

Andy I. Nguyen
4246 SES, Department of Chemistry
University of Illinois at Chicago, Chicago, IL 60607
(949) 433-6367, email: andyn@uic.edu

Professional Appointments

2020 – present University of Illinois Chicago
Assistant Professor of Chemistry
2016 – 2019 Lawrence Berkeley National Laboratory
Post-Doctoral Fellow (Advisor – Ronald N. Zuckermann)

Education

2010 – 2016 University of California, Berkeley
Ph.D., Inorganic Chemistry (Advisor – T. Don Tilley)
2006 – 2010 University of California, Irvine
B.S. Chemistry, *cum laude* (Advisor – Alan F. Heyduk)

Awards and Honors

2025 University of Illinois Chicago Rising Star Award
2025 National Science Foundation – CAREER Award
2024 Department of Energy – Early Career Research Program (ECRP) Award
2024 National Institute of Health – Maximizing Investigators' Research Award (MIRA)
2021 ACS Petroleum Research Fund – Doctoral New Investigator Award
2019 Lawrence Berkeley National Laboratory - Safety Spot Award
2016 Materials Postdoc Fellow – Lawrence Berkeley National Laboratory
2012 NSF Graduate Research Fellowship – Honorable Mention
2010 Hertz Fellowship – Finalist
2010 NSF Graduate Research Fellowship – Honorable Mention
2010 University of California, Irvine – Chancellor's Award for Excellence in Undergraduate Research
2010 University of California, Irvine – Honors Award
2009 ACS Orange County Section – Outstanding Chemistry Student
2009 ACS Division of Inorganic Chemistry Undergraduate Award
2009 ACS Division of Organic Chemistry Summer Undergraduate Research Fellowship (SURF) – Sponsor: Pfizer
2008 UCI UROP Grant
2007 CRC Press Chemistry Achievement Award

Independent Publications (*corresponding author)

- (27) Richardson-Matthews, R.; Dang, V. T.; Velko, K.; **Nguyen, A. I.***; *Methods in Enzymology*, in revision. *Invited*.
“Chemical Methods to Stabilize Segments of Metalloproteins in the Form of Peptides”
- (26) Richardson-Matthews, R.; Velko, K.; Bhunia, B.; Ghosh, S.; Oktawiec, J.; Brunzelle, J. S.; Dang, V.T.; **Nguyen, A.I.***; *J. Am. Chem. Soc.* **2025**, *147*, 17433–17447
“Metal α -helix peptide frameworks”
- (25) **Nguyen, A.I.***; Ganatra, P.; Hess, S.S.; Nichols, S.; Heinz-Kunert, S.L.; *Trends Chem.* **2025**, *7*, 225-239. *Invited*.
“Advances in the design of π -conjugated peptide assemblies”
- (24) Dang, V. T.; Engineer, A.; McElheny, D.; Drena, A.; Telser, J.; Tomczak, K.; **Nguyen, A. I.***; *Chem. Eur. J.* **2024**, *30*, e202402101
“Crystallography Reveals Metal-Triggered Restructuring of β -Hairpins”
- (23) Ganatra, P.; Wang, D. F.; Ganatra, V.; Dang, V. T.; **Nguyen, A. I.***; *J. Am. Chem. Soc.* **2024**, *146*, 22236–22246

- “Diverse proteomimetic frameworks via rational design of π -stacking peptide tectons”
- (22) Vijayakanth, T.*; Dasgupta, S.; Ganatra, P.; Rencus-Lazar, S.; Desai, A. V.; Nandi, S.; Jain, R.; Bera, S.; **Nguyen, A. I.***; Gazit, E.*; Misra, R.*; *Chem. Soc. Rev.*, **2024**, 53, 3640-3655.
- “Peptide Hydrogen-bonded Organic Frameworks”
- (21) Heinz-Kunert, S. L.; Pandya, A.; Dang, V. T.; Oktawiec, J.; **Nguyen, A. I.***; *Biomacromolecules*, **2024**, 25, 2016-2023
- “Pore restructuring of peptide frameworks by mutations at distal packing residues”
- (20) Hess, S.S.; Coppola, F.; Dang, V. T.; Tran, P. T.; Mickel, P. J.; Oktawiec, J.; Ren, Z.; Král, P.; **Nguyen, A. I.***; *J. Am. Chem. Soc.* **2023**, 145, 36, 19588-19600
- “Noncovalent peptide assembly enables crystalline, permutable, and reactive thiol frameworks”
- (19) Ghosh, S.; Tran, P. N.; McElheny, D.; Perez, J. J.; **Nguyen, A. I.***; *Inorg. Chem.* **2022**, 61, 6679-6687.
- “Peptidic Scaffolds Enable Rapid and Multivariate Secondary Sphere Evolution for an Abiotic Metallocatalyst”
- (18) Heinz-Kunert, S. L.*; Pandya, A.*; Dang, V. T.; Tran, P. N.; Ghosh, S., McElheny, D.; Santarsiero, B. D.; Ren, Z.; **Nguyen, A. I.***; *J. Am. Chem. Soc.*, **2022**, 144, 7001–7009. *Equal Contribution
- “Assembly of π -Stacking Helical Peptides into a Porous and Multivariable Proteomimetic Framework”

Publications Before UIC

- (17) Amtawong, J.; **Nguyen, A. I.**; Tilley*, T. D.; *J. Am. Chem. Soc.* **2022**, 144, 1475-1492.
“Mechanistic Aspects of Cobalt Oxo Cubane Clusters in Oxidation Chemistry”
- (16) Wang, S.-T.; Gray, M. A.; Xuan, S.; Lin, Y.; Byrnes, J.; **Nguyen, A. I.**; Todorova, N.; Stevens, M. M.; Bertozzi, C. R.; Zuckermann, R. N.; Gang, O.; *Proc. Natl. Acad. Sci. USA.* **2020**, 117, 6339-6348.
“DNA Origami Protection and Molecular Interfacing through Engineered Sequence-Defined Peptoids”
- (15) Wijaya, A.*; **Nguyen, A. I.***; Roe, L. T.; Butterfoss, G. L.; Spencer, R. K.; Li, N. K.; Zuckermann, R. N. *J. Am. Chem. Soc.*, **2019**, 141, 19436-19447. *Equal Contribution
“Cooperative Intramolecular Hydrogen Bonding Strongly Enforces *cis*-Peptoid Folding”
- (14) Amtawong, J.; Balcells, D.; Wilcoxon, J.; Handford, R. C.; Biggins, N.; **Nguyen, A. I.**; Britt, R. D.; Tilley, T. D. *J. Am. Chem. Soc.*, **2019**, 141, 19859-19859.
“Isolation and Study of Ruthenium-Cobalt Oxo Cubanes Bearing a High-Valent, Terminal Ru^V-Oxo with Significant Oxyl Radical Character”
- (13) **Nguyen, A. I.**; Spencer, R. K.; Anderson, C. L.; Zuckermann, R. N. *Chem. Sci.*, **2018**, 9, 8806-8813.
“A Bio-Inspired Approach to Ligand Design: Folding Single-Chain Peptoid to Chelate a Multimetallic Cluster”
- (12) **Nguyen, A. I.***; Van Allsburg, K. M.*; Terban, M. W.; Bajdich, M.; Oktawiec, J.; Ziegler, M. S.; Dombrowski, J. P.; Lakshmi, K. V.; Drisdell, W. S.; Yano, J.; Billinge S. J. L.; Tilley, T. D. *Proc. Natl. Acad. Sci. USA.* **2019**, 116, 11630-11639 *Equal contribution
“Stabilization of reactive Co₄O₄ cubane oxygen-evolution catalysts within porous frameworks”
- (11) **Nguyen, A. I.**; Darago, L. E.; Balcells, D.; Tilley, T. D. *J. Am. Chem. Soc.*, **2018**, 140, 9030-9033.
“Influence of a “Dangling” Co(II) Ion Bound to a [MnCo₃O₄] Oxo Cubane”

- (10) Olshansky, L.; Huerta-Lavorie, R.; **Nguyen, A. I.**; Vallapurackal, J.; Furst, A.; Tilley, T. D.; Borovik, A. S. *J. Am. Chem. Soc.* **2018**, *140*, 2739-2742.
“Artificial Metalloproteins Containing Co₄O₄ Active Sites”
- (9) Wang, S–T.; Lin, Y.; Spencer, R. K.; Thomas, M. R.; **Nguyen, A. I.**; Amdursky, N.; Pashuck, E. T.; Skaalure, S. C.; Song, C. Y.; Parmar, P. A.; Morgan, R. M.; Ercius, P.; Aloni, S.; Zuckermann, R. N.; Stevens, M. M. *ACS Nano*, **2017**, *11*, 8579–8589.
“Sequence-Dependent Self-Assembly and Structural Diversity of Islet Amyloid Polypeptide-Derived β -Sheet Fibrils”
- (8) **Nguyen, A. I.**; Suess, D. L. M.; Darago, L. E.; Oyala, P. H.; Levine, D. S.; Ziegler, M. S.; Britt, R. D.; Tilley, T. D. *J. Am. Chem. Soc.* **2017**, *139*, 5579-5587.
“Manganese–Cobalt Oxido Cubanes Relevant to Manganese-Doped Water Oxidation Catalysts”
- (7) **Nguyen, A. I.**; Wang, J.; Levine, D. S.; Ziegler, M. S.; Tilley, T. D. *Chem. Sci.* **2017**, *8*, 4274-4284.
“Synthetic control and empirical prediction of redox potentials for Co₄O₄ cubanes over a 1.4 V range: implications for catalyst design and evaluation of high-valent intermediates in water oxidation”
- (6) **Nguyen, A. I.**; Ziegler, M. S.; Oña-Burgos, P.; Sturzbecher-Hohne, M.; Kim, W.; Bellone, D. E.; Tilley, T. D. *J. Am. Chem. Soc.*, **2015**, *137*, 12865-12872.
“Mechanistic Investigations of Water Oxidation by a Molecular Cobalt Oxide Analogue: Evidence for a Highly Oxidized Intermediate and Exclusive Terminal Oxo Participation”
- (5) **Nguyen, A. I.**; Hadt, R. G.; Solomon, E. I.; Tilley, T. D. *Chem. Sci.* **2014**, *5*, 2874-2878.
“Efficient C–H Bond Activations via O₂ cleavage by a Dianionic Co(II) Complex”
- (4) Heyduk, A. F.; Zarkesh, R. A.; **Nguyen, A. I.** *Inorg. Chem.* **2011**, *50*, 9849-9863.
“Designing Catalysts for Nitrene Transfer Using Early Transition Metals and Redox-Active Ligands”
- (3) **Nguyen, A. I.**; Zarkesh, R. A.; Lacy, D. C.; Thorson, M. K.; Heyduk, A. F. *Chem. Sci.*, **2011**, *2*, 166-169.
“Catalytic Nitrene Transfer by a Zirconium(IV) Redox-Active Ligand Complex”
- (2) Blackmore, K. J.; **Nguyen, A. I.**; Heyduk, A. F. *Inorg. Synth.*, **2010**, *35*, 92-96.
“*N*-*tert*-butyl *ortho*-aminophenol, *ortho*-iminoquinone, and a zirconium(IV) bis(aminophenol) complex”
- (1) **Nguyen, A. I.**; Blackmore, K. J.; Carter, S. M.; Zarkesh, R. A.; Heyduk, A. F. *J. Am. Chem. Soc.*, **2009**, *131*, 3307-3316.
“One- and Two- Electron Reactivity of a Tantalum(V) Complex with a Redox-Active Tris(amido) Ligand”

Current, Pending, and Previous Support

Current Support

Source of Support: National Science Foundation

Project Number: 2440121 (PI: Nguyen)

Title: “CAREER: Design of Protein-like Materials from pi-Conjugated Peptides”

Total cost: \$749,999

Start and end date: 3/2025 – 02/2030

Source of Support: National Institute of General Medical Sciences

Project Number: R35GM154793-01 (PI: Nguyen)

Title: “In crystallo biomimetic oxygenase chemistry within peptidic frameworks”

Total cost: \$1,913,800

Start and end date: 09/2024 – 08/2029

Source of Support: Department of Energy
Project Number: 0000283299 (PI: Nguyen)
Title: “Enzyme-like porous catalysts for upgrading biomass feedstocks”
Total cost: \$875,000
Start and end date: 7/2024 – 08/2029

Previous Support

Source of Support: American Chemical Society Petroleum Research Fund
Project Number: 62285-DNI (PI: Nguyen)
Title: “Upgrading Small Molecule Catalysts with Peptidic Scaffolds to Tune the Selectivity of C(sp³)-H Oxidation”
Direct cost: \$110,000
Start and end date: 09/2021 – 08/2023

Teaching Experience

Undergraduates mentored – 5 at UIC, 4 during graduate study, 3 during postdoctoral appointment

2020-present	UI Chicago, CHEM 510 – Seminar
2021-present	UI Chicago, CHEM 314 – Undergraduate inorganic chemistry
2020-present	UI Chicago, CHEM 514 – Graduate inorganic chemistry
2015	UC Berkeley, GSI for CHEM 104A – Advanced inorganic chemistry I
2012	UC Berkeley, GSI for CHEM 104A – Advanced inorganic chemistry I
2011	UC Berkeley, GSI for CHEM 104B – Advanced inorganic chemistry II
2010	UC Berkeley, GSI for CHEM 3A – Introductory organic chemistry laboratory

Invited Talks

- (20) 21st International Conference on Biological Inorganic Chemistry – July 2025, Long Beach, CA
- (19) 75th American Crystallographic Association Meeting – July 18-23, 2025, Lombard, IL
- (18) Iowa State University – April 18, 2025
- (17) University of Pittsburg – February 4, 2025
- (16) ACS Spring National Meeting, March 23-27, 2025, San Diego, CA - INOR: “More than Warriors from Group 14”
- (15) Colorado School of Mines – January 17, 2025
- (14) Texas A&M University – November 14, 2024
- (13) Truman University – November 8, 2024
- (12) 12th Peptoid Summit – August 10, 2024
- (11) 2nd International Conference on Metal-Binding Peptides – Keynote – July 11, 2024
- (10) Washington University in St. Louis – April 6, 2024
- (9) University of California, Irvine – February 12, 2024
- (8) Brandeis University – January 5, 2024
- (7) Molecular Foundry User Meeting, Lawrence Berkeley National Laboratory – August 11th, 2023
- (6) Loyola University – November 17, 2022
- (5) California State University, Chico – December 10, 2021
- (4) ACS Philadelphia – Symposium: Multimetallic Molecular & Extended Platforms for Energy Applications – March 22, 2020 (*Canceled due to COVID-19*)
- (3) University of North Carolina at Chapel Hill – December 19, 2018
- (2) University of Wisconsin at Milwaukee – December 17, 2018
- (1) University of Illinois at Chicago – November 27, 2018

Conference Presentations

- (11) American Peptide Symposium, San Diego, June 2025
- (10) Gordon Research Conference on Metals in Biology, January 2024
- (9) Gordon Research Conference on Peptide Materials, January 2023
- (8) ACS National Meeting, Chicago, Fall 2022
- (7) **Nguyen, A. I.**, Spencer, R. K., Anderson, C. L., Zuckermann, R. N.,
ACS National Meeting, San Diego, August 25-29, 2019
“A Bio-Inspired Approach to Ligand Design: Folding Single-Chain Peptoid to Chelate a
Multimetallic Cluster”
- (6) **Nguyen, A. I.**; Wijaya, A.; Spencer, R. K.; Zuckermann, R. N.
Molecular Foundry User Meeting, Berkeley, CA, August 15-16, 2018
“Metal-Coordinating Peptoids as Rationally-Designed Foldamers with Predominantly a Single
Conformer” (Poster)
- (5) **Nguyen, A. I.**; Spencer, R. K.; Zuckermann, R. N.
Gordon Research Seminar on Inorganic Chemistry (GRS), University of New England, Biddeford,
ME, June 16-17, 2018
“Carboxylate Chelating Ligands for Multimetallic Clusters” (Poster)
- (4) **Nguyen, A. I.**; Spencer, R. K.; Zuckermann, R. N.
Gordon Research Conference on Inorganic Chemistry (GRC), University of New England,
Biddeford, ME, June 17-22, 2018
“Carboxylate Chelating Ligands for Multimetallic Clusters” (Poster)
- (3) **Nguyen, A. I.**; Van Allsburg, K. M.; Terban, M. W.; Bajdich, M.; Oktawiec, J.; Ziegler, M. S.;
Dombrowski, J. P.; Lakshmi, K. V.; Drisdell, W. S.; Yano, J.; Billinge S. J. L.; Tilley, T. D.
253rd ACS National Meeting, San Francisco, CA, April 2-6, 2017.
“Tunable, site-isolated Co₄O₄ oxygen-evolution catalysts in porous frameworks” (Talk)
- (2) **Nguyen, A. I.**; Suess, D. L. M.; Darago, L. E.; Levine, D. S.; Britt, R. D.; Tilley, T. D.
251st ACS National Meeting, San Diego, CA, March 13-17, 2016.
“Synthesis and electronic description of tetra- and pentametallic, mixed-metal, mixed-valent
manganese-cobalt oxido cluster” (Poster)
- (1) **Nguyen, A. I.**; Hadt, R. G.; Solomon, E. I.; Tilley, T. D.
248th ACS National Meeting, San Francisco, CA, August 10-14, 2014.
“O₂ cleavage by a square-planar dianionic cobalt(II) complex: Putative Co-oxo formation” (Talk)

Service

- 2025 – Grant reviewer for the National Science Foundation
- 2024, 2025 - Grant reviewer for Department of Energy - Basic Energy Sciences
- Faculty Advisor for the Chemistry Graduate Student Association (CGSA) at UIC
- Presider for the “Bioinorganic Chemistry: Proteins & Enzymes & Model Systems” Symposium
2022 ACS National Meeting in Chicago
- Judge for Chicago Area Undergraduate Research Symposium (2022)
- Reviewer for *Journal of the American Chemical Society*, *Inorganic Chemistry*, *Chemistry
Communications*, *Biomacromolecules*, *Tetrahedron Letters*, *ACS Applied Materials and
Interfaces*
- Presider for the “Environmental and Energy-Related Inorganic Chemistry” Symposium at the
253rd ACS National Meeting in San Francisco
- On the committee for Student-Hosted Seminars at UC Berkeley
- Laboratory manager in the Zuckermann group at Lawrence Berkeley National Laboratory