

Wan-Yi “Amy” Chu

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Professional appointments

Assistant Professor of Chemistry <i>Saint Mary's College of California, Moraga CA</i>	July 2022 – present
Assistant Professor of Chemistry Rhoda Goldman Endowed Professorship <i>Mills College, Oakland CA</i>	August 2020 – June 2022
Researcher Kleinman Center for Energy Policy <i>University of Pennsylvania, Philadelphia PA</i>	February 2019 – present
Lecturer <i>California State University, Monterey Bay</i>	August 2019 – May 2020
Lecturer <i>San Francisco State University</i>	August 2019 – December 2019
Postdoctoral Fellow Vagelos Institute for Energy Science and Technology <i>University of Pennsylvania, Philadelphia PA</i> Advisor: Professor Karen I. Goldberg	August 2017 – August 2019
Postdoctoral Fellow Center for Enabling New Technologies through Catalysis <i>University of Washington, Seattle WA</i> Advisor: Professor Karen I. Goldberg	April 2016 – August 2017

Education

PhD, Chemistry <i>University of Illinois at Urbana-Champaign, Champaign IL</i> Advisor: Professor Thomas B. Rauchfuss	May 2016
BS, Chemistry <i>National Taiwan University, Taipei Taiwan</i> Advisor: Professor Shih-Tzung Liu	June 2011

Teaching experience

Mills College

Instructor	CHEM 018 General Chemistry 2	Spring 2022
Instructor	CHEM 109 Analytical Chemistry	Fall 2021
Instructor	CHEM 145 Inorganic and Organometallic Chemistry with Lab	Spring 2021

Instructor CHEM 179 Directed Research **Spring 2021 – Spring 2022**

Instructor CHEM 017 General Chemistry 1 **Fall 2020 – Fall 2021**

California State University, Monterey Bay

Instructor CHEM 211 Organic Chemistry 1 **Spring 2020**

Instructor CHEM 109 Introductory Chemistry **Fall 2019 – Spring 2020**

San Francisco State University

Instructor CHEM 115 Essential Concepts of Chemistry Seminar and Lab **Fall 2019**

University of Illinois in Urbana-Champaign

TA CHEM 315 Advanced Inorganic Synthesis Lab **Fall 2011, 2012**

TA CHEM 312 Inorganic Chemistry **Spring 2012**

TA General Chemistry 2 **Spring 2012**

Publications

Peer-reviewed articles

Undergraduate coauthors are underlined.

1. Rubashkin, S.; **Chu, W. -Y**; Goldberg, K. I. "Lowering the Barrier to C-H activation at Ir(III) Through Pincer Ligand Design". *Organometallics*, **2021**, *40*, 9, 1296–1302.
2. **Chu, W. -Y**; Culakova, Z; Wang, B. T; Goldberg, K. I "Hydrogenation of CO₂ and Esters in Base-Free Conditions for Synthesis of MeOH" *ACS Catal.* **2019**, *9* 9317-9326. (§undergraduate researcher)
3. **Chu, W. -Y.**; Richers, C. P.; Kahle E. R; Rauchfuss, T.B.; Arrigoni, F.; Zampella, G. "Imine-Centered Reactions in Imino-Phosphine Complexes of Iron Carbonyls" *Organometallics*, **2016**, *35*, 2782.
4. **Chu, W.-Y.**; Gilbert-Wilson, R.; Rauchfuss, T. B.; van Gastel, M.; Neese, F. "Cobalt Phosphino- α -Iminopyridine-Catalyzed Hydrofunctionalization of Alkenes: Catalyst Development and Mechanistic Analysis" *Organometallics*, **2016**, *35*, 2900.
5. **Chu, W. -Y.**[†]; Gilbert-Wilson, R.[†]; Rauchfuss, T. B. "Phosphine-Iminopyridines as Catalytic Platforms for Hydrofunctionalization of Alkenes" *Inorg. Chem.*, **2015**, *54*, 5596 ([†] Authors contributed equally)
6. **Chu, W. -Y.**; Zhou, X. Y.; Rauchfuss, T. B. "Cooperative Metal-Ligand Reactivity and Catalysis in Low-Spin Ferrous Alkoxides" *Organometallics*, **2015**, *34*, 1619. (Cover Article)
7. Lee, C.-C.; **Chu, W. -Y.**; Liu, Y.-H.; Peng, S.-M.; Liu, S.-T. "Coordination and Catalytic Activity of Ruthenium Complexes Containing Tridentate P,N,O Ligands" *Eur. J. Inorg. Chem.* **2011**, *2011*, 4801. (Cover Article)

Energy policy white papers

1. Serpell, S.; H'sain, Z.; **Chu, W. -Y.** "Efficiency Analysis on Using Ammonia as a Carrier for the Hydrogen Economy." *The Kleinman Center for Energy Policy, in preparation.*
2. Serpell, S.; Paren, B.; **Chu, W.-Y.** "Water as a Critical Resource in Power Generation." *The Kleinman Center for Energy Policy, in review.*
3. Serpell, S.; Paren, B.; **Chu, W. -Y.** "Rare Earth Elements: A Resource Constraint of the Energy Transition." *The Kleinman Center for Energy Policy. 2021.*
<https://kleinmanenergy.upenn.edu/research/publications/rare-earth-elements-a-resource-constraint-of-the-energy-transition/>
4. Serpell, S.; **Chu, W. -Y.**; Paren, B. "Balancing Act: Can Petrochemicals Be Both Emissions Free and Zero-waste?" *The Kleinman Center for Energy Policy. 2020.*
<https://kleinmanenergy.upenn.edu/research/publications/balancing-act-can-petrochemicals-be-both-emissions-free-and-zero-waste/>
5. Serpell, S.; Paren, B.; **Chu, W. -Y.** "The Best Local Response to Climate Change is a Comprehensive Efficiency Plan" *The Kleinman Center for Energy Policy. 2020.*
<https://kleinmanenergy.upenn.edu/paper/best-local-response-climate-change-comprehensive-efficiency-plan>
6. Serpell, S.; **Chu, W. -Y.**; Paren, B.; Sankar, G. "Feasibility of Seasonal Storage for a Fully Electrified Economy" *The Kleinman Center for Energy Policy. 2019.*
<https://kleinmanenergy.upenn.edu/policy-digests/feasibility-seasonal-storage-fully-electrified-economy>
7. Serpell, S.; **Chu, W. -Y.**; Paren, B.; Sankar, G. "Preparing PGW for a Low-Carbon Future" *The Kleinman Center for Energy Policy. 2019.*
<https://kleinmanenergy.upenn.edu/paper/best-local-response-climate-change-comprehensive-efficiency-plan>

Patents

Dash, A.; Rauchfuss, T. B.; **Chu, W. -Y.**[†]; Gilbert-Wilson, R.[†] "Ligand components, associated reaction products, activated reaction products, hydrosilylation catalysts and hydrosilylation curable compositions including the ligand components and associated methods for preparing the same" US Patent 10,046,318, August 14, 2018. ([†] Authors contributed equally)

Service and outreach

Institutional Service

Faculty mentor for the Russell Scholar Program <i>Mills College, Oakland CA</i>	Spring 2021 – present
Budget advisory committee member <i>Mills College, Oakland CA</i>	Fall 2021 – present
Core curriculum reviewer for Scientific Inquiry <i>Mills College, Oakland CA</i>	Fall 2021 – present

Mentor for the Vagelos Integrated Program for Energy Research
University of Pennsylvania, Philadelphia PA **Summer 2018 – Summer 2019**

Mentor for the Post-Baccalaureate Research Education Program
University of Washington, Seattle WA **Fall 2016 – Spring 2017**

Service to the academic community

ACS Education module developer
Green & Sustainable Chemistry Education Module Development Project **Summer 2021 – present**

Content developer and workshop participant
Virtual Inorganic Pedagogical Educational Resource **Summer 2021 – present**

Mentor
Chemistry Women Mentorship Network **Summer 2021 – present**

Peer reviewer for Polyhedron, Journal of Chemical Crystallography **Ongoing**

Abstract reviewer
International Young Professionals Conference on Process Engineering, Germany **January 2019**

Outreach

Science Presenter
Franklin Institute, Philadelphia PA **Fall 2018 – Summer 2019**

Philadelphia Area Girls Enjoying Science
Philadelphia PA **Oct 27th, 2018**

Moelis Access Science Chemistry Instructor
University of Pennsylvania, Philadelphia PA **Fall 2017 – Spring 2018**

Experiment leader at the Roosevelt High School
Seattle WA **April 18th – 20th, 2017**

Finalist Judge
Washington State Science and Engineering Fair, Bremerton WA **April 1st 2017**

Professional development activities

Faculty Success Program
National Center for Faculty Development & Diversity **Summer 2021**

ACS Postdoc to PUI Professor workshop
San Diego, CA **April 20th – 21st, 2018**

ACS Green Chemistry Summer School
Golden, CO **June 20th – 27th, 2017**

Student committees

Woman in Chemistry, Professional Advancement Committee <i>University of Pennsylvania, Philadelphia PA</i>	Fall 2018 – Summer 2019
Department of Chemistry Graduate Student Advisory Committee <i>University of Illinois Urbana Champaign, Champaign IL</i>	Spring 2014 – Spring 2016
Department of Chemistry Inorganic Area Student-Selected Seminar Committee <i>University of Illinois Urbana Champaign, Champaign IL</i>	Spring 2015
Sylvia M. Stoesser Lecture in Chemistry Committee <i>University of Illinois in Urbana-Champaign, Champaign IL</i>	Spring 2014

Grants

American Chemical Society Petroleum Research Fund

ACS PRF Undergraduate New Investigator <i>Total amount: \$55,000</i>	September 2022 – August 2024
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Mills Grants

Rhoda Goldman Endowed Professorship <i>Amount per year: \$2,000</i> <i>Total amount: \$4,000</i>	August 2021 – July 2023
Mary Ann Childers Kinhead (MACK) Faculty Innovation Grant <i>Total amount: \$1,550</i>	June 2021 – May 2022
Faculty Development Committee Summer Research Grant <i>Total amount: \$4,500</i>	Summer 2021
Faculty Development Committee Spring Research Grant <i>Total amount: \$1,500</i>	Spring 2021
Faculty Development Committee Fall Research Grant <i>Total amount: \$1,000</i>	Fall 2020

Awards

ACS Division of Inorganic Chemistry Poster Award <i>American Chemical Society National Meeting Spring 2022, San Diego</i>	March 2022
Rhoda Goldman Endowed Professorship <i>Mills College</i>	Fall 2021
C3E Poster Award <i>The Clean Energy Education & Empowerment Initiative</i>	Fall 2019
Dow Chemical Travel Grant <i>University of Illinois at Urbana-Champaign</i>	Spring 2015

Woman Chemists Committee Travel Award
University of Illinois at Urbana-Champaign

Fall 2014

Chia-Chen Chu Kang Fellowship
University of Illinois at Urbana-Champaign

Fall 2014 – Fall 2015

Robert Carr Fellowship
University of Illinois at Urbana-Champaign

Fall 2013 – Fall 2014

Mentored Presentations

Undergraduate presenters are underlined.

At Mills College

1. Cornejo, P.; **Chu, W.-Y.** “Synthesis of $\text{Me}_8[14]\text{dieneN}_4(\text{HBF}_4)_2$ and the corresponding Co(II) complex”. ACS National Meeting **2022**, San Diego, *oral presentation*.
2. Zeng, L.; Emerson, M.; Cornejo, P.; **Chu, W.-Y.** “Synthesis of cobalt tetrafluoroborate complexes supported by macrocyclic ligands”. ACS National Meeting **2022**, San Diego, *poster presentation, winner of the ACS Division of Inorganic Chemistry Poster Award Competition*.

Before Mills College

3. Wang, B. T.; **Chu, W.-Y.**; Goldberg, K. I. “Homogeneous cascade hydrogenation of carbon dioxide to methanol.” VIPER symposium **2018**, Univ. of Pennsylvania, *poster presentation*.

Selected Presentations

Undergraduate coauthors are underlined.

At Mills College

1. **Chu, W.-Y.**; Orr, M.; Pham, J.; Crowder, K.; Eppley, H.; Nataro, C. “Ionic VIPER workshops: Building community one learning object at a time”. ACS National Meeting **2022**, San Diego, *poster presentation*.
2. Wang, B. T.; Culakova, Z.; Cornejo, P.; Emerson, M.; Zeng, L. Goldberg, K. I.; **Chu, W.-Y.** “Restoring balance to the carbon cycle on Earth: production of fuels and chemicals from CO_2 using organometallic catalysis”. Davidson College, **2021**, *invited seminar speaker*.
3. Cornejo, P.; Emerson, M.; Zeng, L.; **Chu, W.-Y.** “Synthesis of Perchlorate-free Cobalt Complexes Supported by Macrocyclic Ligands and Their Implications in CO_2 conversion”. Russell Scholars Research Symposium, **2021**, Mills College, CA, *poster presentation*.

Before Mills College

4. **Chu, W.-Y.**; Wang, B. T.; Culakova, Z.; Goldberg, K. I. “Restoring balance to the carbon cycle on Earth: production of fuels and chemicals from CO_2 using organometallic catalysis” Drexel University Chemistry Department **2019**, Philadelphia PA, *invited seminar speaker*.
5. **Chu, W.-Y.**; Wang, B. T.; Culakova, Z.; Goldberg, K. I. “Tandem catalysis using a stable homogeneous system for CO_2 hydrogenation to MeOH” Green Chemistry Gordon Research Seminar **2018**, Castelldefels, Spain, *oral and poster presentations*.

6. **Chu, W.- Y.**; Culakova, Z.; Goldberg, K. I. "Restoring balance to the carbon cycle on earth: envisioning a sustainable future using CO₂ for synthesis of chemicals and fuels" Barnard College Chemistry Department **2018**, *invited seminar speaker*.
7. **Chu, W.- Y.**; Culakova, Z.; Goldberg, K. I. "Transition metal catalyzed hydrogenation of CO₂ and carbonyl compounds" ACS National Meeting **2018**, Award Symposium for Prof. Kubiak, New Orleans, LA, *invited oral presentation*.
8. **Chu, W.- Y.**; Culakova, Z.; Goldberg, K. I. "Transition metal catalyzed hydrogenation of CO₂ and carbonyl compounds" ACS National Meeting **2018**, Award Symposium for Prof. Kubiak, New Orleans, LA, *invited oral presentation*.
9. **Chu, W. -Y.**; Goldberg, K. I. "Atom-economical homogeneous catalytic reduction of CO₂ to commodity chemicals" ACS National Meeting **2018**, New Orleans, LA, *poster presentation*.
10. **Chu, W.-Y.**; Culakova, Z.; Goldberg, K. I. "Homogenous catalytic reduction of CO₂ to MeOH at moderate temperatures" ACS National Meeting **2017**, Washington D.C., *poster presentation*.
11. **Chu, W.-Y.**; Gilbert-Wilson, R.; Rauchfuss, T. B. "Fe-, Co-Catalysts for Hydrosilylation Supported by New PNpy Ligands." Organometallic Chemistry Gordon Research Conference **2016**, Newport RI, *poster presentation*.
12. **Chu, W.-Y.**; White, J.; Goldberg, K. I. "CO₂ functionalization using simple phosphino-hydrido complexes in base-free conditions" Center for Enabling New Technologies through Catalysis Annual Meeting **2016**, Seattle WA, *poster presentation*.
13. **Chu, W.-Y.**; Zhou, X. Y.; Rauchfuss, T. B. "New ligand platforms for hydridoiron(II) complexes". ACS National Meeting **2014**, San Francisco CA, *oral presentation*
14. **Chu, W.-Y.**; Rauchfuss, T. B. "Stabilization of Ni-CO₂ Complexes by Cationic Lewis Acids" International Conference on Bioinorganic Chemistry **2013**, Grenoble, France, *poster presentation*.