HERDELINE ANN M. ARDOÑA

Department of Chemical and Biomolecular Engineering, University of California, Irvine
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PROFESSIONAL APPOINTMENTS AND EDUCATION

2020– **University of California, Irvine**
Assistant Professor, Department of Chemical and Biomolecular Engineering
Joint appointments (by courtesy): Department of Biomedical Engineering and Department of Chemistry
Member, Sue & Bill Gross Stem Cell Research Center (SCRC)
Member, Muscle Biology and Disease Research Center (MBDRC)
Member, Center for Neural Circuit Mapping (CNCM)
Affiliate Member, Cardiovascular Innovation and Research Center (CIRC)

2017– 2020 **Harvard University**
American Chemical Society (ACS) Irving S. Sigal Postdoctoral Fellow, Disease Biophysics Group

2012– 2017 **Johns Hopkins University**
Ph.D. Chemistry (with Certificate for Advanced Studies in Nanobiotechnology, 2016)
University of the Philippines Diliman

2011– 2012 Instructor 5, Institute of Chemistry, College of Science

2007– 2011 B.S. Chemistry, *summa cum laude*

AWARDS AND RECOGNITIONS

- Talented 12, Chemical & Engineering News **(2025)**
- ACS Polymeric Materials Science & Engineering (PMSE) Early Investigator Award **(2025)**
- Participant, Japan-America Frontiers of Engineering (JAFOE) Symposium **(2025)**
- Participant, National Academy of Engineering- Early Career Engineering Convocation (E2C2) **(2025)**
- Scialog Fellow, Automating Chemical Laboratories **(2025)**
- Matter's 35 Under 35, Cell Press **(2024)**
- Systems Chemistry Talents, ChemSystemsChem, Wiley **(2024)**
- Kavli Fellow, 34th U.S. Kavli Frontiers of Science Symposium-National Academy of Sciences **(2024)**
- Advanced Materials Rising Stars Program, Wiley **(2024)**
- Hellman Fellowship **(2023–2024)**
- NSF CAREER Award **(2023– 2028)**
- U.S. Young Observer, International Union of Pure and Applied Chemistry (IUPAC) **(2023)**
  One of ten individuals selected to participate in IUPAC activities at the 52nd General Assembly and 49th World Chemistry Congress; participated in Polymer Division meetings
- Chemical and Biomolecular Engineering Professor of the Year, UCI Engineering Student Council **(2022– 2023)**
- 12th Irving S. Sigal Postdoctoral Fellow, American Chemical Society (ACS) **(2018– 2020)**:
  Awarded every two years to one outstanding postdoctoral fellow pursuing research at the chemistry-biology interface
- International Student Research Fellowship, Howard Hughes Medical Institute (HHMI) **(2015– 2017)**
- Faculty for the Future Fellowship, Schlumberger Foundation **(2014– 2017)**
- Emmett and Elsie Buhle Fellowship Award, Johns Hopkins University **(2014)**:
  Annually given to one Chemistry graduate student in acknowledgement of excellent academic performance
- Leticia Shahani Award for Best Undergraduate Thesis, UP Diliman **(2011)**
- Bank of the Philippine Islands-Department of Science and Technology: Science Award, Philippines **(2010)**:
  Annually given to 30 student researchers in the Philippines who excel in science and engineering
- Baldomero M. Olivera, Jr. and Lourdes J. Cruz Award, UP Diliman **(2010)**:
  Annually given to two highest ranking B.S. Chemistry seniors of the Institute of Chemistry, UP Diliman
- National Scholarship Program, Commission on Higher Education, Philippines **(2007– 2011)**

PUBLICATIONS (**denotes equal contribution*; *⊥undergraduate co-authors, †corresponding author*)

[42] J.F. Zimmerman, L.A. MacQueen, D. Henze, D. Drennan, S.L. Kim, **H.A.M. Ardoña**, S. Choi, Q. Jin, K.K. Parker,† "Stroke volume on a chip – in vitro hydrodynamic model of cardiac pumping efficiency," **2025**, *under review.*

[41] Z.-F. Yao,* S. Lim,* Y. Kuang, E.M. Lundqvist, N. Celt, C. O. Chung,⊥ K.K. Lee, K. Nguyen,⊥ L. Le,⊥ G.M. Milligan, P. Kohl, T.R. Sudarshan, Y. Li, A.K. Paravastu, M.V. Zaragoza, D.A. Fishman, **H.A.M. Ardoña**,† "Complementary biomolecular coassemblies direct energy transport for cardiac photostimulators," **2025**, *under revision.*

[40] Y. Kuang, Z.-F. Yao, C. Salgado,⊥ E. M. Lundqvist, N. Morsi,⊥ N. Celt, J. M. Urueña, D. A. Fishman, **H.A.M. Ardoña**,† "Light-triggered electromechanical feedback in a flexible cardiac polymeric interface," **2025**, *under revision.*

[39] E.M. Lundqvist, K.K. Lee, L. Le,⊥ K. Nguyen,⊥ S. Lim, N. Celt, Y. Kuang, Z.-F. Yao, H.-T. Wu, S.W. Tang, J. Pei, **H.A.M. Ardoña**,† "Micropatterning photoconductive peptide assemblies on stiff and soft biomaterial substrates," *ACS Applied Materials & Interfaces*, **2025**, *accepted*, doi:10.1021/acsami.5c05693

[38] H.C. Jeong, Y. Kuang, Z.-F. Yao, **H.A.M. Ardoña**,† "Supramolecular peptidic dopants for inducing photoconductivity and mechanical tunability in digital light processable hydrogels," *Faraday Discussions,* **2025**, *accepted*, doi: 10.1039/D5FD00031A (part of special issue in *Advances in Supramolecular Gels*)

[37] J.F. Zimmerman, D. Drennan, J. Ikeda,⊥ Q. Jin, **H.A.M. Ardoña**, S.L. Kim, R. Ishii, K.K. Parker,† "Bioinspired design of a tissue-engineered ray with machine learning," *Science Robotics,* **2025**, 10, eadr6472.

[36] K.L. Lacy*, S. Lim*, E.M. Lundqvist, Y. Kuang, H.C. Jeong T.N.G. Adams,† **H.A.M. Ardoña**,† "Non-uniform electric field manipulation of chromogenic peptide amphiphile assemblies," *ChemSystemsChem*, **2024**, e202400061 (part of special collection in *Systems Chemistry Talents*)

[35] T. Rao Sudarshan*, S. Lim*, J. Li,⊥ A.S. Robang, A.M. Liberty,⊥ **H.A.M. Ardoña**,† A.K. Paravastu,† "Cooperative β-sheet coassembly controls intermolecular orientation of amphiphilic peptide-polydiacetylene conjugates crystals," *Solid State Nuclear Magnetic Resonance,* **2024**, 133, 101959 (part of special issue in *Heterogeneous Biomaterials and Cellular Systems*)

[34] Z.-F. Yao, D.L.M. Cordova, G.M. Milligan, D. Lopez, S.J. Allison, Y. Kuang, **H.A.M. Ardoña**,† M.Q. Arguilla,† "Lattice-guided assembly of optoelectronically-active π-conjugated peptides on 1D van der Waals single crystals," *Science Advances*, **2024**, 10, eadl2402.

[33] K.K. Lee,* N. Celt,* **H.A.M. Ardoña**,† "Looking both ways: electroactive biomaterials with bidirectional implications for dynamic cell-material crosstalk," *Biophysics Reviews*, **2024**, 5, 021303 (*featured article*)

[32] Z.-F. Yao, Y. Kuang, H.-T. Wu, E. Lundqvist, X. Fu, N. Celt, J. Pei, A.F. Yee, **H.A.M. Ardoña**,† "Selective induction of molecular assembly to tissue-level anisotropy on peptide-based optoelectronic cardiac biointerfaces," *Advanced Materials*, **2024**, 312231 (selected as part of Advanced Materials "Rising Stars" special collection)

[31] S. Lim, D.L.M. Cordova, A.S. Robang, Y. Kuang, A.K. Paravastu, M.Q. Arguilla, **H.A.M. Ardoña**,† "Thermochromic behavior of polydiacetylene nanomaterials driven by charged peptide amphiphiles," *Biomacromolecules,* **2023**, 24, 4051 (invited as part of special issue in *Peptide Materials*)

[30] S. Choi, K.Y. Lee, S.L. Kim, L.A. MacQueen, H. Chang, J.F. Zimmerman, Q. Jin, M.M. Peters, **H.A.M. Ardoña**, X. Liu, A.-C. Heiler, R. Gabardi,⊥ C. Richardson, W.T. Pu, A.R. Bausch, K.K. Parker,† "Fibre-infused gel scaffolds guide cardiomyocyte alignment in 3D-printed ventricles," *Nature Materials,* **2023**, 22, 1039

[29] Y. Kuang, Z.-F. Yao, S. Lim, C. Ngo, ⊥ **H.A.M. Ardoña**,† "Biomimetic sequence-templating approach towards a multiscale modulation of chromogenic polymer properties," *Macromolecules,* **2023**, 56, 4526 (selected as a supplementary cover)

[28] V. V. Vurro, K. Shani, **H.A.M. Ardoña**, J. F. Zimmerman, V. Sesti, K.Y. Lee, Q. Jin, C. Bertarelli, K.K. Parker, G. Lanzani,† "Light-triggered cardiac microphysiological model," *APL Bioengineering*, **2023**, 7, 026108 (featured article in *Scilight*)

[27] Z.-F. Yao, Y. Kuang, P. Kohl, Y. Li, **H.A.M. Ardoña**,† "Carbodiimide-fueled assembly of π-conjugated peptides regulated by electrostatic interactions," *ChemSystemsChem*, **2023**, 5, e202300003 (selected for the *Systems Chemistry in the USA* special collection, *Chemistry Europe Editor's Choice: Spotlights*, and as front cover)

[26] K.L. Lacy, S. Salib,⊥ M. Tran, T. Tsai, R. Valentine, **H.A.M. Ardoña**, T.N.G. Adams,† "Light-induced dielectrophoresis for characterizing the electrical behavior of human mesenchymal stem cells," *Journal of Visualized Experiments*, **2023**, 196, e64909 (*invited article*)

[25] Z.-F. Yao, E. Lundqvist, Y. Kuang, **H.A.M. Ardoña**,† "Engineering multi-scale organization for biotic and organic abiotic electroactive systems," *Advanced Science* **2023**, 10, 2205381

[24] H. Chang,* Q. Liu,* J.F. Zimmerman,* K.Y. Lee, Q. Jin, M.M. Peters, S. Choi, S.L. Kim, **H.A.M. Ardoña**, L.A. MacQueen, C.O. Chantre, S.E. Motta, E.M. Cordoves,⊥ G.J. Touloumes, K.K. Parker,† "Recreating the heart's helical structure-function relationship with focused rotary jet spinning," *Science,* **2022**, 377, 180

[23] **H.A.M. Ardoña**, J.F. Zimmerman, K. Shani, F. Eweje,⊥ S.-H. Kim, D. Bitounis, D. Parviz, E. Casalino, M. Strano, P. Demokritou, K.K. Parker,† "Differential modulation of endothelial cytoplasmic projections after exposure to graphene-based nanomaterials," *NanoImpact,* **2022,** 26, 100401

[22] K.Y. Lee,* S.-J. Park,* D.G. Matthews, S.L. Kim, C. A. Marquez,⊥ J.F. Zimmerman, **H.A.M. Ardoña**, A.G. Kleber, G.V. Lauder, K.K. Parker,† "An autonomous, humanized fish based on cardiac biophysics," *Science*, **2022**, 375, 639

[21] S. Lim, Y. Kuang, **H.A.M. Ardoña**,† "Evolution of supramolecular systems towards next-generation biosensors," *Frontiers in Chemistry*, **2021**, 9, 723111 (invited as part of the special issue on *International Women of Supramolecular Chemistry*)

[20] M. Yadid, J.U. Lind, **H.A.M. Ardoña**, S.P. Sheehy, L.E. Dickinson, F. Eweje,⊥ M.M.C. Bastings, B.D. Pope, B. B. O'Connor, J.R. Straubhaar, B. Budnik, A.G. Kleber, K.K. Parker,† "Endothelial extracellular vesicles contain protective proteins and rescue ischemia-reperfusion-injury in a human heart-on-chip," *Science Translational Medicine*, **2020**, 12, 565, eaax8005

[19] S. Ahn, C.O. Chantre, **H.A.M. Ardoña**, G.M. Gonzalez, P.H. Campbell, K.K. Parker,† "Biomimetic and estrogenic fibers promote skin regeneration via estrogen receptor β," *Biomaterials,* **2020**, 255, 120149

[18] G.J. Touloumes,* **H.A.M. Ardoña**,* E.K. Casalino,⊥ J.F. Zimmerman, C.O. Chantre, D. Bitounis, P. Demokritou, K.K. Parker,† "Mapping 2D- and 3D-distributions of metal/metal oxide nanoparticles within cleared human ex vivo skin tissues," *NanoImpact*, **2020**, 17, 100208

[17] B.B. O'Connor,* T. Grevesse,* J.F. Zimmerman, **H.A.M. Ardoña**, J.A. Jimenez,⊥ K.K. Parker,† "Human microvascular endothelial cell pairs model tissue-level blood-brain barrier function," *Integrative Biology.*, **2020**, 12, 64

[16] F. Eweje,*⊥ **H.A.M. Ardoña**,* J.F. Zimmerman, B.B. O'Connor, S. Ahn, T. Grevesse, K.N. Rivera,⊥ D. Bitounis, P. Demokritou, K.K. Parker,† "Quantifying the effects of engineered nanomaterials on endothelial cell architecture and vascular barrier integrity using a cell pair model," *Nanoscale*, **2019**, 11, 17878

[15] T.S. Kale,* **H.A.M. Ardoña**,* A. Ertel,⊥ J.D. Tovar,† "Torsional impacts of peptidic nanostructures imposed within confined quaterthiophene segments," *Langmuir*, **2019**, 35, 2270

[14] S. Ahn, **H.A.M. Ardoña**, P.H. Campbell, G.M. Gonzalez, K.K. Parker,† "Alfalfa nanofibers for dermal wound healing," *ACS Applied Materials & Interfaces*, **2019**, 11, 33535

[13] J.F. Zimmerman, **H.A.M. Ardoña**, G. Pyrgiotakis, J. Dong, B. Moudgil, P. Demokritou, K.K. Parker, "Scatter enhanced phase contrast microscopy for discriminating mechanisms of active nanoparticle transport in living cells," *Nano Letters*, **2019**, 19, 793 (cover article)

[12] S. Ahn, **H.A.M. Ardoña**, J.U. Lind, F. Eweje,⊥ S.L. Kim, G. M. Gonzalez, Q. Liu, J.F. Zimmerman, G. Pyrgiotakis, Z. Zhang, J. Beltran, B. Moudgil, P. Capinone, P. Demokritou, K.K. Parker,† "Mussel-inspired 3D fiber scaffolds for heart-on-a-chip toxicity studies of engineered nanomaterials," *Analytical and Bioanalytical Chemistry*, **2018**, 410, 6141 (front cover for *Analytical Advances in Sustainable and Safe Nanotechnology* issue)

[11] **H.A.M. Ardoña**,* T.S. Kale,* A. Ertel,⊥ J.D. Tovar,† "Non-resonant and local field effects on the photophysics of oligo(*p*-phenylenevinylene) segments within peptidic nanostructures," *Langmuir*, **2017**, 33, 7435

[10] **H.A.M. Ardoña**, E.R. Draper, F. Citossi, M. Wallace, L. Serpell, D.J. Adams,† and J.D. Tovar,† "Kinetically controlled coassembly of multichromophoric peptide hydrogelators and the impacts on energy transport," *Journal of the American Chemical Society* **2017**, 139, 8685

[9] Y. Zhou, B. Li, S. Li, **H.A.M. Ardoña**, W.L. Wilson, J.D. Tovar, C.M. Schroeder,† "Concentration-driven assembly and sol–gel transition of π-conjugated oligopeptides," *ACS Central Science*, **2017**, 3, 986

[8] B. Li, S. Li, Y. Zhou, **H.A.M. Ardoña**, L.R. Valverde, W.L. Wilson, J.D. Tovar, C.M. Schroeder,† "Non-equilibrium self-assembly of π-conjugated oligopeptides in solution," *ACS Applied Materials & Interfaces*, **2017**, 9, 3977

[7] W. Liyanage, **H.A.M. Ardoña**, H.-Q. Mao, J.D. Tovar,† "Cross-linking approaches to tune the mechanical properties of peptide π-electron hydrogels," *Bioconjugate Chemistry*, **2017**, 28, 751 (part of the *Peptide Conjugates for Biological Applications* special issue)

[6] **H.A.M. Ardoña** and J.D. Tovar,† "Peptide pi-electron conjugates: organic electronics for biology?" *Bioconjugate Chemistry* (cover article), **2015**, 26, 2290

[5] K. Besar,* **H.A.M. Ardoña**,* J.D. Tovar, H.E. Katz,† "Demonstration of hole transport and voltage equilibration in self-assembled pi-conjugated peptide nanostructures using field-effect transistor architectures." *ACS Nano*, **2015**, 9, 12401

[4] **H.A.M. Ardoña**, K. Besar, M. Togninalli,⊥ H.E. Katz, J.D. Tovar,† "Sequence-dependent mechanical, photophysical and electrical transport properties of pi-conjugated peptide hydrogelators." *Journal of Materials Chemistry C*, **2015**, 3, 6505 (part of a special themed collection: *Bioelectronics* and 2015 *Journal of Materials Chemistry C Hot Papers*)

[3] **H.A.M. Ardoña** and J.D. Tovar,† "Energy transfer within responsive pi-conjugated coassembled peptide-based nanostructures in aqueous environments" *Chemical Science*, **2015**, 6, 1474

[2] B.D. Wall, Y. Zhou, S. Mei, **H.A.M. Ardoña**, A.L. Ferguson, J.D. Tovar,† "Variation of formal hydrogen bonding networks within electronically delocalized pi-conjugated oligopeptide nanostructures" *Langmuir*, **2014**, 30, 11375

[1] **H.A.M. Ardoña**,⊥ F.U. Paredes, I.H.J. Arellano,† S.D. Arco, "Electrospun PET supported-ionic liquid-stabilized CdS catalyst for the photodegradation of Rhodamine B under visible light" *Materials Letters*, **2013**, 91, 96

Features/Editorials:

- I. Abánades Lázaro, A. Anastasaki, **H.A.M. Ardoña** … S. W. Cranford, "35 challenges in materials science being tackled by PIs under 35(ish) in 2024," *Matter*, **2024**, 7, 3699
- P. Wick, † H. Zhang, S. Lin, X. Li, C Zhang, **H.A.M. Ardoña**, Editorial – "Special issue environmental and health impacts of two-dimensional nanomaterials," *NanoImpact*, **2024**, 33, 100491

List also available through: https://www.ncbi.nlm.nih.gov/myncbi/herdeline.ardona.2/bibliography/public/

PATENTS

[3] **H.A.M. Ardoña** and K.K. Lee, "Bioinspired visible light photoinitiators" *provisional patent filed;* U.C. Case No. 2025-834-1.

[2] **H.A.M. Ardoña**, Z.-F. Yao, Y. Kuang, S. Lim, "Photoactive organic material blends as cardiac photostimulators" *provisional patent filed;* U.C. Case No. 2025-800-1.

[1] J.D. Tovar, H.E. Katz, **H.A.M. Ardoña**, A.M. Sanders, K. Besar, "Energy transporting pi-conjugated peptide nanomaterials" U.S. Patent #10,316,060.

RESEARCH FUNDING

2025– 2026 Tel Aviv University-UCI Seed Grant: "Light Induced Chemotaxis to Evaluate the Regenerative Potential of Optoelectronic Biomolecular Assemblies using Nerve-on-Chip Models" (UCI, $10,000)

2025– 2026 Anti-Cancer Challenge Pilot Award: "Spatially Engineered In Vitro Models to Screen Structural Cardiotoxicity Induced by Anti-Cancer Therapeutics" (UCI CFCCC, $40,000)

2025 REVAMP: Research Equipment reVitalization And Maintenance Program (UCI, $5,000)

2023– 2028 "CAREER: Harnessing Dynamic Cell-Scaffold Interactions to Develop Adaptive Biohybrid Systems" (NSF DMR #2239647, $650,000- H.A.M. Ardoña, sole PI)

2023–2024 "Wiring-Up Muscle Tissues for Advancing the Manufacturing of Cultured Meats" (Society of Hellman Fellows Fund, $50,000- H.A.M. Ardoña, sole PI)

2022–2027 "Optically Promoting Cardiac Maturation Using Engineered Peptides" (NIH NHLBI #R01HL164348 and #R56HL164348, $2,555,545; Supplement: $287,164- H.A.M. Ardoña, sole PI)

2022– 2026 "RECODE: Spatial Engineering of Morphogens for the Reproducible Formation of Cortical Organoids with Arealization" (NSF CBET #2225624, $1,500,000- M. Watanabe, PI; H.A.M. Ardoña, co-PI)

2021– 2025 UCI Council on Research, Computing, and Libraries (CORCL) Research Award (UCI, $18,150)

2021– 2023 Interim COVID-19 Research Recovery Program (ICRRP), UCI Office of the Provost and Executive Vice Chancellor (UCI, $35,000)

2021– 2022 "Directed Self-Assembly of Optoelectronic Peptides on Nanostructured Polymeric Surfaces" (NSF MRSEC-CCAM Seed Grant Program, $60,000- H.A.M. Ardoña, PI; A.F. Yee, co-PI)

PRESENTATIONS (since 10/2020)

Invited Presentations

10/2025 Department of Biomedical Engineering, University of Southern California, CA (*scheduled*)

09/2025 Invited Lecture, International School on Material Interfaces for Engineering Living Systems (MIELS), Como, Italy (*scheduled as virtual talk*)

07/2025 Plenary Talk, Annual PAASE Meeting and Symposium, Philippine-American Academy of Science & Engineering (PAASE), University of South Carolina, Columbia, SC (*scheduled as virtual talk*)

05/2025 "Self-Assembly and Supramolecular Chemistry" Gordon Research Conference (GRC), Les Diablerets, Switzerland
05/2025 "Advances in Supramolecular Gels" Special Issue for Faraday Discussions, Glasgow, UK
04/2025 MBDRC Seminar Series, UC Irvine
03/2025 Department of Chemistry, Texas A&M University
01/2025 Molecular Engineering & Sciences Institute, University of Washington, Seattle, WA
12/2024 "SB04 Symposium: Materials and Devices for In Vitro Cell-Tissue Electronic Interfaces," MRS Fall Meeting, Boston, MA
11/2024 Department of Chemistry, Virginia Polytechnic Institute and State University (Virginia Tech), VA
10/2024 BioPACIFIC MIP User Talk, University of California Los Angeles
10/2024 Department of Chemistry, Purdue University, IN
10/2024 Plenary Speaker, International Symposium on Stimuli-Responsive Materials, Windsor, CA
10/2024 Department of Chemical Engineering, University of California Los Angeles, CA
09/2024 Department of Chemistry, California State University, Los Angeles, CA
07/2024 Signal Transduction by Engineered Extracellular Matrices GRC, *short oral presentation*, Manchester, NH
07/2024 IUPAC Macro 2024, 50th World Polymer Congress, Warwick, UK
03/2024 "POLY Symposium on Structure to Function in Supramolecular Polymers and Materials," American Chemical Society (ACS) National Meeting, San Francisco, CA
03/2024 BioPACIFIC MIP User Talk, University of California Los Angeles
03/2024 Department of Chemical and Biomolecular Engineering, University of Illinois, Urbana-Champaign, IL
01/2024 BioPACIFIC MIP User Talk, University of California Santa Barbara
01/2024 Annual Stem Cell Science Symposium, Sue & Bill Gross Stem Cell Research Center, UCI
10/2023 "Next Generation Bio-hybrid, Bio-inspired and Bio-enabled Materials" Session, Materials for Sustainable Development Conference (MATSUS23), Torremolinos, Spain
08/2023 "ANYL Symposium on Wearables & Implantables," American Chemical Society (ACS) National Meeting, San Francisco, CA
07/2023 Keynote Speaker in "Peptide Surface Modifications" Session, Peptide Self Assembly Conference, University of Manchester, UK
01/2023 "Early-Career Investigator Presentations," Peptide Materials GRC, Galveston, TX
11/2022 "Biomaterials and Interfaces" SB04 Session, Materials Research Society (MRS) Fall Meeting, Boston, MA
11/2022 Bio-Convergence 2030 Conference, Tel Aviv University, Israel
08/2022 "Advances in Wearable & Implantable Technologies" ANYL Symposium, ACS National Meeting, Chicago, IL
03/2022 Department of Chemistry, Alcorn State University, MS (*virtual*)
01/2022 Adding Enhanced Darkfield Hyperspectral Microscopy to Raman Microscopy for Nanoparticle Research, Cytoviva and Horiba Scientific Webinar (*virtual*)
11/2021 Minority Opportunities in Research (MORE) Programs, California State University, Los Angeles (*virtual*)
09/2021 Bioengineering Topical Interest Group, Raytheon Technologies Corp. (*virtual*)
08/2021 Optics + Photonics, Organic Photonics + Electronics Symposium, Society of Photo-Optical Instrumentation Engineers (SPIE) Meeting, San Diego CA (*virtual*)
07/2021 Laser Microbeam Program (LAMP) Seminar Series, UCI Beckman Laser Institute (*virtual*)
04/2021 2nd Biomedical Engineering & Instrumentation Summit (*virtual*)
03/2021 Community Lecture Series, Sue & Bill Gross Stem Cell Research Center, UCI (*virtual*)
02/2021 Department of Chemistry and Biochemistry, Seton Hall University, South Orange, NJ (*virtual*)
12/2020 Organic Chemistry Seminar Series, Department of Chemistry, UCI (*virtual*)
10/2020 Heart to Heart Training Club, UCI Cardiovascular Innovation and Research Center (*virtual*)

Contributed Presentations

03/2025 "Synthetic ECM-Mimetic Scaffolds with Optoelectronic Properties for Directing Excitable Tissue Structure and Behavior," *oral presentation*, Materials Science of Extracellular Matrices Session, ACS Spring Meeting, San Diego, CA
01/2025 "Phototransducer Biomaterials for Directing Excitable Tissue Structure and Actuation," *poster presentation*, Peptide Materials GRC, Pomona, CA
10/2024 "Photoexcitable Peptidic Biointerfaces for Directing Cardiac Tissue Organization and Behavior," *oral presentation*, AIChE Annual Meeting, San Diego, CA

05/2024 "Surface-Assembled Optoelectronic Assemblies for Directing Electrogenic Tissue Anisotropy," *oral presentation*, World Biomaterials Congress, Daegu, South Korea

07/2023 "Designing Peptidic Materials for Optoelectronic and Transducer Interfaces," *poster presentation*, Biomaterials & Tissue Engineering GRC, Holderness, NH

04/2023 "Designing Peptidic Assemblies as Bioelectronic Interfaces and Adaptive Bioscaffolds," *oral presentation*, Bioinspired Approaches to Supramolecular Biomaterials Session, Society for Biomaterials Annual Meeting, San Diego, CA

TEACHING

- *Instructor*, UC Irvine
  - CBE 40B: Process Thermodynamics **(Winter 2023; Winter 2024; Winter 2025)**
  - ENGR 1A: General Chemistry for Engineers **(Winter 2022; Fall 2022)**
  - CBE 181: Polymer Science and Engineering **(Fall 2020; Fall 2021; Spring 2023; Spring 2024; Spring 2025)**
  - CBE 249: Soft Hybrid Biomaterials **(Winter 2021; Fall 2023; Fall 2024)**
- *Guest Instructor*, SEAS, Harvard University
  - BE 121: Cellular Engineering/ ES 222: Advanced Cellular Engineering **(Fall 2018 and 2019)**
- *Participant*, Teaching Institute: Theory, Practice & Navigating STEM Higher Ed, Harvard Medical School/ School of Dental Medicine and Center for Excellence in Teaching at Simmons University, Boston, MA **(August 2019)**
- *Teaching Assistant*, Department of Chemistry, Johns Hopkins University
  - 030.205: Organic Chemistry Lecture **(Fall 2013 – Spring 2014)**
  - 030.101/030.105: Introductory Chemistry Lecture/Laboratory **(Fall 2012 – Spring 2013)**
- *Instructor 5*, Institute of Chemistry, UP Diliman **(2011 – 2012)**
  - CHEM 16 and 17: General Chemistry Laboratory I and II, for Chemistry majors and non-majors
  - CHEM 31.1: Organic Chemistry Laboratory, for non-majors

RESEARCH MENTORING

- Postdoctoral researchers: Ze-Fan Yao (2021–2025); Leonardo Maver (2024–)
- Graduate students: Sheng Wei Tang (Chemistry/ChAMP Program, 2024–); Natalie Celt, *CIRM Predoctoral Fellow* (BME, 2022–); Kathryn Lee, *2024 ACS WCC/Eli Lily Awardee* (CBE, 2022–); Emil Lundqvist, *CARE/T32 Fellow* (BME, 2021–); Kiara Lacy, *supported by* #R01HL164348 supplement (CBE, 2021–); Harrison Jeong (CBE, 2021–); Yuyao Kuang, *2025 SSoE Outstanding Research Awardee* (CBE, 2021–); Sujeung Lim (CBE, 2020–)
- UCI undergraduate students: Archer Black (CBE, 2025–); Shem Manchala (CBE, 2025–); Carly Rohlmeier (Chemistry, 2025–); Doyle Miller (CBE, 2025–); Miriam Serfezeu (CBE, 2025–); Aayat Jhaveri (CBE, 2025); Zachari Santos Mendoza (BME, 2024–); Brandon Ilori, *CIRM COMPASS Scholar* (CBE, 2024–); Dylan Nam Nguyen (CBE, 2024–); Caleb Chung, *UROP Fellow* (CBE, 2024–); Catherine Salgado, *SURP Fellow, Hiestand Engineering Research Awardee, and LAEP Awardee* (BME, 2023–); Madeleine Marston (CBE, *UROP Fellow*, 2023–); Nadeen Morsi (BME, *UROP Fellow*, 2023–); Krystal Nguyen, *UROP Distinguished Research Fellow* and *E-SURP Fellow* (CBE, 2023–); Lanie Le, *UROP Distinguished Research Fellow* and *E-SURP Fellow* (BME, 2023–); Ruswel Domingo, *UROP Fellow* (CBE, 2023–2024); Catherine Ngo, *UROP Fellow* (CBE, 2022–2024); Thomas Wakuta (CBE, 2022); Jaide Ventocilla, *UROP Fellow* (Chemistry, 2020–2022); Pauline Tran, *UROP Fellow* (CBE, 2020–2021); Vincent Lieu (CBE, 2020– 2021); Michael Lehman (CBE/Chemistry, 2021)

Selected programs as a standing mentor/ host:

- UCI CIRM Creating Opportunities through Mentorship and Partnership Across Stem Cell Science (COMPASS) Scholars Research Program in Regenerative Medicine Careers for a Diverse Undergraduate Population (2024–)
- Cal State LA and UC Irvine Partnership for Research and Education in Materials (PREM) Center for Bioinspired and Architectured Materials (CBAM) (NSF DMR-2425229) (2024–)
- Undergraduate Student Initiative for Biomedical Research (USIBR) Program (2024–)
- Access to Careers in Engineering and Sciences (ACES), UCI Beckman Laser Institute (2022–)

SELECTED SERVICE ACTIVITIES (since 10/2020)

- Peer review referee: *ACS Applied Materials & Interfaces; ACS Biomaterials Science and Engineering; ACS Materials Letters; ACS Nano; ACS Omega; Advanced Functional Materials; Advanced Healthcare Materials; Angewandte Chemie International Edition; Applied Physics Letters; APL Bioengineering; Bioconjugate Chemistry; Bioelectricity; Biomacromolecules; Biomaterials; Chemistry: A European Journal; Chemistry of Materials; Chemical Science; ChemSystemsChem; Journal of the American Chemical Society; Journal of Biomedical Materials Research Part A; Journal of Controlled Release; Journal of Materials Chemistry B; NanoImpact; Nature; SciEnggJ (Philippines); Science Translational Medicine; Soft Matter; Trends in Chemistry*

- Conference symposium organizer: 2027 International Soft Matter Conference, ISMC (*local organizing committee*); 2023 MRS Fall Meeting (*lead*); 2022 MRS Fall Meeting; 2022 Society for Biomaterials Spring Meeting; 2021 MRS Fall Meeting
- Ad hoc reviewer/panelist: ACS PRF-DNI (2025); NIH ZRG1 F05-D (21) L Study Section (2025); DOE BES (2024); NIH ZRG1 BBBT-X (83) Study Section (2023; 2024); NIH NANO Study Section (2022, participated via the *NIH Early Career Reviewer Program*); NSF-BSF; 2 NSF panels
- Volunteer for AIChE Materials Engineering & Sciences Division (MESD), Area 8A (Polymers) and Area 8B (Biomaterials)
- Faculty Speaker, "Hacker Fab," UCI School of Engineering **(May 2025)**
- Faculty Panelist, "ICS & Engineering Mixer," Associated Students of University of California, Irvine **(May 2025)**
- International Advisory Board, International Conferences on Modern Materials & Technologies, Symposium on "Living Materials: From Electronics to Biomedicine" **(**for the 10th Forum on New Materials, **2026)**
- Guest Editor, "Molecular Switches and Smart Materials," ChemSystemsChem, Wiley **(2025–)**
- Early Career Advisory Board, Materials Chemistry Frontiers, Royal Society of Chemistry **(2025–)**
- Panelist for Power Hour; GRC Peptide Materials, Pomona, CA **(January 2025)**
- Panelist/Mentor, BME UNITE Chalk Talks **(January 2025)**
- PI (with Prof. Maxx Arguilla), "Salu-Salo: Celebrating the Filipino Heritage," UCI Physical Sciences Advancing Inclusive Excellence Award **(2024–2025)**
- Participant, Synthetic Biology + NHLBI: Teaming Users with Developers Workshop **(November 2024)**
- Member, Subcommittee on Polymer Terminology, IUPAC Polymer Division **(2024–)**
- Participant, Identifying Needs and Opportunities for the Application of Polymers, Institute of Advanced Studies Workshop, University of Birmingham, UK **(June 2024)**
- NSF ASCEND Mentor **(2023–2024)**
- Faculty Panelist, Rising Doctoral Institute, UCI School of Engineering **(September 2023)**
- Faculty Panelist, Women in Engineering Panel, UCI School of Engineering **(March 2023)**
- Faculty Panelist, "Engineering Your Future," Associated Students of University of California, Irvine **(March 2023)**
- Panelist, "Life After Graduation for International Students," Phi Lambda Upsilon- Alpha Chapter, University of Connecticut **(March 2023)**
- Co-Organizer, UCI SIRiPods (with Pros. Naomi Chesler, Pim Oomen, and Quinton Smith), "Building Beating Hearts" **(August 2022)**
- Speaker (with Prof. Momoko Watanabe), Brain Organoids Manufacturing using Biopolymers Workshop, Irvine Summer Institute in Neuroscience **(July 2022 and 2023)**
- Guest Editor, *NanoImpact*, Special Issue on "Environmental and Health Impacts of Two-Dimensional Nanomaterials" **(June 2022–2023)**
- Co-Director and Annual Mentor, Future Faculty Workshop: Preparing Diverse Leaders for the Future (for Soft Materials), NSF DMR #2226708 **(2022–)**
- Panelist, Merck Outstanding Chemists of Color Symposium, ACS Spring Meeting, San Diego **(March 2022)**
- Speaker, Career Talks, Association of Filipino Scientists in America (AFSA) **(February 2022)**
- Mentor and Volunteer, Intersections Science Fellows Symposium **(2021; 2023)**
- Faculty Panelist, Dean's Spring Dinner for UCI Society of Hispanic Professional Engineers **(June 2021)** and UCI MAES-Latinos in Science and Engineering **(May 2021)**
- Faculty Panelist, UCI FUSION Conference (Filipinos Unifying Scientist-Engineers in an Organized Network, Annual Conference) **(May 2021)**
- Speaker, Girl Up Program, Los Altos High School **(April 2021)**
- Mentor, UCI EmpowerHER Summit **(March 2021)**
- Panelist, AIChE at UCI Faculty Panel **(November 2020)**
- Panelist, DECADE PLUS Faculty Panel, UC Irvine **(November 2020)**
- Mentor, Chemistry Women Mentorship Network (ChemWMN) **(2020–)**
- GradMAP STEM Mentoring Network- Philippines **(Volunteer/Mentor: 2020–; Deputy Chair of Advisory Board: 2022–2023; Chair of Advisory Board: 2023–)**