GONZALO CAMPILLO-ALVARADO

Department of Chemistry, Reed College, 3203 SE Woodstock Blvd
Portland, OR 97202
https://campillo-alvarado-lab.com/

PROFESSIONAL EXPERIENCE

Assistant Professor 2022 –
Reed College
Department of Chemistry

Illinois Distinguished Postdoctoral Research Associate 2020 – 2022
University of Illinois at Urbana–Champaign
Department of Chemical and Biomolecular Engineering
Illinois Materials Research Science and Engineering Center

EDUCATION

University of Iowa Iowa City, USA
PhD, Chemistry 2015 – 2020
Dissertation: "Exploiting Crystal Engineering of Boron: Novel Applications in Pharmaceutics, Separation Science and Photochemistry" (Advisor: Prof. Leonard R. MacGillivray)

Autonomous University of the State of Morelos Cuernavaca, Mexico
MSc, Chemistry 2013 – 2015
Dissertation: "Molecular Self-Assembly of Boronic Esters and Diamines" (Advisor: Prof. Herbert Höpfl)

University of Veracruz Xalapa, Mexico
BSc, Biopharmaceutical Chemistry 2006 – 2012
Dissertation: "Synthesis of the Pyrroloazepinic Ring from Bisdehydrostemonine" (Advisor: Prof. Ricardo Tovar)

SELECTED HONORS AND AWARDS

Highlighted Participant, National Chemical Engineering Future Faculty Seminar Series, MIT, UC Berkeley, UC Santa Barbara, University of Florida 2021
Co-Chair, Virtual Midwest Organic Solid State Chemistry Symposium (V-MOSSCS, XXVIII MOSSCS) 2021
Cátedra juvenil AMQO - named lecture from the Mexican Academy of Organic Chemistry 2021
DRIVE Distinguished Postdoctoral Fellowship, University of Illinois at Urbana–Champaign, The Illinois Distinguished Postdoctoral and Visiting Scholar Program 2020
A. Lynn Anderson Award for Research Excellence, University of Iowa, Department of Chemistry 2020
Inclusive Excellence Achievement, University of Iowa, The Office of Diversity, Equity and Inclusion 2020
ACS CG&D Oral Presentation Award (Early-Career Scientist category), CEMWOQ-6.5 2020
RSC Chemical Science Prize for Best Presentation, #LatinXChem 2020
Co-Chair, 1st American-Mexican Symposium on Supramolecular Materials Design (University of Iowa) (Funded by an ACS Global innovation Grant and ACS Iowa local section) 2019
Paul R. Sharp Award for Outstanding Oral Presentation in Inorganic Chemistry, ACS 2019 MWRM 2019
CLAS Dissertation Writing Fellowship, University of Iowa, College of Liberal Arts and Sciences 2018
ACS CG&D Best Graduate Student Oral Presentation Award, XXVIII MOSSCS 2018
International Union of Crystallography (IUCr) Young Scientist Award 2018
Post-Comprehensive Research Award, University of Iowa, Graduate College 2017
Outstanding Teaching Assistant Award, University of Iowa, Council of Teaching 2017
NSF I-Corps micro grant to develop a start-up with Prof. Leonard R. MacGillivray 2017
MSc and PhD Fellowships, the National Council of Science and Technology (CONACyT, Mexico) 2013, 2015
Research-Abroad Scholarship (National University of Ireland, Galway), University of Veracruz 2009

Travel Awards: Illinois Materials Research Center (2020), International Centre for Diffraction Data (2018), University of Iowa Graduate Student Senate (2018), University of Iowa Chemistry Department (2015), Council of Science and Technology of the State of Morelos, Mexico (2014)

PUBLICATIONS

Refereed Journal Articles (24 total, 15 as first-author)

24. Vásquez-Ríos, M. G.; **Campillo-Alvarado, G**.; Swenson, D. C.; Höpfl, H.; MacGillivray, L. R., Structures and Reactivities of Cocrystals Involving Diboronic Acids and Bipyridines: In Situ Linker Reaction and 1D-to-2D Dimensionality Change via Crystal-to-Crystal Photodimerization. *Chem. Eur. J.*, **2021**, *in press*

23. Campillo-Alvarado, G.; Bernhardt, M.; Davies, W. D.; Soares, A. N. T. J.; Woods, T. J.; Diao, Y. Modulation of π-stacking modes and photophysical properties of an organic semiconductor through isosteric cocrystallization. *J. Chem. Phys.* **2021**, *155*, 071102

(Corresponding author) (Selected for the 2021 JCP Emerging Investigators Special Collection)

22. Campillo-Alvarado, G.; Liu, J. R.; Davies, W. D.; Diao, Y. Enhancing Single-Crystal Dichroism of an Asymmetric Azo-Chromophore by Perfluorophenyl Embraces and Boron Coordination. *Cryst. Growth Des.* **2021**, *21*, 3143–3147

(Corresponding author) (Selected as supplementary cover)

21. Campillo-Alvarado, G.; MacGillivray, L. R., Opportunities Using Boron to Direct Reactivity in the Organic Solid State. *Synlett* **2021**, *32,* 655-662

(Invited account)

20. Li, Ch.; **Campillo-Alvarado, G**.; MacGillivray, L. R., Photoreactive salt cocrystals: the symmetric N+-H···N hydrogen bond and cation-π interaction support a cascade-like photodimerization of a 4-stilbazole. *CrystEngComm*, **2021**, *23*, 1071-1074

19. Hartwick, C. J.; Yelgaonkar, S. P.; Reinheimer, E. W.; **Campillo-Alvarado, G**; MacGillivray, L. R., Self-Assembly of Diboronic Esters with U-Shaped Bipyridines: 'Plug-in-Socket' Assemblies. C*ryst. Growth Des.* **2021***, 21*, 4482-4487

18. Vargas-Olvera, E. C.; Salas-Sánchez, F. J.; Colin-Molina, A.; Pérez-Estrada, S.; Rodríguez-Molina, B.; Alejandre, J.; **Campillo-Alvarado, G**.; MacGillivray, L. R.; Höpfl, H., Molecular Dynamics Studies of Aromatic Guests in Three Isostructural Inclusion Compounds with Molecular Boron-Nitrogen Hosts. C*ryst. Growth Des.* **2021**, *in press*.

17. Yelgaonkar, S. P.; **Campillo-Alvarado, G**; MacGillivray, L. R., Phototriggered Guest Release from a Nonporous Organic Solid: Crystal-to-Crystal 0D to 1D Transformation of a Binary Hydrogen-Bonded Cocrystal to a Ternary Cocrystal. *J. Am. Chem. Soc.* **2020**, *142*, 20772-20777

16. Campillo-Alvarado, G.; Li, Ch.; Feng, Z.; Hutchins, K. M.; Höpfl, H.; Morales-Rojas, H; Swenson, D. C.; MacGillivray, L. R., Single-Crystal-to-Single-Crystal [2+2] Photodimerization Involving B←N Coordination with Generation of a Thiophene Host. *Organometallics*, **2020**, *39*, 2197-2201

(Virtual special issue: 'Celebrating Chemistry in Latin America')

15. Campillo-Alvarado, G.; Keene, E. A.; Swenson, D. C.; MacGillivray, L. R., Repurposing of the anti-HIV drug Emtricitabine as a hydrogen-bonded cleft for bipyridines via cocrystallization. *CrystEngComm,* **2020**, *22*, 3563-3566

(Special themed collection: 'Supramolecular & Polymorphism')

14. Ray, K. K. (#); **Campillo-Alvarado, G**. (#); Höpfl, H.; Morales-Rojas, H.; MacGillivray, L. R.; Tivansky, A. V., Semiconductor Cocrystals Based on Boron: Generated Electrical Response with π-Rich Aromatic Molecules. *Cryst. Growth Des.* **2020**, *20*, 3-8 (# Equal contribution)

(*Virtual special issue: 'Remembering the Contributions and Life of Professor Joel Bernstein', invited contribution*)

13. Campillo-Alvarado, G.; D'mello, K.; S. V. Mariappan, S.; Swenson, D. C.; Höpfl, H.; Morales-Rojas, H.; MacGillivray, L. R., Exploiting Boron Coordination: B←N Bond Supports a [2+2] Photodimerization in the Solid State

and Generation of a Diboron Bis-Tweezer for Benzene/Thiophene Separation. *Angew. Chem. Int. Ed.* **2019**, *58*, 5413-5416

12. Campillo-Alvarado, G.; Li, Ch.; Swenson, D. C.; MacGillivray, L. R., Application of Long-Range Synthon Aufbau Modules based on Trihalophenols to Direct Reactivity in Binary Cocrystals: Orthogonal Hydrogen-Bonding and π-π Contact Driven Self-Assembly with Single-Crystal Reactivity. *Cryst. Growth Des.* **2019**, *19*, 2511-2518

(Selected as front cover) (Virtual special issue: 'Israel Goldberg Memorial', invited contribution)

11. Campillo-Alvarado G.; D'mello, M.; Sinnwell, M.; Höpfl, H.; Morales-Rojas, H.; MacGillivray L. R., Channel Confinement of Aromatic Petrochemicals via Aryl−Perfluoroaryl Interactions with a B←N Host. *Front. Chem.* **2019**, *7:695*. doi: 10.3389/fchem.2019.00695

(Special collection: 'Supramolecular Chemistry Using Boron', invited contribution)

10. Li, Ch.; **Campillo-Alvarado, G**.; Swenson, D. C.; MacGillivray, L. R., Exploiting Aurophilic Interactions in a [2 + 2] Photocycloaddition: Single-Crystal Reactivity with Changes to Surface Morphology. *Inorg. Chem.* **2019**, *58,* 12497-12500

9. Cabrera-Vega, E. J.; Alarcón-Ángeles, G.; Gómez Hernández, M.; **Campillo-Alvarado, G**.; Hurtado Y De la Peña, M. Design of a DNA-Based Biomaterial by Sol-Gel Method: Application for the Recognition of Albendazole Sulfoxide. *MRS Adv.* **2019**, *4*, 3537-3543

8. Campillo-Alvarado, G.; Aslan, K.; Sinnwell, M. A.; Reinheimer, E. W.; S. V. Mariappan, S.; MacGillivray, L. R.; Groeneman, R. H., Silver(I) coordination yields a [2+2] photodimerization reaction producing a head-to-tail photoproduct with pendent 2-pyridyl groups. *J. Coord. Chem.* **2018**, *71*, 2875-2883

(Selected as front cover)

7. Campillo-Alvarado, G.; Didden, T. D.; Oburn, S. M.; Swenson, D. C.; Santhana Mariappan, S. V.; MacGillivray L. R., Exploration of Solid Forms of Crisaborole (AN2728): Crystal Engineering Identifies Polymorphism in Commercial Sources and Facilitates Cocrystal Formation. *Cryst. Growth Des.* **2018,** *18*, 4416-4419

(Selected as front cover) (Highlighted in ACS Axial by Robin Rogers, Editor-in-Chief of Crystal Growth & Design)

6. Campillo-Alvarado, G.; Brannan, A.; Swenson, D. C.; MacGillivray, L. R., Exploiting the Hydrogen-Bonding Capacity of Organoboronic Acids to Direct Covalent Bond Formation in the Solid State: Templation and Catalysis of the [2 + 2] Photodimerization. *Org. Lett.* **2018**, *20*, 5490-5492

5. Campillo-Alvarado, G.; Vargas-Olvera, E. C.; Höpfl, H.; Herrera-España, A. D.; Sánchez-Guadarrama, O.; Morales-Rojas, H.; MacGillivray, L. R.; Rodríguez-Molina, R.; Farfan, N., Self-Assembly of Fluorinated Boronic Esters and 4,4'-Bipyridine into 2:1 N→B Adducts and Inclusion of Aromatic Guest Molecules in the Solid-State - Application for the Separation of *o,m,p*-Xylene. *Cryst. Growth Des.* **2018,** *18*, 2726-2743

(Virtual special issue: 'π−π Stacking in Crystal Engineering: Fundamentals and Applications', invited contribution)

4. Campillo-Alvarado, G.; Staudt, C. A.; Bak, M. J.; MacGillivray, L. R., Generation of cocrystals of Tavaborole (AN2690): opportunities for boron-containing APIs. *CrystEngComm*. **2017**, *19*, 2983-2986

(Selected as front cover) (Special themed collection: 'CSC100: Celebrating Canadian Chemistry', invited contribution)

3. Cruz-Huerta, J.; **Campillo-Alvarado, G.**; Höpfl, H.; Rodríguez-Cuamatzi, P.; Reyes-Márquez, V.; Guerrero-Álvarez, J.; Salazar-Mendoza, D.; Farfán-García, N., Self-Assembly of Triphenylboroxine and the Phenylboronic Ester of Pentaerythritol with Piperazine, trans-1, 4-Diaminocyclohexane, and 4-Aminopyridine. *Eur. J. Inorg. Chem.* **2016,** *3*, 355-365

2. Herrera-España, A. D.; **Campillo-Alvarado, G**.; Román-Bravo, P.; Herrera-Ruiz, D.; Höpfl, H.; Morales-Rojas, H., Selective Isolation of Polycyclic Aromatic Hydrocarbons by Self-Assembly of a Tunable N→B Clathrate. *Cryst. Growth Des.* **2015,** *15*, 1572-1576

1. Campillo-Alvarado, G.; Tovar-Miranda, R., Recent advances and applications of the lipolytic activity of Carica papaya latex. *J. Mol. Catal. B: Enzym.* **2013,** *90*, 49-60

Book Chapters

Campillo-Alvarado, G.; Li, Ch.; MacGillivray, L. R., Topochemistry Meets Supramolecular Chemistry: Opportunities for Targeted Synthesis of Organic Building Blocks in Organic Crystals. **2021**, *in Reactivity in Confined Spaces* (Eds. Lloyd, G.O.; Forgan, R.S.), Royal Society of Chemistry, Monographs in Supramolecular Chemistry No. 31. Print ISBN: 978-1-78801-776-3.

(Invited contribution)

Patents

MacGillivray, R. L.; **Campillo-Alvarado, G**. Separations Using Boron Containing Hydrocarbon Sponges (US 10,889,601, *issued on January 12, 2021*)

Manuscripts in Preparation

Campillo-Alvarado, G.; Onusaitis, B.; Liu, J. R.; Bernhardt, M.; Diao, Y. Flexible Single-Crystal Electronics by Design: Using Large Cocrystallization to Encode Elasticity in Organic Semiconductors. **2021**

Campillo-Alvarado, G.; Swenson, D. C.; Vargas-Olvera, E. C.; Morales-Rojas, H; Höpfl, H.; MacGillivray, L. R., Rotisserie-like Motion Enables Guest Transport in an Organic Crystal. **2021**

Campillo-Alvarado, G.; Onusaitis, B.; Diao, Y., Polymorphism in crystalline non-fullerene acceptors: an emerging toolbox for property control in next-generation organic solar cells. **2021**

CONFERENCE ACTIVITY AND PRESENTATIONS

Invited Talks

Campillo-Alvarado, G., "Flexible single crystal electronics: Unveiling molecular underpinnings and mechanical properties". Invited oral presentation at the 2021 Midwest Regional Meeting (2021, Springfield, MO, USA)

(Invited speaker)

Campillo-Alvarado, G., "Diversifying Organic Semiconductors Through Crystal Engineering". Invited oral presentation (virtual) at the National Chemical Engineering Future Faculty Seminar Series. Organizers: MIT, UC Berkeley, UC Santa Barbara, University of Florida (2021)

(Competitive selection process, by faculty nomination only)

Campillo-Alvarado, G., "Desbloqueando la Fotocatálisis Orgánica en el Estado Cristalino Usando Boro" (transl. Unlocking Organic Photocatalysis Using Boron in the Crystalline Solid State). Invited oral presentation (virtual) at XVI Reunión de la Academia Mexicana de Química Orgánica, México (2021)

(Presented as "Cátedra Juvenil de la Academia Mexicana de Química Orgánica", a competitive award lecture by the Mexican Academy of Organic Chemistry)

Campillo-Alvarado, G., "Cristales Dinámicos: Oportunidades en Materiales de Separación y Semiconductores Orgánicos" (transl. Dynamic Crystals: Opportunities in Separation Materials and Organic Semiconductors). Invited oral presentation (virtual) at Seminario de Investigación, Centro de Investigaciones Químicas, Universidad Autónoma del Estado de Morelos, México (2021)

Conferences Organized

Co-Chair, Virtual Midwest Organic Solid State Chemistry Symposium (2021, virtual modality V-MOSSCS, XXVIII MOSSCS)

Co-Chair, 1st American-Mexican Symposium on Supramolecular Materials Design (2019, Iowa City, IA)
(Funded by an ACS Global innovation Grant and ACS Iowa local section)

Oral and Poster Presentations

Campillo-Alvarado, G., "Confinement and separation of petrochemicals through dynamic recognition in the solid state". Oral presentation at 2021 American Chemical Society Fall National Meeting, Division of Organic Chemistry, Session: Molecular Recognition & Self-Assembly (2021)

Campillo-Alvarado, G., "Engineering π-Stacking of an Anthracene Organic Semiconductor Through Cocrystallization". Poster presentation (virtual) at 2021 Virtual Materials Research Society Spring Meeting & Exhibit (2021)

Campillo-Alvarado, G.; Diao, Y., "Supramolecular Modulation of π-Stacking in Anthracene Crystals—Toward Photoactive Organic Semiconductors". Poster presentation (virtual) at 2020 Virtual Materials Research Society Spring/Fall Meeting & Exhibit (2020)

Campillo-Alvarado, G.; Brannan, A.; MacGillivray, L. R., "Organoboronic Acids Enable Supramolecular Catalysis in the Solid State Through Mechanochemistry". Poster presentation (virtual, Twitter) at LatinXChem, #LatinXChemOrg (2020). Link to poster: https://twitter.com/wimblegon/status/1302941879344955393

(Awarded RSC Chemical Science Prize for 2nd Best Poster, #LatinXChemOrg (Organic Chemistry division) out of 157 contributions)

Campillo-Alvarado, G., "Escape from an Organic Crystal: Guest Transport Properties of a Boron-Based Molecular Machine". Oral presentation (virtual, Zoom) at 6.5th Crystal Engineering and Emerging Materials Workshop of Ontario and Quebec, CEMWOQ (2020, Hosts: McGill University, Concordia University, Wilfrid Laurier University, Windsor University)

(Received ACS Crystal Growth & Design Best Oral Presentation Award, Early Career Researcher category)

Campillo-Alvarado, G., "Crystalline Boron Sponges: From Photochemical Design to Petrochemical Applications". Oral presentation (virtual, Zoom) at Virtual Symposium on Solid-State Organic Chemistry, VS^{3}OC (2020, Hosts: Merck, Molecular Design Institute, New York University)

Campillo-Alvarado, G., "Boron-based molecular bis-tweezers: Crystal engineering of a host for separation of thiophene from benzene". *Oral presentation* at ACS Midwest Regional Meeting (2019, Wichita, KS, USA)

(Received Paul R. Sharp Award for Outstanding Oral Presentation in Inorganic Chemistry)

Campillo-Alvarado, G.; MacGillivray, L. R., "Rotisserie-Style Desolvation: A Boron-Based Molecular Machine Assists Guest Transport in an Organic Crystal". Poster presentation at ACS Research Symposium, University of Iowa Student Chapter (2019, Iowa City, IA, USA)

Campillo-Alvarado, G.; Morales-Rojas, H.; Höpfl, H.; MacGillivray, L. R., "Rotisserie-Style Desolvation: Unveiling Guest Transport Motion in A Close-Packed Organic Crystal". Oral presentation at XXVIII International Materials Research Congress (2019, Cancun, QR, Mexico)

Campillo-Alvarado, G.; Morales-Rojas, H.; Höpfl, H.; MacGillivray, L. R., "N → B Interaction Enables [2+2] Solid-State Photodimerizations: Generation of Diboron Tweezer Hosts with Attractive Separation Properties". *Oral presentation* at Midwest Organic Solid-State Chemistry Symposium XXVIII (2018, St. Louis, MO, USA)

(Received ACS Crystal Growth & Design Best Graduate Student Oral Presentation Award)

Campillo-Alvarado, G.; D'mello, K.; Brannan, A. D.; Feng, Z; Swenson, D. C.; Morales-Rojas, H.; Höpfl, H.; MacGillivray, L. R., "Shining Light on Boron-Based Supramolecular Materials: a Strategy for the Synthesis of Organic Building Blocks". Oral presentation at XXVII International Materials Research Congress (2018, Cancun, Mexico)

Campillo-Alvarado, G.; D'mello, K.; Höpfl, H.; Morales-Rojas, H.; MacGillivray, L. R., "Teaching Boronic Esters New Tricks: Templates of [2+2]-Photocycloadditions of Olefins in the Solid State". Oral presentation at Mexican Symposium of Supramolecular Chemistry (2018, Colima, Colima Mexico)

Campillo-Alvarado, G.; Morales-Rojas, H.; Höpfl, H.; MacGillivray, L. R., "Supramolecular Chemistry of Organoboron Compounds — from Crystal Engineering to Photoreactive Solids". Poster presentation at Gordon Research Conference on Crystal Engineering (2018, Newry, ME, USA)

Campillo-Alvarado, G.; Morales-Rojas, H.; Höpfl, H.; MacGillivray, L. R., "Supramolecular Chemistry of Organoboron Compounds — from Crystal Engineering to Photoreactive Solids". Poster presentation at Gordon Research Seminar on Crystal Engineering (2018, Newry, ME, USA)

Campillo-Alvarado, G., "Mechanochemistry: A Green Chemistry Approach to Enable Catalysis in the Solid State". *Oral presentation* at CLAS Student Sustainability Showcase (2018, Iowa City, IA, USA)

(Highlighted in The Daily Iowan: http://daily-iowan.com/2018/04/25/student-sustainability-showcase-to-feature-diverse-exhibits/)

Campillo-Alvarado, G.; Morales-Rojas, H.; Höpfl, H.; MacGillivray, L. R., "Boronic esters as supramolecular tools to form complex host-guest systems and direct solid-state reactivity". Oral presentation at Midwest Organic Solid-State Chemistry Symposium XXVII (2017, Manhattan, KS, USA)

Campillo-Alvarado, G.; Morales-Rojas, H.; Höpfl, H.; MacGillivray, L. R., "Self-Assembly of Fluorinated Boronic Esters with Diamines: New Opportunities for N→B Adducts". Oral presentation at Midwest Organic Solid-State Chemistry Symposium XXVI (2016, Grand Forks, ND, USA)

Campillo-Alvarado, G.; Morales-Rojas, H.; Höpfl, H., "Molecular Self-assembly of new adducts derived from boronic esters and diamines". Poster presentation at XXIII International Materials Research Congress (2014, Cancun, QR, Mexico)

Campillo-Alvarado, G.; Tovar-Miranda, R., Cruz-Sánchez, J., "Magnesium and titanium enolates of (R)-4-phenyl-thiazolidinethione for acetate aldol additions", Poster presentation at 30th Latin-American Congress of Chemistry (Cancun, QR, Mexico)

TEACHING AND MENTORING EXPERIENCE

University of Illinois at Urbana–Champaign, **Research Mentor of Undergraduate Students** 2020 – present
Currently mentors three undergraduate students

University of Iowa, **Teaching Assistant** 2015 – 2018
Principles of Chemistry II Laboratory (Fall 2018)
Organic Chemistry Laboratory for Majors (Spring 2017)
Organic Chemistry Laboratory (Fall 2015, Spring 2016, Summer 2016, Fall 2017)
Organic Chemistry Laboratory *Head TA* (Fall 2016)

University of Iowa, Research Mentor of Undergraduate Students 2015 – 2020
Mentored seven undergraduate students

Supervised one undergraduate thesis (Honors in Chemistry, link: https://ir.uiowa.edu/honors_theses/337/)

University of Iowa, Research Mentor in the Secondary Student Training Program (SSTP) 2016, 2017
Mentored two high-school students in during Summers at the University of Iowa

Crystallography tutor at the 2014 International Research School (Moscow, Russia) 2014

RESEARCH EXPERIENCE

University of Illinois at Urbana–Champaign, **Postdoctoral Research Associate** (2020 – present)
My current research focuses on the understanding of cooperative single crystal transitions in organic semiconductors and the development of flexible and stimuli-responsive electronics. Advisor: Prof. Ying Diao

University of Iowa, **Graduate Research Assistant** (2015 – 2020)
a) Discovered the first pharmaceutical cocrystals of blockbuster boron-containing drugs Tavaborole (Kerydin®) and Crisaborole (Kerydin®). b) Introduced boronic acids and derivatives as molecular *templates* to achieve photochemical reactions. c) Developed boron-based materials that can separate complex solvent mixtures through crystallization. Advisor: Prof. Leonard R. MacGillivray

National Autonomous University of Mexico, Research stay (2015)
Synthesized organic building blocks for artificial molecular rotors. Advisor: Prof. Norberto Farfán

Autonomous University of the State of Morelos, Graduate Research Assistant (2013 – 2015)
Discovered boronic ester-based hosts that can confine small aromatics. Advisor: Prof. Herbert Höpfl

University of Veracruz, Undergraduate Research Assistant (2010 – 2012)
a) Established synthetic methodologies for Evans-type aldolic reactions. b) Employed *C. papaya* lipases as biocatalyst for transesterification reactions. Advisor: Prof. Ricardo Tovar-Miranda

National University of Ireland, Galway, Research Stay (2009)
Utilized single-crystal X-ray diffraction with in-house software *Oscail* to characterize organometallic molecules. Advisor: Prof. Patrick McArdle

SERVICE TO PROFESSION AND UNIVERSITY

Co-Chair, Virtual Midwest Organic Solid State Chemistry Symposium (2021)
Co-Chair, 1st American Mexican Symposium on Supramolecular Materials Design, University of Iowa (2019)
Reviewer, *Journal from the International Union of Crystallography* (UICrJ, seven peer-reviews) (2017 – present)
Reviewer, MDPI journal *Molecules* (one peer-review) (2017 – present)
Laboratory Safety Liaison and EHS contact, MacGillivray Research Group (2016 – 2020)
Social media coordinator, University of Iowa Chemistry Graduate Student Association Board (2018 – 2020)
Research Mentor, Secondary Student Training Program - Belin-Blank Center (2016, 2017)
Participant, Faculty Innovators Workshop, University of Iowa - John Pappajohn Entrepreneurial Center (2017)
Undergraduate student representative, University of Veracruz Council (2010 – 2011)
Organizing committee member, Symposium in honor of Prof. Roald Hoffmann at University of Veracruz (2010)
Organizing committee member, ExpoCiencias Regional Sur-Sureste México (Regional science fair) (2010)
Co-Chair, ExpoCiencias Regional Sur-Sureste México (Regional science fair) (2008)

COMMUNITY OUTREACH

Content leader and organizer, Cena y Ciencias (transl. Science and Supper), University of Illinois at Urbana-Champaign and Urbana Public School District (2020 –) https://mrsec.illinois.edu/node/337 and https://www.istem.illinois.edu/news/cena.ciencias.spr21.html

Tutor, outreach program “Chemistry and a Movie” in Northwest Junior High School (2018)

Radio host, A Ciencia Cierta, a popular science radio show at the University of Veracruz (2008 – 2013)

TRAINING IN DIVERSITY, EQUITY, AND INCLUSION

Participant and facilitator in “Racism in STEM Discussion Sessions”, Illinois Materials Research Science and Engineering Center (I-MRSEC), University of Illinois at Urbana-Champaign (2020 – 2021)

Participant in “Angles of Difference: Diversity Equity & Inclusion in Crystallography” training program from the American Crystallographic Association (2021)

MEDIA COVERAGE

For press coverage highlighting my outreach efforts with underrepresented minorities, see: For articles highlighting my outreach efforts with underrepresented minorities, see:

I-STEM Illinois Education Initiative, May 7, 2021. At Cena y Ciencias, Illinois Scientists Shine a (UV) Light on Fluorescence

I-STEM Illinois Education Initiative, November 12, 2020. Virtual Cena y Ciencias Provides Hispanic/Latinx Role Models, Encourages Hands-on “Kitchen Science”—All Done in Spanish.

For on press coverage highlighting my work on sustainable solid-state chemistry, see:

The Daily Iowan, April 25, 2018. Student sustainability showcase to feature diverse exhibits

For an interview on my postdoctoral work and outreach activities, see:

Ciencia Cakotanú, Revista de Fotografía y Divulgación Científica, Volume 2, No. 3, 2021. Entre ciencia, cristales y pizza. (Spanish)

Ciencia Cakotanú, el Podcast, 2021: Link to Spotify interview. (Spanish)

PROFESSIONAL SOCIETIES AND MEMBERSHIPS

Member of the American Crystallographic Association (2021 – present)
Member of the National Postdoctoral Association (2020 – present)
Member of the American Institute of Chemical Engineers (2020 – present)
Member of the Materials Research Society (2020 – present)
Member of the Chemistry Graduate Student Association Board (GSAB) at University of Iowa (2018 – 2020)
Member of the Supramolecular Chemistry Society of the Mexican Council of Science and Technology (CONACyT) (2018 – present)
Member of the American Chemical Society (2016 – present)
Member of the International Movement for Leisure Activities in Science and Technology (MILSET) (2006 – present)
Member of GEO for Youth Veracruz, a nonprofit NGO sponsored by UNEP (2006 – 2012)