KAITLYN **CRAWFORD**, Ph.D.

Assistant Professor
Materials Science & Engineering

Developing Tomorrow's Materials, Today

CONTACT

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EDUCATION

Ph.D., Chemistry
U. Maryland, College Park
Mentor: Larry Sita
2011-2015

M.S., Chemistry
North Carolina State U.
Mentor: Chris Gorman
2009-2011

B.S., Chemistry
B.S., Psychology
UNC at Charlotte
Mentor: Sherine Obare
2003-2009

EXPERIENCE

Assistant Professor, MSE
Biionix Cluster Member
U. Central Florida (UCF)
2017 – current

Courtesy Appointments in Chemistry, and the Nano Science and Technology Center at UCF
2019 – current

Postdoctoral Associate,
Center for Biointegrated Electronics; Northwestern
Mentor: John Rogers
2016 – 2017

Postdoctoral Associate,
Materials Science and Engineering; UIUC
Mentor: John Rogers
2015 – 2016

RESEARCH

Current funding as PI: $1.6 million
Pending funding as PI: $849,000
Publications: 24
Citations: >1,300 (as of Jan. 2023)
Invited talks: 11
Awards/ Honors: 12

MENTORSHIP

Ph.D. students graduated: 1
Current Ph.D. students: 2
Total postdoctoral associates: 2
Total undergraduate students: 11
High school students: 1
Awards/ Honors for my students: 17
Ph.D. thesis committee member: 8

MY VISION

is for carbon-based electronics to be sustainable and designed for next-life use. I aim to lead transdisciplinary research programs that nucleate revolutionary transformations at the interface of sustainable electronics and soft materials.

RESEARCH DIVERSITY

Polymers:	biodegradable; polymer brushes; polyolefins, block copolymers; nonlinear optic polymer composites; polysaccharides; materials characterization; microfibers; chain- and step-growth polymerization
Flexible Electronics:	thermal conductivity; heat stress; sweat accumulation; hydration; piezoelectric; UV-exposure; blood flow; strain gauge; optogenetic; bioresorbable; encapsulation
Chemistry:	synthesis; chromophores; nanoparticles; quantum dots
Related Applications:	telecommunications and quantum information technology; catalysis; neuromorphic computing with ML; microphase separation; health; degradation; neuromodulation; skin properties; tactile sensing; sweat sensing; moisture diffusion; energy harvesting

TEACHING at UCF

Unique classes taught: 5
# of students taught: 474
Avg. teaching score: 4.4 / 5.0

Prior to UCF

Chemistry lab instructor: 23 sections
# of students across sections: 800
Lab types: general, organic, analytical

SERVICE

★Chaired the development of UCF's new BS-MSE program

Faculty search committees: 3
Grad. admissions committees: 1
Grad. qualifying exam committees: 1
Journal guest editor: 2 journals
Peer manuscript reviewer: 6 journals
NSF and ACF PRF reviewer: 4 proposals
Co-organized workshops: 4
See page 11 for outreach activities

FUNDING

CURRENT; PI share: $1,010,628

Title: On Wireless Physiological Monitoring for Assessing Heat Stress Over Extended Periods.
Role: PI (Co-PI: K. Mukhopadhyay at UCF; subrecipients: UIUC and Northwestern)
Amount, Award Period, and Agency: $1,500,000; 2022 – 2025; Department of Homeland Security

Title: Electro-Optic Polymer Development and Performance Measurements
for Telecommunication and Quantum Applications. Role: PI
Amount, Award Period, Agency: $99,999; 2021 – 2023 (extended); imec-USA / UCF Seed Grant

Title: Durable and Transparent Dust-Repellant Coatings for Space Applications
Role: Co-PI (PI: K. Mukhopadhyay at UCF; other Co-PIs: E. Beltran, MD, and J. Brisset at UCF's FL Space Institute)
Amount, Award Period, Agency: $25,000; 2021 – 2023 (extended); Florida Space Grant Consortium, NASA

Title: Thermally Functional, Mechanically Durable, UV-Resistant Coatings for Dust Mitigation
Role: Co-PI (PI: K. Mukhopadhyay at UCF)
Amount, Award Period, Agency: $25,000; 2021 – 2023 (extended); UCF Seed Grant

PAST; PI share: $58,000

Title: Electro-Optic Polymers for Photonic Applications. Role: PI
Amount, Award Period, Agency: $53,000; 2019 – 2020; imec-USA

Title: Introducing Scientific Communication and Patent Writing
Skills through STEM Undergraduate Research.
Role: Co-PI (PI: K. Mukhopadhyay at UCF)
Amount, Award Period, Agency: $10,000 ($5,000 to me); 2018 – 2020; UCF Seed Grant

PUBLICATIONS (since at UCF) [+]joint co-author, [*]corresponding author

Citations: 0 IF: 10.68	Improving Disease Prevention, Diagnosis, and Treatment Using Novel Bionic Technologies. Manero A., **Crawford KE.**, Prock-Gibbs H., Shah N., Gandhi D., Coathup MJ.* *Bioengineering and Translational Medicine* 2022, e10359, 1. DOI: 10.1002/btm2.10359
Citations: 0 IF: new Issue Cover Art	Modular Synthesis of Zwitterionic, Xanthene Bridged, Low Twist Angle Chromophores with High Hyperpolarizability. Mohammad-Pour G., de Coene Y., Wiratmo M., Maan A., Clays K., Masunov AE., **Crawford KE*** *Materials Advances* 2022, *3*, 7520. DOI: 10.1039/D2MA00721E
Citations: 2 IF: 6.12 Issue Cover Art	Nickel Foam Supported Porous Copper Oxide Catalysts with Noble Metal-like Activity for Aqueous Phase Reactions. Shultz LR., Preradovic K., Ghimire S., Hadley HM., Xie S., Kashyap V., Beazley MJ., **Crawford KE.**, Liu F.,* Mukhopadhyay K.,* Jurca T.* *Catalysis Science and Technology* 2022, *12*, 3804. DOI: 10.1039/d1cy02313f
Citations: 5 IF: 6.53 Views: 2052	Polymeric Materials for Hemostatic Wound Healing. Ghimire S., Sarkar P., Rigby K., Maan A., Mukherjee S., **Crawford KE.**,* Mukhopadhyay K.* *Pharmaceutics* 2021, *13*, 1. DOI: 10.3390/pharmaceutics13122127
Citations: 0 IF: 4.98 Views: 2621	Xyloglucan Administration Reduces Disease Severity in the Dextral Sodium Sulfate Model of Mouse Colitis. Ross, E.,* Tigno-Aranjuez, J., Miller, M., Willenberg, A. **Crawford KE.**. *Clinical and Experimental Gastroenterology* 2021, *14*, 429. DOI: 10.2147/CEG.S325945
Citations: 16 IF: 7.63 Views: n/a	Growing Perovskite Quantum Dots on Carbon Nanotubes for Neuromorphic Optoelectronic Computing. Li J.,+ Dwivedi P.,+ Kumar K., Roy T., **Crawford KE.,*** Thomas J.* *Advanced Electronic Materials* 2021, *7*, 2000535. DOI: 10.1002/aelm.202000535
Citations: 239 IF: 69.5 Views: 27,000 In News: 37	A Wireless Closed-Loop System for Optogenetic Peripheral Neuromodulation. Mickle AD., Won SM., Noh KN., Yoon J., Meacham KW., Xue Y., McIlvried LA., Copits BA., Samineni VK., **Crawford KE.**, Kim DH., Srivastava P., Kim BH., Min S., Shiuan Y., Yun Y., Payne MA., Zhang J., Jang H., Li Y., Lai HH., Huang Y., Park S-I., Gereau RW.,* Rogers JA.* Nature 2019, *565*, 361. DOI: 10.103/s41586-018-0823-6
Citations: 88 IF: 18.03 Views: 5221	Multimodal Sensing with a Three-Dimensional Piezoresistive Structure. Won SM., Wang H., Kim BH., Lee K., Jang H., Kwon K., Han M., **Crawford KE.**, Li H., Lee Y., Yuan X., Kim SB., Oh YS., Jang WJ., Lee JY., Hang S., Kim J., Wang X., Xie Z., Zhang Y., Huang Y.,* Rogers JA.* ACS Nano 2019, *13*, 10972. DOI: 10.1021/acsnano.9b02030
Citations: 14 IF: 4.72 Views: 53 Issue Cover Art	Advanced Approaches for Quantitative Characterization of Thermal Transport Properties in Soft Materials Using Thin, Conformable Resistive Sensors. **Crawford KE.**+*, Ma Y.+, Wang X., Capua D., Krishnan S., Li Y., Huang Y., Rogers JA.* Extreme Mechanics Letters 2018, *22*, 27. DOI: 10.1016/j.eml.2018.04.002

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Citations: 12
IF: 19.92
Views: n/a

Thin, Millimeter Scale Fingernail Sensors for Thermal Characterization of Nail Bed Tissue. Li Y, Ma Y, Wei C, Luan H, Xu S, Han M, Zhao H, Liang C, Yang Q, Yang Y, **Crawford KE**, Feng X, Huang Y, Rogers JA.* *Advanced Functional Materials* 2018, *1801380*.
DOI: 10.1002/adfm.201801380

Magazine perspective

Novel Polymers for Use in Total Joint Arthroplasty. Seal S, Singh S, **Crawford K**, Brisbois E, Coathup M. *Advanced Materials and Processing* 2018, Oct. Issue, *30*.

Citations: 80
IF: 15.15
Views: n/a

Super-Absorbent Polymer Valves and Colorimetric Chemistries for Time-Sequenced Discrete Sampling and Chloride Analysis of Sweat via Skin-Mounted Soft Microfluidics. Kim SB, Zhang Y, Won SM, Bandodkar AJ, Sekine Y, Xue Y, Ostojich D, Koo J, Harshman SW, Martin JA, Park JM, Ray TR, **Crawford KE**, Yoon J, Kim JH, Lee KT, Choi J, Pitsch RL, Grigsby CC, Strang AJ, Chen YY, Xu S, Kim J, Koh A, Ha JS, Huang Y, Kim SW,* Rogers JA.* *Small* 2018, 1703334. DOI: 10.1002/smll.201703334

Citations: 56
IF: 19.92
Views: n/a

Natural Wax for Transient Electronics. Won SM+, Koo J+, **Crawford KE+**, Mickle AD, Xue Y, Min S, McIlvred LA, Yan Y, Kim SB, Lee SM, Kim BH, Jang H, MacEwan MR, Huang Y, Gereau RW IV, Rogers JA.* *Advanced Functional Materials* 2018, *1801819*.
DOI: 10.108/adfm.201801819

Citations: 37
IF: 4.99
Views: 4506

Optogenetic Silencing of Primary Afferents Reduces Evoked and Ongoing Bladder Pain. Samineni VK, Mickle AD, Yoon J, Grajales-Reyes JG, Pullen M, **Crawford KE**, Noh KN, Gereau GB, Vogt S, Lai HH, Rogers JA, Gereau RW.* *Scientific Reports* 2017, *7*, 15865.
DOI: 10.1038/s41598-017-16129-3

Citations: 66
IF: 18.03
Views: 2465

Dissolution of Monocrystalline Silicon Nanomembranes and of Their Use as Encapsulation Layers and Electrical Interfaces in Water-Soluble Forms of Electronics. Lee YK, Yu KJ, Song E, Farimani AB, Vitale F, Xie Z, Yoon Y, Kim Y, Richardson A, Luan H, Wu Y, Xie X, Lucas TH, **Crawford KE**, Mei Y, Feng X, Huang Y, Litt B, Aluru NR, Yin L, Rogers JA.* *ACS Nano* 2017, *11*, 12562. DOI: 10.1021/acsnano.7b06697

Citations: 83
IF: 7.93
Issue Cover Art

Fully Implantable, Battery-Free Wireless Optoelectronic Devices for Spinal Optogenetics. Samineni VK, Yoon J, **Crawford KE**, Jeong YR, Golden JP, Mickle AD, Shin G, Xie Z, Sundaram SS, McKenzie KC, Li Y, Yang MY, Kim J, Wu D, Xue Y, Feng X, Huang Y, Banks A, Ha JS, Rogers JA, Gereau RW.* *Pain* 2017, *1*. DOI: 10.1097/j.pain.0000000000000968

PUBLICATIONS (prior to UCF)

Citations: 73
IF: 19.92
Issue Cover Art

Flexible and Stretchable 3ω Sensors for Thermal Characterization of Human Skin. Tian L, Li Y, Webb RC, Krishnan S, Bian Z, Ning X, **Crawford KE**, Kurniawan J, Bonifas A, Ma J, Liu Y, Xie X, Chen J, Liu Y, Shi Z, Wu T, Ning R, Li D, Sinha S, Cahill DG, Huang Y,* Rogers JA.* *Advanced Functional Material* 2017, *27*, 1701282.
DOI: 10.1002/adfm.201701282

Citations: 45
IF: 8.12
Views: 6583

Multimodal Epidermal Devices for Hydration Monitoring. Krishnan S, Shi, Y, Webb RC, Ma Y, Bastein P, **Crawford KE**, Manco M, Kurniawan J, Tir E, Huang Y, Balooch G, Pielak RM, Rogers JA.* *Microsystems and Nanoengineering* 2017, *3*, 17014.
DOI: 10.1038/micronano.2017.14

Citations: 109 IF: 19.92 Issue Cover Art	Materials and Device Designs for an Epidermal UV Colorimetric Dosimeter with Near Field Communication Capabilities. Araki H, Kim J, Zhang S, Banks A, **Crawford KE**, Sheng X, Gutruf P, Pielak RM, Rogers JA.* *Advanced Functional Materials* 2017, *27*, 1604465. DOI: 10.1002/adfm.201604465
Citations: 36 IF: 6.90 Views: 1435	*De Novo* Design of a New Class of 'Hard-Soft' Amorphous, Microphase Separated Polyolefin Block Copolymer Thermoplastic Elastomer. **Crawford KE**, Sita LR.* *ACS Macro Letters* 2015, *4*, 921. DOI: 10.1021/acsmacrolett.5b00447
Citations: 11 IF: 6.90 Views: 670	Regio- and Stereospecific Cyclopolymerization of Bis(2-propenyl)-diorganosilanes and the Two-State Stereoengineering of 3,5-*cis, isotactic* Poly(3,5-methylene-1-silacyclohexane)s. **Crawford KE**, Sita LR.* *ACS Macro Letters* 2014, *3*, 506. DOI: 10.1021/mz500126r
Citations: 34 IF: 16.38 Views: 2200	Stereoengineering of Poly(1,3-methylenecyclohexane) via Two-State Living Coordination Polymerization of 1,6-Heptadiene. **Crawford KE**, Sita LR.* *Journal of the American Chemical Society* 2013, *135*, 8778. DOI: 10.1021/ja402262x
Citations: 11 IF: 2.70 Views: n/a	Comparison of the Growth and Degradation of Poly(glycolic acid) and Poly(ε-caprolactone) Brushes. Hu X, Hu G, **Crawford KE**, Gorman CB.* *Journal of Polymer Science Part A* 2013, *51*, 4643. DOI: 10.1002/pola.26885
Citations: 92 IF: 5.99 Views: 5022	Effects of Temperature and pH on the Degradation of Poly(lactic acid) Brushes. Xu L, **Crawford KE**, Gorman CB.* *Macromolecules* 2011, *44*, 4777. DOI: 10.1021/ma2000948

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HONORS and AWARDS

- Nominated for a Mentor of the Year Award; UCF. 2022
- Faculty Fellowship Program in Israel; Funded by the Jewish National Fund. 2021
  Prestigious invitation to meet and interact with faculty in Israel.
- Faculty Excellence Honoree, Women's History Month; UCF. 2021
  Women faculty at UCF are acknowledged for their contributions to supporting education and professional development of women.
- Undergraduate Research Program Mentor (5 students; $2,995 in awarded funds); UCF 2018 –
- Illinois Scholars Undergraduate Research Program Mentor (2 students; $400); UIUC 2016
- Board of Visitors Outstanding Graduate Research. 1st chemistry department recipient; $5k 2015
  College of Computer, Math, Engineering and Sciences at UMD, College Park
- Outstanding Graduate Research. Depart of Chemistry and Biochemistry at UMD, College Park. 2015
- Michael J. Pelczar Award for Excellence in Graduate Study. Graduate School at UMD, College Park. 2015
- American Chemical Society (ACS) Leadership Institute Invited Attendee: 2015
  Sponsored by Chemical Society of Washington (CSW); Dallas, TX.
- Honorable Mention for Nationally Recognized Outstanding Graduate Research: 2015
  ACS Division of Organic Chemistry (DOC).
- Winner of DOC Travel Fellowship Winner sponsored by DOC; College Park, MD. 2015
- GAANN Fellowship (Graduate Assistance in Areas of National Need): 2013
  Awarded by the Department of Chemistry and Biochemistry, UMD.
- Funding by U.S. Department of Education.
- Jacob K. Goldhaber Travel Award; Graduate School at UMD, College Park. 2013
- Travel award presented by Precision Polyolefins LLC. 2013
- Dennis Wertz Excellence of Teaching Award; Department of Chemistry, NCSU. 2010
- Outstanding Undergraduate Research; Carolina Chemistry (ACS, Piedmont Section). 2009
- Exceptional Research Presentation; Department of Chemistry, UNCC. 2009
- Best Poster Award; 237th ACS National Meeting, Div. Colloid and Surface Materials. 2009
- Excellence in Undergraduate Research Award; Carolina Chemistry Club. 2009

TEACHING ACTIVITIES

Graduate Student Courses

EMA 5060: Polymer Science and Engineering (33 students)

EMA 5937: Biomedical Sensor Fabrication, Characterization and Applications (8 students); *Redesigned course*

Undergraduate Student Courses

EGN 3365: Structure and Properties of Materials (332 students)

EMA 4506: Emerging Materials (70 students); *Redesigned course*

EMA 3000: Engineering Polymeric Materials (30 students); *Redesigned course*

EMA 4602C: Materials Processing Lab; Role: Co-design polymer crystallization kinetics experiment

Average student evaluation score over 7 semesters: 4.4 / 5.0

(UCF Departmental, College, and University averages typically range between 3.9-4.1 / 5.0)

PRESENTATIONS and POSTERS

Since at UCF (2017 – current)

Invited

- University of Tennessee, Knoxville; Knoxville, TN — Nov 2022
- Asilomar Bioelectronics workshop, Pacific Grove, CA — Sep 2022
- American Chemical Society (Analytical Chemistry); Chicago, IL — Aug 2022
- Materials Research Society (Bioelectronics); Boston, MA; virtual — Dec 2021
- American Chemical Society (Analytical Chemistry); virtual — Aug 2021
- Materials Research Society (Bioelectronics); virtual — Apr 2021
- North Carolina State University (Electrical Engineering); virtual — Oct 2020
- University of South Florida (Chemical Engineering); Tampa, FL — Feb 2020
- Guest Lecture: Topics in Biomedical Engineering (BME 6935); UCF — Oct 2020
- Polymers for Advanced Technologies (PAT) 2019; College Station, TX — Aug 2019
- Tosoh Gel Permeation Chromatography (GPC) workshop; New Orleans, LA — Jul 2019
- Automation, AI and Robotics workshop; Houston, TX — Mar 2019
- Kavli Foundation Bioelectronics workshop series 1 of 3; Rice U. Houston, TX — May 2018
- Guest Lecture: Polymer Science and Engineering (EMA-5060); UCF — Apr 2018
- Guest Lecture: Materials in Society (CHM-4506); UCF — Mar 2018
- Guest Lecture: Chemistry of Materials (CHM-6711); UCF — Feb 2018

Presented

- American Chemical Society (Polymers); Chicago, IL — Aug 2022
- American Chemical Society (Polymers); virtual — Apr 2021
- Southeast Regional American Chemical Society conference; Savannah, GA — Oct 2019
- Asilomar Bioelectronics workshop; Pacific Grove, CA — Sep 2019
- Gordan Research Conference (GRC): Bioelectronics; Andover, NH — Jun 2019
- Gordon Research Conference (GRC): Polymers; Hadley, MA — Jun 2019
- Materials Research Society conference; Boston, MA — Nov 2018
- Asilomar Bioelectronics workshop; Pacific Grove, CA — Sep 2018

Prior to UCF (2008 – 2016)

Presenter at more than 10 symposia on the following highlighted topics:

High Glass Transition Temperature Polyolefin and Poly(organosilane) Block Copolymers

- 44th National Organic Symposium; College Park, MD — 2015
- Polymers Gordon Research Conference (GRC); South Hadley, MA — 2015
- Polymer Physics Gordon Research Conference (GRC); South Hadley, MA — 2014
- Nano-Day University of Maryland; College Park, MD — 2014
- International Advances in Polyolefins Workshop; Santa Rosa, CA — 2013

Biodegradable Polymer Brushes used as a Temporary Protective Coating

- ACS - North Carolina Local Section Meeting; Raleigh, NC — 2010

Synthesis and Electrochemical Characterization of Bimetallic Pd/Ru Nanoparticles

- 237th International American Chemical Society Conference; Salt Lake City, UT — 2009
- University of North Carolina, Charlotte Nanocamp (invited lecture); Charlotte, NC — 2009
- 235th International American Chemical Society Conference; New Orleans, LA — 2008
- University of North Carolina, Charlotte Undergraduate symposium, Charlotte, NC — 2008

STUDENT MENTORING

Ph.D. Dissertation (Role: Committee Chair)

- Zi Wang, Materials Science & Engineering — Defended Fall 2021
  Thesis topic: Processing of 3D Porous Biomaterial Scaffolds to Enhance The In Vitro Breast Cancer Tumor Microenvironment
  Candidacy exam completed Spring 2019
  Employed: Application Engineer, 3D Systems; Fall 2022
  Employed: Postdoctoral Associate, Emory University; Spring 2022
- Tamar Yishay, Biomedical Engineering — Joined Fall 2022
  Thesis topic: Polymers in Flexible Electronics for Assessing Heat Stress
  Candidacy exam anticipated Spring 2024
- Aditya Maan, Materials Science and Engineering — Joined Summer 2020
  Thesis topic: Bioresorbable Polymers for Energy Harvesting and Sensing
  Candidacy exam anticipated Spring 2023
- Wei Zhang, Materials Science and Engineering — Fall 2018 – Spring 2020
  Research focus: Nonlinear Optic Polymers for telecommunications
- Nadia Aboutalebi, Materials Science and Engineering — Fall 2018 – Spring 2020
  Research focus: Macromolecular Interactions & Microstructures of Ferroelectrets

Ph.D. Dissertation (Role: Committee Member)

- Yuen Yee Li Sip, Materials Science & Engineering (Chair: Lei Zhai)
  Candidacy exam completed Spring 2022
- David Fairchild, Chemistry (Chair: Fernando Uribe-Romo) — Defended Fall 2022
  Candidacy exam completed Spring 2020
- Katelyn Bobek, Chemistry (Chair: Yu Yuan) — Defended Fall 2022
  Candidacy exam completed Spring 2020
- Thomas E. Shaw IV, Chemistry (Chair: Titel Jurca) — Defended Fall 2022
  Candidacy exam completed Fall 2019
- Md Erfanul Alam, Mechanical Engineering (Chair: Andrew Dickerson) — Defended Summer 2021
  Candidacy exam completed Spring 2020
- Sachit Shah, Materials Science & Engineering (Chair: Lorraine Leon) — Defended Fall 2021
  Candidacy exam completed Fall 2019
- Sara Tabandeh, Materials Science & Engineering (Chair: Lorraine Leon) — Defended Fall 2021
  Candidacy exam completed Spring 2019
- Cacie Hart, Materials Science & Engineering (Chair: Swami Rajaraman) — Defended Fall 2020
  Candidacy exam completed Fall 2019

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Post-Doctoral Fellows, Research Associates, and Visitors (Role: Primary Host)

- Gavin Pour, Ph.D. in Chemistry from UCF — Aug 2019 – May 2022
  - -Publication selected for inside cover-art; Mater. Adv.; Summer 2022
  - -2 additional manuscripts will be submitted by 2023
  - -Invention disclosure submitted on asymmetric chromophores; Fall 2020
  - -Research focus: nonlinear optic polymers for telecommunications and quantum information technology; new monomers for biodegradable polymers
  - Employed: Materials Scientist, Influint Energy, Chicago, IL; Summer 2022
- Priyanka Dwivedi, Ph.D. in Electrical Engineering; IIT Delhi — Feb 2019 – Feb 2020
  - -Publication selected for back cover-art; Adv. Electron Mater; Spring 2021
  - -Research focus: developing devices using quantum dots and CNTs for neuromorphic computing
  - Employed: Assistant Professor, IIIT Sri City, India; Fall 2020
- Setareh Gooshvar, high school student — Summer 2018
  - -First place; Ying Expo Science Fair; Spring 2019
  - -Grand prize; Ying Expo Science Fair; Spring 2019
  - -Second place; Florida State Science Fair; Spring 2019
  - -Competed in Intel's International Science Fair; Spring 2019
  - -Attending University of Miami with plans to become a surgeon

Undergraduate Researchers (Role: Primary Faculty Mentor)

- Samantha Williams, Materials Science and Engineering — Feb 2022 -
  - -Research focus: developing microfibers for flexible, transient electronics
  - -Summer internship at BASF, Charlotte NC; Summer 2022
- Erin Watson, Materials Science and Engineering — Sep 2021 -
  - -Research focus: Creating flexible plant-based materials for transient electronics
  - -Undergraduate Research Fellowship, UCF; Summer 2022
  - -Allyn M. Stearman Research Scholarship ($750); Fall 2021
- Arielle Myerson, Materials Science and Engineering — Feb 2022 -
  - -Research focus: developing microfibers for flexible, transient electronics
- Meryl Wiratmo, Materials Science and Engineering — Dec 2020 -
  - -Research focus: Developing flexible, transient piezoelectrics
  - -Co-author on 3 publications
  - -Received internship at Savannah National Laboratory; Savannah, GA; Summer 2022
  - -Founders' Day Award MSE Department Nominee; Spring 2022
  - -Office of Undergraduate Research Grant ($1,495); Spring 2022
  - -Undergraduate Research Fellowship, UCF; Summer 2021
- Brandon Ortiz, Materials Science and Engineering — Dec 2020 -
  - -Research focus: Synthesis of new biodegradable polymers for transient electronics
  - -Undergraduate Research Fellowship, UCF; Summer 2021

- Ryann Valmonte, Materials Science and Engineering May 2021 – Dec 2021
  - -Research focus: Building centrifuge for force spinning polymer microfibers
  - -Undergraduate Research Award ($750), UCF; Fall 2021
- Derek Lucas, Mechanical Engineering May 2021 – May 2022
  - -Research focus: Building centrifuge for force spinning polymer microfibers
- Ashley Santana, Biomedical Sciences Fall 2018 – Fall 2019
  - -Joined NYU Biomedical Sciences Program; Fall 2021
  - -NSF Graduate Research Fellowship; Fall 2021
  - -Goldwater Fellowship; Spring 2020
  - -Accepted as Research Intern for cancer research; Fall 2019
  - -T.L.E.A.R.N. student; 2018-2019 AY
  - -Fellowship Award: McNair Fellowship; 2019-2020 AY
  - -Poster Award: Soc. for Adv. of Chicanos/Hispanics & Native Americans, Honolulu, Hawaii; Fall 2019
  - -Accepted for REU at LSU; Summer 2019
  - -Accepted to attend Duke U. Graduate School Boot Camp; Summer 2019
  - -Poster Presentation: Florida Undergraduate Research Conference; Spring 2019
  - -Poster Presentation: Showcase of Undergraduate Research Excellence; Spring 2019
- Andrew Phillips, Mechanical Engineering Fall 2019 – Fall 2020
  - -Poster: Florida Undergraduate Research Conference Abstract Accepted; Spring 2020
  - -Employed: Siemens Energy, Orlando, FL; 2020
- Stephanie Schreiner, Biomedical Sciences Fall 2017 – Summer 2019
  - -Joined Immunology Ph.D. Program at UPenn; Fall 2021
  - -Fellowship Award: McNair Fellowship; 2018-2019 AY
  - -Accepted for REU at U. Penn; Summer 2019
  - -Poster Award: Showcase of Undergraduate Research Excellence; Spring 2019
  - -Accepted to attend coding workshop at MIT; Spring 2019
  - -Poster Presentation: Florida Undergraduate Research Conference; Spring 2018
  - -Fellowship Award: Summer Undergraduate Research Fellowship; Summer 2018
  - -Poster Presentation: Showcase of Undergraduate Research Excellence; Summer 2018
  - -Poster Presentation: 10th Annual Biomedical Sciences Graduate Research Colloquium; Summer 2018
  - -Attendee: Soc. for Adv. of Chicanos/Hispanics and Native Americans, San Antonio, TX; Fall 2018
- Hassan Haidar, Biomedical Sciences Fall 2017 – Fall 2018
  - -Office of Undergraduate Research Grant ($750); Fall 2018
  - -Applying to medical schools; 2021-2022
  - -Accepted as Intern at Family Practice Dr's Office, Winter Park; Spring 2019
  - -Fellowship Award: Summer Undergraduate Research Fellowship; Summer 2018
  - -Poster Presentation: Showcase of Undergraduate Research Excellence; Summer 2018
  - -Poster Presentation: 10th Annual Biomedical Sciences Graduate Research Colloquium; Summer 2018

Undergraduate Researchers Mentored Prior to UCF (2013 – 2016)

- Daniel Capua; Bio-Engineering; UIUC, now graduate student at De Paul U. 2015-2017
- Mary Jablowicz; MSE; UIUC, now Procurement Specialist at Ferrara 2015-2017
- Tyler Graham; Electrical Engineering; UIUC 2015-2017
- Nicholas Dunlap; MSE; UIUC, now graduate student at UC Irvine 2015-2016
- Kyle Augustine; Chemistry; U. Maryland, College Park 2013-2015

SERVICE ACTIVITIES

Service to the Field

- Guest editor, MDPI Applied Sciences, Design of Electro-Optic Polymers (EOPs) 2020-2021
- Associate editor, Frontiers, Flexible Electronics. 2020-2022
  This is a new journal by the well-established Frontiers publisher that focuses on research articles reporting on flexible electronic platforms.
- Journal Reviewer 2016 -
  Small, ACS Applied Materials and Interfaces, Polymer Chemistry, RCS Advances, and Applied Physics Letters
- Proposal Reviewer: NSF ad hoc 2018, 2019, 2021
- Workshops
  - -Invited Faculty Mentor, NSF Future Faculty Workshop, Princeton U. Princeton, NJ Jul 2019
  - -Co-organized, Kavli Foundation Bioelectronics workshop Rice U. Houston, TX Dec 2018
  - -Invited Faculty Mentor, NSF Future Faculty Workshop, U. Delaware. Dover, DE Jul 2018
  - -Co-organized, Teaching workshop for incoming graduate students, UMD Aug 2014

Service to the Department

- Biionix Cluster faculty search; Committee Member 2018, 2021, 2022
- Graduate student qualifying exam update; Committee Member 2019
- Graduate admissions; Committee Member Spring 2018
- BS-MSE Program development; Committee Chair 2017-2019
  - -Pitched degree program at all stages of development from college to board of trustees
  - -Managed work distribution across 5 faculty committee members
  - -Wrote BS-MSE degree program proposal
  - -Communicated with administrator across UCF
  - -Created Syllabi for 13 new courses

Service to the Community

- Mentor to minority engineering students; Office of Diversity & Inclusion, UCF Spring 2020 -
- American Chemical Society, Chemistry Week Volunteer (elementary age), FL Oct 2019
- Presentation Judge: SEMI High Tech U workshop for 'Entrepreneur Kids', UCF Jul 2018
- Lab demo 'Fun with Plastics': ASM AeroMat Mini-Camp (middle school), FL May 2018
- Poster Judge: Graduate Research Forum, UCF Apr 2018
- Poster Judge: Dr. Nelson Ying Orange County Science Expo (middle school), FL Feb 2018
- Poster Judge: BRIDG Workshop (graduate students from local Central FL area) Aug 2017
- Chemical Society of Washington (CSW) Board of Managers; Washington, D.C. 2014 - 2015
- Project Judge: MD Science Olympiad, (middle school); Hyattsville, MD 2012, 2013 & 2015
- Lab supervisor and exam proctor: 44th International Science Olympiad; College Park, MD 2012

PROFESSIONAL ACTIVITIES AND MEMBERSHIPS

Materials Research Society (MRS)	2017 -
American Chemical Society (ACS)	2007 -

OTHER: PROFESSIONAL DEVELOPMENT

Workshops & Seminars Attended for Career Development, Funding Opportunities, & Networking

- Faculty Success Program; National Center for Faculty Development and Diversity — Sep 2021
- Defense Advanced Research Project Agency D60 workshop, Washington, D.C. — Sep 2018
- Southeast Polymer Faculty forum, Georgia Tech, Atlanta, GA — Jun 2018
- Lockheed Martin Global Vision Center workshop, Washington, D.C. — May 2018
- U. South Florida Air Force Science and Technology workshop, USF, Tampa, FL — Apr 2018
- Mayo Clinic Convergence workshop, UCF — Feb 2018
- Office of Naval Research Funding seminar, UCF — Jan 2018
- Defense Advanced Research Projects Agency seminar, UCF — Jan 2018
- Office of Research & Comm. (ORC) 'NSF Inside Scoop' workshop, UCF — Nov 2017
- ORC 'setting up your lab & developing a productive group' workshop, UCF — Oct 2017
- Ctr for Faculty Excel. Leadership Series: Career Advancement Plan workshop, UCF — Oct 2017
- Ctr for Faculty Excel. 'self-directed learning' workshop, UCF — Oct 2017
- Ctr for Faculty Excel. 'pillars of academic achievement' workshop, UCF — Oct 2017
- State University Systems of Florida workshop, Washington, D.C. — Aug 2017
- Undergraduate Teaching & Learning program certification for teaching in STEM, UMD — Jun 2015