request for a Multiphysics Simulation Workstation
FAU TechFee (2016)
Du (PI)

REFERRED JOURNAL PUBLICATION

- [1] U.A. Gurkan, D.K. Wood, D. Carranza, L.H. Herbertson, S.L. Diamond, **E. Du**, S. Guha, J. Di Paola, P.C. Hines, I. Papautsky, Next generation microfluidics: fulfilling the promise of lab-on-a-chip technologies, *Lab on a Chip* 24(7) (2024) 1867-1874.
- [2] C. Ades, M.A. Abd, D.T. Hutchinson, E. Tognoli, **E. Du**, J. Wei, E.D. Engeberg, Biohybrid Robotic Hand to Investigate Tactile Encoding and Sensorimotor Integration, *Biomimetics* 9(2) (2024) 78.
- [3] Y. Qiang, D. Dieujuste, J. Liu, O. Alvarez, **E. Du**, Rapid electrical impedance detection of sickle cell vaso-occlusion in microfluidic device, *Biomedical microdevices* 25(3) (2023) 23.
- [4] D. Dieujuste, A.K. Alamouti, H. Xu, **E. Du***, Amplitude-Modulated Electrodeformation to Evaluate Mechanical Fatigue of Biological Cells, *JoVE (Journal of Visualized Experiments)* (200) (2023) e65897.
- [5] M.O. Ayanoglu, L.A. Carlsson, **E. Du***, Effects of void content on the moisture uptake and mechanical strength of a glass/epoxy composite, *Journal of Composite Materials* 57(2) (2023) 325-336.
- [6] B. Mosavati, A. Oleinikov, **E. Du***, 3D microfluidics-assisted modeling of glucose transport in placental malaria, *Scientific Reports* 12(1) (2022) 15278.
- [7] S.M. Iqbal, I. Mahgoub, **E. Du**, M.A. Leavitt, W. Asghar, Development of a wearable belt with integrated sensors for measuring multiple physiological parameters related to heart failure, *Scientific reports* 12(1) (2022) 20264.
- [8] Y. Qiang, J. Liu, M. Dao, **E. Du***, In vitro assay for single-cell characterization of impaired deformability in red blood cells under recurrent episodes of hypoxia, *Lab on a Chip* 21(18) (2021) 3458-3470. Featured as inside [Cover Art](#) and by [NSF Research News](#).
- [9] J. Liu, Y. Qiang, **E. Du***, Dielectric spectroscopy of red blood cells in sickle cell disease, *Electrophoresis* 42(5) (2021) 667-675.
- [10] S.M. Iqbal, I. Mahgoub, **E. Du**, M.A. Leavitt, W. Asghar, Advances in healthcare wearable devices, *NPJ Flexible Electronics* 5(1) (2021) 9.
- [11] D. Dieujuste, Y. Qiang, **E. Du***, A portable impedance microflow cytometer for measuring

- cellular response to hypoxia, *Biotechnology and bioengineering* 118(10) (2021) 4041-4051.
- [12] Y. Tian, **E. Du***, F. Abdelmola, Y. Qiang, L.A. Carlsson, Rapid Characterization of water diffusion in polymer specimens using a droplet-based method, *Langmuir* 36(26) (2020) 7309-7314.
- [13] B. Mosavati, A.V. Oleinikov, **E. Du***, Development of an organ-on-a-chip-device for study of placental pathologies, *International Journal of Molecular Sciences* 21(22) (2020) 8755.
- [14] J. Liu, O. Chesnokova, I. Oleinikov, Y. Qiang, A.V. Oleinikov, **E. Du***, Optimization of in vitro trophoblast assay for real-time impedimetric sensing of trophoblast-erythrocyte interactions in *Plasmodium falciparum* malaria, *Analytical and bioanalytical chemistry* 412 (2020) 3915-3923.
- [15] S. Ilyas, M. Sher, **E. Du**, W. Asghar, Smartphone-based sickle cell disease detection and monitoring for point-of-care settings, *Biosensors and Bioelectronics* 165 (2020) 112417.
- [16] K.N. Galpayage Dona, **E. Du***, J. Wei, An impedimetric assay for the identification of abnormal mitochondrial dynamics in living cells, *Electrophoresis* (2020).
- [17] K.N. Galpayage Dona, **E. Du***, L.A. Carlsson, D.M. Fletcher, R.P. Boardman, Modeling of water wicking along fiber/matrix interface voids in unidirectional carbon/vinyl ester composites, *Microfluidics and Nanofluidics* 24 (2020) 1-9.
- [18] Y. Qiang, J. Liu, M. Dao, S. Suresh, **E. Du***, Mechanical fatigue of human red blood cells, *Proceedings of the National Academy of Sciences* 116(40) (2019) 19828-19834.
- [19] J. Liu, Y. Qiang, O. Alvarez, **E. Du***, Electrical impedance characterization of erythrocyte response to cyclic hypoxia in sickle cell disease, *ACS sensors* 4(7) (2019) 1783-1790. Featured as [Journal Supplementary Cover Art](#).
- [20] J. Liu, B. Mosavati, A.V. Oleinikov, **E. Du***, Biosensors for detection of human placental pathologies: a review of emerging technologies and current trends, *Translational Research* 213 (2019) 23-49.
- [21] F. Herisson, I. Zhou, J. Mawet, **E. Du***, A.H. Barfejani, T. Qin, M.J. Cipolla, P.Z. Sun, N.S. Rost, C. Ayata, Posterior reversible encephalopathy syndrome in stroke-prone spontaneously hypertensive rats on high-salt diet, *Journal of Cerebral Blood Flow & Metabolism* 39(7) (2019) 1232-1246.
- [22] **E. Du**, M. Dao, Faster sickling kinetics and sickle cell shape evolution during repeated deoxygenation and oxygenation cycles, *Experimental mechanics* 59 (2019) 319-325.
- [23] Y. Qiang, J. Liu, F. Yang, D. Dieujuste, **E. Du***, Modeling erythrocyte electrodeformation in response to amplitude modulated electric waveforms, *Scientific reports* 8(1) (2018) 10224.
- [24] Y. Qiang, J. Liu, **E. Du***, Dielectrophoresis testing of nonlinear viscoelastic behaviors of human red blood cells, *Micromachines* 9(1) (2018) 21.
- [25] J. Liu, Y. Qiang, O. Alvarez, **E. Du***, Electrical impedance microflow cytometry with oxygen control for detection of sickle cells, *Sensors and Actuators B: Chemical* 255 (2018) 2392-2398.
- [26] **E. Du***, Y. Qiang, J. Liu, Erythrocyte membrane failure by electromechanical stress, *Applied Sciences* 8(2) (2018) 174.
- [27] Y. Qiang, J. Liu, **E. Du***, Dynamic fatigue measurement of human erythrocytes using dielectrophoresis, *Acta biomaterialia* 57 (2017) 352-362.
- [28] X. Li, **E. Du**, M. Dao, S. Suresh, G.E. Karniadakis, Patient-specific modeling of individual sickle cell behavior under transient hypoxia, *PLoS computational biology* 13(3) (2017) e1005426.
- [29] S. Muenster, A. Beloiartsev, B. Yu, **E. Du**, S. Abidi, M. Dao, G. Fabry, J.A. Graw, M. Wepler, R. Malhotra, Exposure of stored packed erythrocytes to nitric oxide prevents transfusion-

associated pulmonary hypertension, *Anesthesiology* 125(5) (2016) 952-963.

[30] X. Li, **E. Du**, H. Lei, Y.-H. Tang, M. Dao, S. Suresh, G.E. Karniadakis, Patient-specific blood rheology in sickle-cell anaemia, *Interface focus* 6(1) (2016) 20150065.

[31] P. Hosseini, S.Z. Abidi, **E. Du**, D.P. Papageorgiou, Y. Choi, Y. Park, J.M. Higgins, G.J. Kato, S. Suresh, M. Dao, Cellular normoxic biophysical markers of hydroxyurea treatment in sickle cell disease, *Proceedings of the National Academy of Sciences* 113(34) (2016) 9527-9532.

[32] **E. Du**, M. Diez-Silva, G.J. Kato, M. Dao, S. Suresh, Kinetics of sickle cell biorheology and implications for painful vasoocclusive crisis, *Proceedings of the National Academy of Sciences* 112(5) (2015) 1422-1427.

[33] **E. Du**, M. Dao, S. Suresh, Quantitative biomechanics of healthy and diseased human red blood cells using dielectrophoresis in a microfluidic system, *Extreme Mechanics Letters* 1 (2014) 35-41.

[34] **E. Du**, S. Ha, M. Diez-Silva, M. Dao, S. Suresh, A.P. Chandrakasan, Electric impedance microflow cytometry for characterization of cell disease states, *Lab on a Chip* 13(19) (2013) 3903-3909.

[35] **E. Du**, S. Manoochchri, Optimal design of microgrooved channels with electrokinetic pumping for lab-on-a-chip applications, *IET nanobiotechnology* 4(2) (2010) 40-49.

[36] **E. Du**, S. Manoochchri, Microfluidic pumping optimization in microgrooved channels with ac electrothermal actuations, *Applied Physics Letters* 96(3) (2010).

[37] D. Song, Z. Wei, J. Zou, S. Yang, **E. Du**, H.-L. Cui, Pressure sensor based on fiber Bragg grating and carbon fiber ribbon-wound composite cylindrical shell, *IEEE Sensors Journal* 9(7) (2009) 828-831.

[38] X.-h. Xiao, G.-p. Wu, **E. Du**, S.-p. Li, Impacts of flexible obstructive working environment on dynamic performances of inspection robot for power transmission line, *Journal of Central South University of Technology* 15(6) (2008) 869-876.

[39] **E. Du**, S. Manoochchri, Electrohydrodynamic - mediated dielectrophoretic separation and transport based on asymmetric electrode pairs, *Electrophoresis* 29(24) (2008) 5017-5025.

[40] **E. Du**, S. Manoochchri, Enhanced ac electrothermal fluidic pumping in microgrooved channels, *Journal of Applied Physics* 104(6) (2008).

[41] **E. Du**, H. Cui, Z. Zhu, Review of nanomanipulators for nanomanufacturing, *International Journal of Nanomanufacturing* 1(1) (2006) 83-104.

[Complete list of publications, please refer to [Google Scholar](#)]

CONFERENCE PRESENTATIONS AND PROCEEDINGS

International

[1] **E. Du**, H.Xu, J. Wei, Electro-deformation Spectroscopy of Biological Cells, The 19th IEEE International Conference on Nano/Micro Engineered and Molecular Systems, Kyoto, Japan, May 2-5, 2024.

[2] C. Ades, M.A. Abd, **E. Du**, J. Wei, E. Tognoli, E.D. Engeberg, Robotically Embodied Biological Neural Networks to Investigate Haptic Restoration with Neuroprosthetic Hands, 2022 IEEE Haptics Symposium (HAPTICS), IEEE, 2022, pp. 1-7.

[3] Y. Qiang, J. Liu, D. Dieujuste, K. Ramsamooj, **E. Du**, Continuous Cell Sorting by

Dielectrophoresis in a Straight Microfluidic Channel, ASME 2018 International Mechanical Engineering Congress and Exposition, 2018.

[4] J. Liu, Y. Qiang, **E. Du**, Measurement of electrical properties of sickle cells from electrical impedance of cell suspension, ASME International Mechanical Engineering Congress and Exposition, American Society of Mechanical Engineers, 2017, p. V003T04A026.

[5] K.N.U. Galpayage Dona, J. Liu, Y. Qiang, **E. Du**, A. Lau, Electrical equivalent circuit model of sickle cell, ASME International Mechanical Engineering Congress and Exposition, American Society of Mechanical Engineers, 2017, p. V010T13A029.

[6] S. Ha, M. Diez-Silva, **E. Du**, S. Kim, J. Han, M. Dao, A.P. Chandrakasan, Microfluidic electric impedance spectroscopy for Malaria diagnosis, Proceedings of the 16th International Conference on Miniaturized Systems for Chemistry and Life Sciences, 2012, pp. 1960-1962.

[7] K. Manoocheri, **E. Du**, Development of a Microfluidic Mixer for Lab-on-a-Chip Applications With Active and Passive Actuators, International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, 2010, pp. 447-451.

[8] S. Jang, **E. Du**, K. Pochiraju, S. Manoocheri, Simulation and Experimental Studies of Electrothermal Behaviors of Microwire Initiators for Fusing Applications, International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, 2010, pp. 827-832.

[9] **E. Du**, S. Manoocheri, Optimal Design of an Electrothermal Microfluidic Pump, International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, 2009, pp. 445-452.

[10] **E. Du**, S.P. Manoocheri, Numerical Simulation of AC Electrothermal Microfluidic Pumping, International Conference on Integration and Commercialization of Micro and Nanosystems, 2008, pp. 487-493.

[11] **E. Du**, S. Manoocheri, Microgrooves Enhanced AC Electrothermal Pumping for High Conductivity Microfluids, International Design Engineering Technical Conferences and Computers and Information in Engineering Conference, 2008, pp. 831-837.

[12] G. Wu, X. Xiao, **E. Du**, S. Li, Kinematics and Dynamics Simulation of Inspection Robot for Power Transmission Line, Proceedings of the 5th WSEAS Int. Conf. on Signal Processing, Robotics and Automation, 2006.

National

[1] **E. Du**, Y. Qiang, Biomechanical Testing of Human Red Blood Cells Under Controlled Oxygen Tension, Mechanics of Biological Systems and Materials & Micro-and Nanomechanics & Research Applications: Proceedings of the 2020 Annual Conference on Experimental and Applied Mechanics, Springer International Publishing, 2021, pp. 63-65.

[2] D. Dieujuste, J. Liu, **E. Du**, O.A. Alvarez, Development of a Low-Cost Electrical Impedance-Based Microflow Cytometer, American Society of Hematology Washington, DC, 2019.

[3] L.A. Carlsson, **E. Du**, Water uptake in polymer composites with voids, Durability of Composites in a Marine Environment 2 (2018) 33-57.

[4] P.T. So, P. Hosseini, S.Z. Abidi, **E. Du**, D.P. Papageorgiou, Y. Park, J. Higgins, G.J. Kato, S. Suresh, M. Dao, Cellular biophysical markers of hydroxyurea treatment in sickle cell disease, Biomedical Imaging and Sensing Conference, SPIE, 2017, pp. 3-4.

- [5] Y. Qiang, J. Liu, M. Mian, **E. Du**, Experimental electromechanics of red blood cells using dielectrophoresis-based microfluidics, *Mechanics of Biological Systems and Materials*, Volume 6: Proceedings of the 2016 Annual Conference on Experimental and Applied Mechanics, Springer International Publishing, 2017, pp. 129-134.
- [6] J. Liu, Y. Qiang, M. Mian, W. Xu, **E. Du**, Rheology of soft and rigid micro particles in curved microfluidic channels, *Mechanics of Biological Systems and Materials*, Volume 6: Proceedings of the 2016 Annual Conference on Experimental and Applied Mechanics, Springer International Publishing, 2017, pp. 83-87.
- [7] **E. Du**, Microfluidic approaches for biomechanics of red blood cells, *Mechanics of Biological Systems and Materials*, Volume 6: Proceedings of the 2016 Annual Conference on Experimental and Applied Mechanics, Springer International Publishing, 2017, pp. 89-93.
- [8] X. Li, **E. Du**, Z. Li, Y.-H. Tang, L. Lu, M. Dao, G. Karniadakis, Patient-specific modeling and analysis of dynamic behavior of individual sickle red blood cells under hypoxic conditions, *APS Division of Fluid Dynamics Meeting Abstracts*, 2015, p. R23. 012.
- [9] A.B. S Muenster, **E. Du**, M Dao, W M Zapo, Transient ex vivo Exposure of Stored Red Blood Cells (RBCs) to Nitric Oxide Gas Prevents Pulmonary Hypertension in Awake Lambs, *AABB Annual Meeting*, 2014, p. 50A.
- [10] X. Li, L. Huan, **E. Du**, Dao, Ming, G. Karniadakis, Rheology of sickle cell anemia: Effects of heterogeneous RBC shapes, *Society for Industrial and Applied Mathematics Annual Meeting*, 2014.
- [11] **E. Du**, L. Mendelsohn, J.S. Nichols, M. Dao, G.J. Kato, Quantification of anti-sickling effect of Aes-103 in sickle cell disease using an in vitro microfluidic assay, *Blood* 124(21) (2014) 2699.
- [12] **E.D.** Seongjin Jang, Daizong Li, Nelson Pinilla, Biruk Gebre, Kishore Pochiraju, Souran Manoochehri, Electrothermal analysis of micro/nanowire initiators for energy production applications, *PowerMEMS 2009*, 2009, pp. 451-454.

INVITED TALKS

- [1] Invited talk, Functional Fluidics, Pediatric Critical Care Medicine, Wayne State University, August 4, 2023.
- [2] Invited talk, National Heart, Lung, and Blood Institute (NHLBI), NIH Next Generation Microfluidics Workshop, online, November 5, 2021.
- [3] Invited talk, Institute of Fluid Engineering, Zhejiang University, December 24, 2021.
- [4] Keynote speech, Dielectrophoresis 2020.1Hybrid: Online and in Flagstaff, USA, July 18, 2021.
- [5] Invited talk, The 14th Annual Sickle Cell Disease Research and Educational Symposium and 43rd National Sickle Cell Disease Scientific Meeting, September 23-25, 2020.
- [6] Invited talk, Institute of Fluid Engineering, Zhejiang University, December 19, 2020.
- [7] Keynote speech, The 3rd International Conference on Advanced Materials and Process Engineering, Hangzhou, China, December 16-18, 2019.
- [8] Invited talk, Department of Chemistry Seminar Series, Florida Atlantic University, September 15, 2018.
- [9] Invited talk, Department of Mechanical Engineering, Hangzhou Dianzi University, China, April 26, 2018.
- [10] Invited talk, the 2018 Energy Materials and Nanotechnology Summit, Chengdu, China,

May 15, 2018.

- [11] Invited Talk, OneBlood Clinical Discovery Institute, Ft. Lauderdale, March 28, 2018.
- [12] Invited talk, Department of Mechanical Engineering Seminar Series, University of Miami, November 14, 2017.
- [13] Invited talk, Department of Mechanical Engineering Seminar Series, Ningbo University, China, December 15, 2016.
- [14] Invited talk, Ocean Engineering Seminar Series, Florida Atlantic University, March 15, 2016.
- [15] Invited talk, Trividia Health Inc., Florida, July 16, 2015.
- [16] Invited talk, NOVA Southeastern University, September 24, 2014.
- [17] Invited talk, Physics Colloquium, Florida Atlantic University, October 27, 2014.
- [18] Invited talk, Karniadakis Crunch Group Seminar series, Applied Mathematics, Brown University, October 18, 2013.
- [19] Invited talk, Sickle Cell Vascular Disease Section, National Institutes of Health, MD, December 12, 2012.

PATENT

- [1] **E. Du**, D. Dieujuste, J. Liu, Y. Qiang, Portable electrical impedance-based blood testing device for diagnosis and monitoring sickle cell disease, US Patent App. 18/118,277, 2023.
- [2] **E. Du**, Y. Qiang, D. Dieujuste, J. Liu, Vascular occlusion testing device, US Patent App. 17/313,235, 2022.

TEACHING, EDUCATION AND MENTORING

Courses

- [1] EML4534 Computer Applications II in ME
- [2] BME4581 Introduction to Microfluidics (new development)
- [3] BME6585 Advanced Topics in Microfluidics and BioMEMS (new development)
- [4] EML3701 Fluid Mechanics
- [5] EGN1002 Fundamentals of Engineering
- [6] EGN4670C Innovative Sensing and Actuating Technologies (new development)
- [7] EML2213 Computer Applications in Engineering I

Supervision and co-supervision of postdocs

- [1] Dr. Yuhao Qiang, Postdoc researcher (2020)
- [2] Dr. Fatmaelzahraa Abdelmola, Postdoc researcher (2020)
- [3] Dr. Jinzi Deng, Postdoc researcher (2019)
- [4] Dr. S.M. Sabet, Postdoc researcher (2016 - 2017)

Supervision of graduate students

- [1] Liliana Ponkratova, MS (2024 – current)
- [2] Adeleh Kazemialamouti, PhD student (2023 – current)
- [3] Mustafa Ayanoglu, PhD (Apr. 2024), co-adviser Dr. Carlsson
- [4] Oladiran Oladokun, MS (Apr. 2024)
- [5] Samaneh Rikhtehgaran, PhD (Jul. 2023) co-adviser Dr. Luc Wille
- [6] Darryl Dieujuste, PhD (Jul. 2023)

- [7] Babak Mosavati, PhD (May 2022)
- [8] Galpayage Dona Udeni, PhD (Sep. 2020), co-adviser Lau
- [9] Jia Liu, PhD (Dec. 2019)
- [10] Yuhao Qiang, PhD (Jul. 2019)
- [11] Yining Tian, MS (May 2019)

As thesis/dissertation committee member

- [1] Tyler Ogg, PhD student (2024 – current), adviser Dr. Engeberg
- [2] Genevieve Liddle, PhD (Aug. 2022), adviser Dr. Wei
- [3] Sandhya Sharma, PhD, advisor Dr. Asghar (May 2022)
- [4] Mazhar Sher, PhD, advisor Dr. Asghar (May 2020)
- [5] Mohammad Mastiani, PhD, advisor Dr. Kim (Dec. 2019)
- [6] Joseph Ingicco, MS, advisor Dr. Engeberg (May 2019)

Supervision of undergraduate students

- [1] Jacob Askins, NSF REU researcher & FAU SURF fellowship awardee, ME, FAU (2023 – current)
- [2] Mohammad Hanif, NSF REU researcher & FAU SURF fellowship awardee, ME, FAU (2023-current)
- [3] Matthew Mccrory, NSF REU researcher, ME, FAU (2023 – current)
- [4] Nicolas Giovine, NSF REU researcher, ME, FAU, (2023 – current)
- [5] Shilei Richards, ME, FAU (Fall 2023 – Spring 2024)
- [6] Abraham Silva, ME, FAU (Fall 2023 – Spring 2024)
- [7] Alvaro Morales, ME, FAU (Fall 2023 – Spring 2024)
- [8] Gineson Rousseau, ME, FAU (Fall 2023 – Spring 2024)
- [9] Jacob Mullins, ME, FAU (Fall 2023 – Spring 2024)
- [10] Smith Matthias, ME, FAU (Fall 2023 – Spring 2024)
- [11] Joshua Donjuan, NSF REU researcher, ME, FAU (2022- 2023)
- [12] Connor Hopgood, NSF REU researcher, ME, FAU (Spring 2023)
- [13] Brandon Yu, ME, FAU (Spring 2022)
- [14] Delaney Dobson, ME, FAU (Summer 2021)
- [15] Guillermo Gayoso, ME, FAU (Summer 2021)
- [16] Ladd Brown, ME, FAU (2020 – 2021)
- [17] Roberson Robert, NSF learn scholar, FAU (Spring 2021)
- [18] Anthony Nguyen, NSF learn scholar, FAU (Spring 2021)
- [19] Napatarong (Bill) Wannaphaschaiyong, ME, FAU (2018)
- [20] Darryl Dieujuste, EECS, FAU (Summer 2016)
- [21] Lyndsey Mandelare, ME, FAU (2016)
- [22] Katrina Ramsamooj, Chemistry, FAU, 2nd place -poster presentation, at the 8th FAU undergraduate research symposium. (2016)
- [23] Rachel Zhuang, Biomedical engineering, University of Southern California (2015)
- [24] Michal Mian, ME, FAU (2015- 2016)
- [25] Sara Zima, Biology, FAU (2015)

SERVICE

Professional association

- [1]. American Society of Mechanical Engineers (ASME), member, lifetime member
- [2]. Society for Experimental Mechanics (SEM), lifetime member
- [3]. Applied Physics Society (APS), lifetime member

Editorial board member

- [1]. Scientific Reports
- [2]. Soft Matter Physics (Frontiers in Physics)
- [3]. MDPI BioTech

Conference/Seminar chair/organizer and guest editor

- [1]. Guest editor of the [Biosensors collection](#) for Scientific Reports, other guest editors Dr. Monika Janik and Dr. M. Selim Ünlü, 2024.
- [2]. Organizer for the SMART Health webinar and seminar series, Center for SMART Health, FAU, Spring 2024.
- [3]. Organizer for the SMART Health seminar series, Center for SMART Health, FAU, Fall 2023.
- [4]. Organization committee “Translation - How to integrate Microfluidics into the clinic”, NIH/NHLBI Next Generation Microfluidics workshop, November 5, 2021.
- [5]. The 3rd International Conference on Advanced Materials and Process Engineering, Dec. 16-18, 2019.
- [6]. Co-organizer for the 2017 ASME/IMECE symposium on mechanobiology, Tampa, FL, Nov. 3–9, 2017.
- [7]. Session Chair for the 2016 annual meeting of the Society for Experimental Mechanics, Orlando, FL, Jun. 6-9, 2016.

Federal grant reviewer

- [1]. National Science Foundation (NSF): EBMS, SENSE, BMMB, CAREER, MOMS, CPS etc.
- [2]. National Institutes of Health (NIH): ISD, EBIT, CSR, BST, Catalyze etc.

HONORS AND AWARDS

- [1] Nominated member of the National Academy of Inventors - FAU Chapter, 2024
- [2] Researcher of the Year award (Associate professor rank), FAU, 2022
- [3] STEM Educator award, The Engineers’ Council, 2019
- [4] Researcher of the Year award (Assistant professor rank), FAU, 2018
- [5] Faculty Research Mentoring Program award, FAU, 2015
- [6] mHealth Scholar, NIH-UCLA, 2015
- [7] James Harry Potter Award for outstanding performance in doctorate program, Stevens Institute of Technology, 2011