

CURRICULUM VITAE

Marc R. Knecht, Ph.D.

College of Science
The University of Texas at El Paso
Chemistry and Computer Science Building
El Paso, TX 79968

Work: (915) 747-5536
mrknecht@utep.edu
www.linkedin.com/in/marc-knecht/

Formal Education

- 2004 – 2007 The University of Texas at Austin/Texas A&M University
 Postdoctoral Research Associate
 Advisor: Richard M. Crooks, Ph.D.
- 2002 – 2004 Vanderbilt University
 Ph.D. in Materials Chemistry
 Dissertation Title: “Biomimetic Templates for the Synthesis of
 Nanostructured and Nanocomposite Silica Materials”
 Advisor: David W. Wright, Ph.D.
- 1998 – 2001 Duquesne University
 B.S. in Chemistry – *Magna Cum Laude*

Professional Appointments

The University of Texas at El Paso

Dean – College of Science; 2026 – present

Professor – Department of Chemistry and Biochemistry; 2026 – present

University of Miami

Interim Co-Director – The Philip and Patricia Frost Institute for Chemistry and Molecular
Science (FICMS); 2025 – 2026

Chair – Department of Chemistry; 2021-2026

Professor – Department of Chemistry; 2019-2026

Associate Director – Dr. John T. Macdonald Foundation Biomedical Nanotechnology Institute
at the University of Miami (BioNIUM); 2018 – 2026

Associate Chair/Director of Undergraduate Studies – Department of Chemistry; 2014 – 2021

Associate Professor – Department of Chemistry; 2011 – 2019

Member – Dr. John T. Macdonald Foundation Biomedical Nanotechnology Institute at the University of Miami (BioNIUM): 2011 – 2026

University of Kentucky

Assistant Professor – Department of Chemistry: 2007 – 2011

Member – Bio-Inspired Nanotechnology Cluster: 2007 – 2011

Member – UK IGERT Program on Engineered Bioactive Interfaces & Devices: 2009 – 2011

Member – UK Cancer Nanotechnology Training Center: 2010 – 2011

Administrative and Leadership Accomplishments

Dean, College of Science, The University of Texas at El Paso (2026 – present)

I lead a dynamic College of Science with five different departments that comprise programs in the physical, biological, mathematical, and computational sciences. The College is comprised of 139 tenured/tenure faculty, 107 professors of instruction, and 124 staff members with an annual budget in excess of \$51M. We offer 13 undergraduate majors (with multiple different concentrations) that serve over 3100 undergraduate students and 19 graduate programs (12 M.S. and 7 Ph.D.) that serve 393 students. Annually, the College offers nearly 150,000 semester credit hours. As Dean, I provide strategic leadership for the College's academic, research, student success, and community engagement missions, working collaboratively with faculty, staff, students, alumni, and university leadership to advance institutional priorities.

-Leadership and Strategic Priorities

- Leading a comprehensive assessment of the College's organizational structure, operational processes, and strategic opportunities to position the College for long-term growth and impact.
- Engaging faculty, staff, students, alumni, and external partners to develop a shared vision for advancing excellence in education, research, and community engagement.
- Evaluating opportunities to strengthen interdisciplinary collaboration across departments, colleges, and external stakeholders.
- Supporting faculty success through initiatives focused on recruitment, retention, professional development, recognition, and research advancement.
- Advancing student success by developing and promoting innovative educational programs, experiential learning opportunities, and pathways that enhance student achievement and career readiness.
- Working with university leadership to identify opportunities for strategic investment in research infrastructure, academic programs, and workforce development.
- Representing the College of Science in institutional planning, external partnerships, and engagement with regional, state, national, and international stakeholders.

Interim Co-Director, The Philip and Patricia Frost Institute for Chemistry and Molecular Science (FICMS), University of Miami (2025 – 2026)

FICMS was established in 2022 through a transformative gift from the Frost family to elevate chemistry and molecular science at the University of Miami. The Institute houses seven faculty members (five tenured/tenure-track and two research-track), two research centers, and operates with an annual budget of \$3.3M. As Interim Co-Director, I advanced the Institute's strategic vision, operations, and interdisciplinary research mission.

- Developed and co-authored the Institute's five-year strategic plan, approved by University senior leadership. The plan prioritizes collaborative, interdisciplinary research in artificial intelligence (AI) in chemistry and quantum science, with applications in sustainability, quantum, human health, and next-generation technologies.
- Spearheaded the creation and approval of memoranda of understanding (MOUs) between FICMS, the University, and the College of Arts & Sciences to define faculty integration parameters and research space allocations. This initiative led to the appointment of four faculty members and launched new external recruitment efforts.
- Executed core facilities for electron microscopy in both biological and materials science disciplines, designing sustainable budget models and negotiating operational agreements with University leadership. Secured staffing and management structures to ensure continuous operation.
- Collaborated with University construction and facilities management teams to complete the operational launch the upper half of the FICMS building. Secured additional funding to meet the advanced technical requirements of research instrumentation and faculty laboratories.
- Created and implemented operational procedures for Institute staff and affiliated departments, defining stakeholder roles, budget processes, and efficient administrative workflows.

Chair, Department of Chemistry, University of Miami (2021 – 2026)

The Department of Chemistry comprises 25 faculty, 40-50 graduate students, ~60 undergraduate majors, with an annual budget of approximately \$5.4M. As Chair, I led the department through a period of significant growth in research directions, faculty development, infrastructure, and student engagement.

-Resource Development and Strategic Investment

- Secured more than \$13 million in institutional support to enhance research and teaching operations:
 - \$5.75M for state-of-the-art research instrumentation (*e.g.*, 800 MHz NMR, LC-MS, X-ray diffractometer, GC-MS/MS).
 - \$3.05M for new faculty start-up packages.
 - \$4.3M for critical facility renovations and new departmental centers.
- Led philanthropic efforts that generated nearly \$100,000 in new funds for student-focused initiatives.
- Collaborated with architects and project managers on the design and development of a new Chemistry-focused STEM research building for FICMS.

-Faculty and Academic Leadership

- Successfully negotiated and recruited seven new faculty members (three tenure-track and four non-tenure-track).
- Managed complex personnel cases, including tenure and promotion reviews and retirements.
- Established equitable guidelines for faculty evaluation, salary determination, and resource allocation.
- Introduced faculty mentorship workshops focused on grant writing, professionalism, and tenure navigation.

Research and Academic Advancement

- Expanded departmental research into new areas, including biological and quantum sciences, leading to new funding from NIH and the Department of Defense.

- Spearheaded the creation of a new interdisciplinary Materials Science major, in collaboration with Physics, Biochemistry & Molecular Biology, and the College of Engineering.

-Student and Community Engagement

- Enhanced graduate student recruitment and representation, resulting in larger and stronger cohorts.
- Developed digital outreach initiatives (website redesign and social media strategy) to elevate departmental visibility.
- Hosted workshops on student well-being, belonging, and mental health awareness for faculty.

-Administrative Modernization

- Restructured staff roles and procedures to improve operational efficiency.
- Developed and implemented complex responsibility-centered management (RCM)-based and zero-based budgets.
- Formed an ad hoc executive committee to advise on departmental governance and sensitive issues.
- Participated in the Atlantic Coast Conference Academic Leadership Network as a University of Miami nominee.

Associate Chair, Department of Chemistry, University of Miami (2014 – 2021)

- Led major curricular reform, consolidating General and Organic Chemistry into a streamlined three-semester sequence. This led to a modernization of the Chemistry major to align with emerging scientific topics and student interests.
- Introduced active learning pedagogy and spearheaded the development of online and hybrid courses in response to the COVID-19 pandemic.
- Managed academic advising, course scheduling, and interdisciplinary coordination across multiple schools and colleges.
- Co-developed authentic research laboratories that replaced traditional first-year Chemistry and Biology labs. This included exporting these labs to Miami Dade College, our local community college.

Research Interests

- Biomineralization, biomimetics, and bio-inspired nanotechnology
- Nanomaterial synthesis and application
- Structure function relationships of nanomaterials
- Catalysis, sensors, and energy applications of nanomaterials
- Template directed synthesis of materials
- Environmental remediation and environmental applications of nanomaterials
- Green chemistry and sustainability

Professional Activities

Memberships: American Chemical Society
 Materials Research Society

Reviewer: Journals

Nature
Angewandte Chemie, International Edition
Journal of the American Chemical Society
Nature Communications
Chemical Reviews
Nano Letters
ACS Nano
ACS Catalysis
Chemistry of Materials
Langmuir
ACS Applied Materials and Interfaces
ACS Applied Nano Materials
ACS Applied Energy Materials
ACS Sustainable Chemistry and Engineering
Journal of Physical Chemistry
Journal of Physical Chemistry Letters
Analytical Chemistry
Macromolecules
Advanced Materials
Advanced Functional Materials
Advanced Healthcare Materials
ChemCatChem
ChemSusChem
Chemical Communications
Nanoscale
Nanoscale Horizons
Nanoscale Advances
RSC Sustainability
Journal of Materials Chemistry
Journal of Materials Chemistry A
Soft Matter
RSC Advances
Energy and Environmental Sciences
Analytical and Bioanalytical Chemistry
Physical Chemistry Chemical Physics
CrystEngComm
Dalton Transactions
New Journal of Chemistry
Electrochemistry Communications
Biochimica et Biophysica Acta

Journal of Colloid and Interface Science
Journal of Materials Research
Journal of Solid-State Chemistry
Colloids and Surfaces B: Biointerfaces
Journal of Crystal Growth
Analytica Chimica Acta
Molecules

Grant Proposals

National Science Foundation
Air Force Office of Scientific Research
Office of Naval Research
Army Research Office
U.S. Department of Energy – Office of Basic Energy Sciences
American Chemical Society – Petroleum Research Fund (PRF)
U.S.-Israel Binational Science Foundation
Hungarian Scientific Research Fund (OTKA)

Awards and Honors

- Cooper Fellow, College of Arts & Sciences, University of Miami, 2024.
- Summer research fellow sponsored by the Vanderbilt Institute for Nanoscience and Engineering, Vanderbilt University, Nashville, TN, summer 2003.
- Summer research fellow sponsored by the Vanderbilt Institute for Nanoscience and Engineering, Vanderbilt University, Nashville, TN, summer 2002.
- NSF REU summer research fellow, Duquesne University, Pittsburgh, PA, summer 2000.
- Presidential Scholarship Award, Duquesne University, Pittsburgh, PA, 1998-2001.
- Chemistry Science Award, Somerset Sr. High School, Somerset, PA, 1998.

Editorial Activities

1. Co-Editor with Tiffany R. Walsh, *Bio-Inspired Nanotechnology: From Surface Analysis to Applications*, Springer, New York, 2014.
2. Co-Guest Editor, *Analytical and Bioanalytical Chemistry*, special issue on Young Investigators, 2009.

Publications

h-index = 47 (calculated using GoogleScholar on October 10, 2025)

Journal Publications

1. Thomas, S.M.; Zhang, C.; Zhang, H.; Wang, Y.; Farajollahi, S.; Dennis, P.M.; Wang, K.; Knecht, M.R.* Walsh, T.R. Divergent Outcomes in Resilin-Like Peptide Cross-Linking: Unexpected Photocatalytic Damage vs. Enzymatic Success, submitted.
2. Ramamurthy, S.; Meerbott, K.B.; Travaglini, L.; Dobhal, G.S.; Sawicki, A.; Knecht, M.R.* Walsh, T.R.; Glover, D.J. Orientational Control of Dynamically Versatile Proteins to Modulate Surface Binding Effects, *Adv. Funct. Mater.* **2026**, in press.
3. Meerbott, K.B.; Firouzi, R.; Slocik, J.M.; Phillips, D.M.; Walsh, T.R.; Knecht, M.R.* Exploiting Metamorphic Proteins to Modulate the Catalytic Functionality of Bimetallic Nanoparticles, submitted.
4. Matthew, J.; Slocik, J.M.; Phillips, D.M.; Knecht, M.R.* Bio-Inspired Nanomaterials to Elucidate Compositional Effects in Nanoparticle Catalysts, in revision.
5. Mohapatra, S.; Green, R.; Wang, J.; Li, L.; Sun, Y.; Knecht, M.R.; Dikici, E.; Deo, S.; Daunert, S.; Mohapatra, S. Twenty Years of Nanotechnology Revolution in Healthcare, submitted.
6. Jose, J.; Slocik, J.M.; Phillips, D.M.; Knecht, M.R.* Walsh, T.R. Organization of Resilin-Like Peptides in Three Dimensions using Au Nanoparticles, *Biomacromol.* **2025**, *26*, 6121-6128.
7. Xiang, S. Knecht, M.R.; Frenkel, A.I. Machine Learning-Assisted X-ray Absorption Analysis of Bimetallic Catalysts, *Mater. Horiz.* **2025**, *12*, 4487-4495. (Featured on the inside front cover of the July 7, 2025 issue.)
8. Thomas, S.M.; Walsh, T.R.; Knecht, M.R.* Interrogating the Surface Interactions of Resilient Peptide on *h*-BN and Graphene, *Langmuir* **2025**, *41*, 8703-8710.
9. Xie, M.; Shimogawa, R.; Foucher, A.C.; Stach, E.A.; Frenkel, A.I.; Knecht, M.R.* X-ray Absorption Fine Structure Spectroscopic Interrogation of Catalytic Reaction Kinetics from the Substrate Perspective, *J. Phys. Chem. C.* **2025**, *129*, 6757-6761.
10. Meerbott, K.B.; Monhemi, H.; Travaglini, L.; Sawicki, A.; Ramamurthy, S.; Glover, D.J.; Walsh, T.R.; Knecht, M.R.* Metamorphic Proteins to Achieve Selective Material Surface Binding, *Small* **2025**, *21*, 2408141.

11. Thomas, S.M.; Zhang, H.; Wang, K.; Knecht, M.R.*; Walsh, T.R. Exploiting Materials Binding Peptides for the Organization of Resilient Biomolecular Constructs, *Biomacromol.* **2024**, *25*, 7216-7224.
12. Pham, L.N.; Perdomo, Y.; Slocik, J.M.; Rao, R.; Walsh, T.R.; Knecht, M.R.* Sustainable, Aqueous Exfoliation of MoS₂ via Bio-Inspired Avenues, *J. Mater. Chem. B* **2024**, *12*, 8662-8671.
13. Xie, M.; Slocik, J.M.; Dennis, P.B.; Knecht, M.R.* Substrate Effects on Remote Optical Control of Pt Nanoparticle Driven Olefin Hydrogenation, *ACS Appl. Nano Mater.* **2024**, *7*, 13251-13259.
14. Meerbott, K.B.; Knecht, M.R.* Peptide-Catalyzed Ester Hydrolysis: Identification of Key Active Sites and Solution Conditions, *New J. Chem.* **2024**, *48*, 7997-8003.
15. Jin, R.; Brljak, N.; Slocik, J.M.; Rao, R.; Knecht, M.R.*; Walsh, T.R. Graphene Exfoliation Using Multidomain Peptides, *J. Mater. Chem. B* **2024**, *12*, 4824-4832. (Featured on the front cover of the May 28, 2024 issue.)
16. Xie, M.; Shimogawa, R.; Liu, Y.; Zhang, L.; Foucher, A.C.; Routh, P.K.; Stach, E.A.; Frenkel, A.I.; Knecht, M.R.* Biomimetic Control Over Bimetallic Nanoparticle Structure and Activity via Peptide Capping Ligand Sequence, *ACS Nano* **2024**, *18*, 3286-3294.
17. Pilling, R.; Coles, S.R.; Knecht, M.R.; Patwardhan, S.V. Realising Nanomaterial Potential Through Multi-Criteria Discovery, Design, and Manufacturing, *Commun. Eng.* **2023**, *2*, 78.
18. Zollo, V.J.; ElMetwally, A.E.; Bachas, L.G.; Knecht, M.R.* Metal Nanoparticle Co-Catalyst Leads to Significant Deviations in Environmental Photocatalytic Mechanisms, *ACS EST Water* **2023**, *3*, 3274-3281.
19. Perdomo, Y.; Slocik, J.M.; Phillips, D.M.; Knecht, M.R.* Peptide/Nanoparticle Biointerfaces for Multistep Tandem Catalysis, *J. Am. Chem. Soc.* **2023**, *145*, 16650-16657.
20. ElMetwally, A.E.; Sayed, M.S.; Shim, J.-J.; Knecht, M.R.; Bachas, L.G. Plasmon-Enhanced Photocatalytic Oxidation of Benzyl Alcohol to Benzaldehyde Using BiVO₄/BiOBr/Au Nanosheets, *ACS Appl. Nano Mater.* **2023**, *6*, 5909-5917.

21. ElMetwally, A.E.; Sayed, M.S.; Zhou, Y.; Domena, J.; Shim, J.-J. Leblanc, R.M.; Knecht, M.R.; Bachas, L.G. Photocatalytic Partial Oxidation of 5-Hydroxymethyl Furfural to 2,5-Diformylfuran using Exfoliated $g\text{-C}_3\text{N}_4/\text{Pd}$, *J. Phys. Chem. C* **2022**, *126*, 15671-15684.
22. Jin, R.; Brljak, N.; Sangrigoli, R.; Walsh, T.R.; Knecht, M.R.* Achieving Regioselective Materials Binding using Multidomain Peptides, *Nanoscale* **2022**, *14*, 14113-14121.
23. Miller, E.B.; Knecht, M.R.*; Bachas, L.G. Photocatalytic Approaches for Sustainable Olefin Transfer Hydrogenation and Semi-Hydrogenation of Alkynes Using Natural Sunlight, *ACS Appl. Energy Mater.* **2022**, *5*, 11052-11057.
24. Perdomo, Y.; Jin, R.; Knecht, M.R.*; Walsh, T.R. Manipulation of Peptide-Fatty Acid Bioconjugates on Graphene: Effects of Fatty Acid Chain Length and Attachment Point, *J. Mater. Chem. B* **2022**, *10*, 6018-6025.
25. Xie, M.; Knecht, M.R.* Effect of a Mixed Peptide Ligand Layer on Au Nanoparticles for Optical Control of Catalysis, *ACS Appl. Nano Mater.* **2022**, *5*, 9379-9388.
26. Liu, Y.; Xie, M.; Marcella, N.; Foucher, A.C.; Stach, E.A.; Knecht, M.R.*; Frenkel, A.I. Z-Contrast Enhancement in Heterogeneous AuPt Nanostructures by Correlative X-ray Absorption Spectroscopy and Electron Microscopy, *ACS Appl. Nano Mater.* **2022**, *5*, 8775-8782.
27. Miller, E.B.; Zahran, E.M.; Knecht, M.R.; Bachas, L.G. Mechanistic Analysis Identifying Reaction Pathways for Rapid Reductive Photodebromination of Polybrominated Diphenylethers Using $\text{BiVO}_4/\text{BiOBr}/\text{Pd}$ Heterojunction Nanocomposite Photocatalyst, *Environ. Sci.: Nano* **2022**, *9*, 1106-1115.
28. ElMetwally, A.E.; Sayed, M.S.; Zeynaloo, E.; Zahran, E.M.; Shim, J.-J.; Knecht, M.R.; Bachas, L.G. Hierarchical Core-Shell ACOF-1@BiOBr as an Efficient Photocatalyst for Degradation of Emerging Organic Contaminants, *J. Phys. Chem. C* **2022**, *126*, 2503-2516.
29. Hughes, Z.E.; Nguyen, M.A.; Wang, J.; Liu, Y.; Swihart, M.T.; Poloczek, M.; Frazier, P.I.; Knecht, M.R.*; Walsh, T.R. Tuning Materials-Binding Peptide Sequences Towards Gold- Silver-Binding Selectivity with Bayesian Optimization, *ACS Nano* **2021**, *15*, 18260-18269.
30. ElMetwally, A.E.; Goodzari, F.; Meier, K.K.; Shukla, D.; Zahran, E.M.; Cohn, J.L.; Kegnes, S. Knecht, M.R.; Bachas, L.G. $\text{Cu}_2\text{S}@ \text{Bi}_2\text{S}_3$ Double-Shelled Cages as a

Nanocatalyst with Substantial Activity in Peroxymonosulfate Activation for Atrazine Degradation, *ACS Appl. Nano Mater.* **2021**, *4*, 12222-12234.

31. Olagunju, M.O.; Zahran, E.M.; Zeynaloo, E.; Shukla, D.; Cohn, J.L.; Surnar, B.; Dhar, S.; Bachas, L.G.; Knecht, M.R.* Design of Pd-decorated SrTiO₃/BiOBr Heterojunction Materials for Enhanced Visible Light-based Photocatalytic Reactivity, *Langmuir* **2021**, *37*, 11986-11995.
32. Brljak, N.; Knecht, M.R.*; Walsh, T.R. Controlling the Orientation and Viscoelasticity of Materials Binding Peptides on Hexagonal Boron Nitride using Fatty Acids, *J. Phys. Chem. B* **2021**, *125*, 10621-10628.
33. Olagunju, M.O.; Liu, Y.; Frenkel, A.I.; Knecht, M.R.* Atomically-Resolved Characterization of Optically-Driven Ligand Reconfiguration on Nanoparticle Catalyst Surfaces, *ACS Appl. Mater. Interfaces* **2021**, *12*, 44302-44311.
34. Brljak, N.; Jin, R.; Walsh, T.R.; Knecht, M.R.* Selective Manipulation of Peptide Orientation on Hexagonal Boron Nitride Nanosheets, *Nanoscale* **2021**, *13*, 5670-5678.
35. Lawrence, R.L.; Olagunju, M.O.; Liu, Y.; Mahalingam, K.; Slocik, J.M.; Naik, R.R.; Frenkel, A.I.; Knecht, M.R.* Remote Controlled Optical Manipulation of Bimetallic Nanoparticle Catalysts using Peptides, *Catal. Sci. Technol.* **2021**, *11*, 2386-2395. (Featured on the inside front cover of the April 2021 issue.)
36. ElMetwally, A.E.; Zeynaloo, E.; Shukla, D.; Cohn, J.L.; Knecht, M.R.; Bachas, L.G. Cu₂O Cubes Decorated with Azine-Based Covalent Organic Framework Spheres and Pd Nanoparticles as Tandem Photocatalysts for Light-Driven Degradation of Chlorinated Biphenyls, *ACS Appl. Nano Mater.* **2021**, *4*, 2795-2805.
37. Olagunju, M.O.; Zahran, E.M.; Reed, J.M.; Shukla, D.; Cohn, J.L.; Surnar, B.; Dhar, S.; Bachas, L.G.; Knecht, M.R.* Halide Effects in BiVO₄/BiOX/Pd for Enhanced Photocatalytic Degradation of Organic Pollutants, *ACS Appl. Nano Mater.* **2021**, *4*, 3262-3272.
38. Parab, A.D.; Dureja, R.; Rao, R.; Slocik, J.M.; Naik, R.R.; Walsh, T.R.; Knecht, M.R.* Identification of Parameters Controlling Peptide-Driven Graphene Exfoliation in Aqueous Media, *Langmuir* **2021**, *37*, 1152-1163.
39. Parab, A.D.; Budi, A.; Brljak, N.; Knecht, M.R.*; Walsh, T.R. Modulation of Peptide-Graphene Interfaces via Fatty Acid Conjugation, *Adv. Mater. Interfaces* **2021**, *8*, 2001659.

40. Brljak, N.; Parab, A.D.; Rao, R.; Slocik, J.M.; Naik, R.R.; Knecht, M.R.*; Walsh, T.R. Material Composition and Peptide Sequence Affects Biomolecule Affinity to and Selectivity for *h*-Boron Nitride and Graphene, *Chem. Commun.* **2020**, *56*, 8834-8837.
41. Olagunju, M.O.; Poole, X.; Blackwelder, P.; Thomas, M.P.; Guiton, B.S.; Shukla, D.; Cohn, J.L.; Zahran, E.M.; Bachas, L.G.; Knecht, M.R.* Size-Controlled SrTiO₃ Nanoparticles Photodecorated with Pd Co-catalysts for Photocatalytic Organic Dye Degradation, *ACS Appl. Nano Mater.* **2020**, *3*, 4904-4912.
42. Parab, A.D.; Budi, A.; Slocik, J.M.; Rao, R.; Naik, R.R.; Walsh, T.R.; Knecht, M.R.* Molecular-Level Insights on Biologically-Driven Graphite Exfoliation for the Generation of Graphene in Aqueous Media, *J. Phys. Chem. C*, **2020**, *124*, 2219-2228.
43. Nguyen, M.A. Bobé, C.; Bode, A.; Portela, M.E.; Munro, C.J.; Knecht, M.R.*; Collins, K.C. Identification of Toxicity Effects of Cu₂O Nanoparticles on *C. elegans* as a Function of Particle Morphology and Size, *Environ. Sci.: Nano*, **2020**, *7*, 645-655.
44. Walsh, T.R.; Knecht, M.R.* Biomolecular Materials Recognition in Two Dimensions: Peptide Binding to Graphene, *h*-BN, and MoS₂ Nanosheets as Unique Bioconjugates, *Bioconj. Chem.* **2019**, *30*, 2727-2750.
45. Munro, C.J.; Bell, E.C.; Cohn, J.; Zahran, E.M.; Bachas, L.G. Knecht, M.R.* Amino Acids for the Sustainable Production of Cu₂O Materials: Effects on Morphology and Photocatalytic Activity, *ACS Sustainable Chem. Eng.* **2019**, *7*, 17055-17064.
46. Bell, E.C.; Munro, C.J.; Shukla, D.; Cohn, J.L. Knecht, M.R.* Biomimetic Strategies to Produce Catalytically Reactive CuS Nanodisks, *Nanoscale Adv.* **2019**, *1*, 2857-2865. (Featured on the cover of the August 2019 issue.)
47. Parab, A.; Slocik, J.M.; Naik, R.R.; Knecht, M.R.* Peptide-Driven Fabrication of Catalytically Reactive Rhodium Nanoplates, *ACS Appl. Nano Mater.* **2018**, *1*, 7149-7158.
48. Lawrence, R.L.; Cendan, V.J.; Scola, B.; Liu, Y.; Lim, C.-K.; Prasad, P.N.; Swihart, M.T.; Knecht, M.R.* Optical Control of Biomimetic Nanoparticle Catalysts Based upon the Metal Component, *J. Phys. Chem. C* **2018**, *122*, 28055-28064.
49. Munro, C.J.; Knecht, M.R.* Engendering Materials Directing Peptides with Non-Native Functionalities through Synthetic Sequence Modifications, *J. Phys. Chem. C* **2018**, *122*, 26686-26697.

50. Lawrence, R.L.; Hughes, Z.E.; Cendan, V.J.; Liu, Y.; Lim, C.-K.; Prasad, P.N.; Swihart, M.T.; Walsh, T.R.; Knecht, M.R.* Optical Control of Nanoparticle Catalysis Influenced by Photoswitch Positioning in Hybrid Peptide Capping Ligands, *ACS Appl. Mater. Interfaces* **2018**, *10*, 33640-33651.
51. Nguyen, M.A. Hughes, Z.E.; Liu, Y.; Swihart, M.T.; Knecht, M.R.*; Walsh, T.R. Peptide-Mediated Growth and Dispersion of Au Nanoparticles in Water via Sequence Engineering, *J. Phys. Chem. C* **2018**, *122*, 11532-11542.
52. Merrill, N.A. Yan, F., Jin, H.; Chen, C.-L.; Knecht, M.R.* Tunable Assembly of Biomimetic Peptoids as Templates to Control Nanostructure Catalytic Activity, *Nanoscale* **2018**, *10*, 12445-12452.
53. Munro, C.J.; Knecht, M.R.* Applications and Advancements of Peptides in the Design of Metallic Nanomaterials, *Curr. Opin. Green Sustainable Chem.* **2018**, *12*, 63-68.
54. Munro, C.J.; Knecht, M.R.* Solution Effects on Peptide-Mediated Reduction and Stabilization of Au Nanoparticles, *Langmuir* **2017**, *33*, 13757-13765.
55. Walsh, T.R.; Knecht, M.R.* Biointerface Structural Effects on the Properties and Applications of Bioinspired Nanomaterials, *Chem. Rev.* **2017** *117*, 12641-12704. (This work was also listed as a top 20 most read article in *Chem. Rev.* for September 2017.)
56. Ramezani-Dakhel, H.; Bedford, N.M.; Woehl, T.J.; Knecht, M.R.; Naik, R.R.; Heinz, H. Nature of Peptide Wrapping onto Metal Nanoparticle Catalysts and Driving Forces for Size Control, *Nanoscale* **2017**, *9*, 8401-8409.
57. Dharmawardhana, C.C.; Kanhaiya, K.; Lin, T.Z. Knecht, M.R.; Miao, J.; Heinz, H. Reliable Computational Design of Biological and Inorganic Materials to the Large Nanometer Scale Using the Interface Force Field, *Mol. Simul.* **2017**, *43*, 1394-1405.
58. Miller, E.B.; Zahran, E.M.; Knecht, M.R.; Bachas, L.G. Metal Oxide Semiconductor Nanomaterial for Reductive Debromination: Visible Light Degradation of Polybrominated Diphenyl Ethers by Cu₂O@Pd Nanostructures, *Appl. Catal., B* **2017**, *213*, 147-154.
59. Merrill, N.A.; Nitka, T.T.; McKee, E.M.; Merino, K.C.; Drummy, L.F.; Lee, S.; Reinhart, B.; Ren, Y.; Pylypenko, S.; Frenkel, A.I.; Bedford, N.M.; Knecht, M.R.* Effects of Metal Composition and Ratio on the Morphology of Peptide-Templated Multimetallic Nanomaterials, *ACS Appl. Mater. Interfaces* **2017**, *9*, 8030-8040.

60. Hughes, Z.E.; Nguyen, M.A.; Li, Y.; Swihart, M.T.; Walsh, T.R.; Knecht, M.R.* Elucidating the Influence of Materials-Binding Peptide Sequence on Au Surface Interactions and Colloidal Stability of Au Nanoparticles, *Nanoscale* **2017**, *9*, 421-432.
61. Pálmai, M.; Zahran, E.M.; Angaramo, S. Bálint, Z.; Knecht, M.R.; Bachas, L.G. Boosting the Photocatalytic Activity of *m*-BiVO₄ with Pd Nanodomains and BiOBr Nanosheets Dual Heterojunction, *J. Mater. Chem. A*, **2017**, *5*, 529-534.
62. Lawrence, R.L.; Scola, B.; Li, Y.; Lim, C.-K.; Prasad, P.N.; Swihart, M.T.; Knecht, M.R.* Remote Optically-Controlled Modulation of Catalytic Properties of Nanoparticles through Reconfiguration of the Inorganic/Organic Interface, *ACS Nano* **2016**, *10*, 9470-9477.
63. Munro, C.J.; Hughes, Z.E.; Walsh, T.R.; Knecht, M.R.* Peptide Sequence Effects Control the Single Pot Reduction, Nucleation, and Growth of Au Nanoparticles, *J. Phys. Chem. C* **2016**, *120*, 18917-18924.
64. Slocik, J.M.; Kuang, Z.; Knecht, M.R.; Naik, R.R. Optical Modulation of Peptide-Nanoparticle Interactions, *ChemPhysChem* **2016**, *17*, 3252-3259.
65. Briggs, B.D.; Palafox-Hernandez, J.P.; Li, Y.; Lim, C.-K.; Woehl, T.J.; Bedford, N.M.; Seifert, S.; Swihart, M.T.; Prasad, P.N.; Walsh, T.R.; Knecht, M.R.* Toward a Modular Multi-material Nanoparticle Synthesis and Assembly Strategy via Bionano-combinatorics: Bifunctional Peptides for Linking Au and Ag Nanomaterials, *Phys. Chem. Chem. Phys.* **2016**, *18*, 30845-30856.
66. Zhu, Y.; Munro, C.; Olszta, M.; Edwards, D.; Braunschweig, A.B.; Knecht, M.R.; Browning, N. Dose-Rate Controlled Energy Dispersive X-ray Spectroscopic Mapping of Biohybrid Nanoparticles, *Semicond. Sci. Technol.* **2016**, *31*, 084002.
67. Seo, S.; Joo, S.H.; Knecht, M.R.; Lawrence, R.L.; Su, C. Influence of Siloxane on the Transport of ZnO Nanoparticles from Different Release Pathways in Saturated Sand, *RSC Adv.* **2016**, *6*, 100494-100503.
68. Nguyen, M.A.; Zahran, E.M.; Wilbon, A.S.; Besmer, A.V.; Cendan, V.J.; Ranson, W.A.; Lawrence, R.L.; Cohn, J.L.; Bachas, L.G.; Knecht, M.R.* Converting Light Energy to Chemical Energy: A New Catalytic Approach for Sustainable Environmental Remediation, *ACS Omega* **2016**, *1*, 41-51.
69. Lim, C.-K.; Li, X.; Li, Y.; Drew, K.L.M.; Palafox-Hernandez, J.P.; Tang, Z.; Baev, A.; Kuzmin, A.N.; Knecht, M.R.; Walsh, T.R.; Swihart, T.R.; Ågren, H.; Prasad, P.N.

Plasmon-Enhanced Two-Photon-Induced Isomerization for Highly-Localized Light-Based Actuation of Inorganic/Organic Interfaces, *Nanoscale* **2016**, *8*, 4194-4202.

70. Palafox-Hernandez, J.P.; Lim, C.-K.; Tang, Z.; Drew, K.; Li, Y.; Swihart, M.T.; Prasad, P.N.; Knecht, M.R.* Walsh, T.R. Optical Actuation of Inorganic/Organic Interfaces: Comparing Peptide-Azobenzene Ligand Reconfiguration on Gold and Silver Nanoparticles, *ACS Appl. Mater. Interfaces* **2016**, *8*, 1050-1060.
71. Bedford, N.M.; Hughes, Z.E.; Tang, Z.; Briggs, B.D.; Ren, Y.; Petkov, V.G.; Naik, R.R.; Knecht, M.R.* Walsh, T.R. Sequence-Dependent Structure/Function Relationships of Catalytic Peptide-Enabled Au Nanoparticles Generated Under Ambient Synthetic Conditions, *J. Am. Chem. Soc.* **2016**, *138*, 540-548.
72. Merrill, N.A.; McKee, E.M.; Merino, K.C.; Drummy, L.F.; Lee, S.; Reinhart, B.; Ren, Y.; Frenkel, A.I.; Naik, R.R.; Bedford, N.M.; Knecht, M.R.* Identifying the Atomic-Level Effects of Metal Composition on the Structure and Catalytic Activity of Peptide-Templated Materials, *ACS Nano* **2015**, *9*, 11968-11979.
73. Briggs, B.D.; Bedford, N.M.; Seifert, S.; Koerner, H.; Ramezani-Dakhel, H.; Heinz, H.; Naik, R.R.; Frenkel, A.I.; Knecht, M.R.* Atomic-Scale Identification of Pd Leaching in Nanoparticle Catalyzed C-C Coupling: Effects of Particle Surface Disorder, *Chem. Sci.* **2015**, *6*, 6413-6419.
74. Tang, Z.; Lim, C.-K.; Palafox-Hernandez, J.P.; Drew, K.L.M.; Li, Y.; Swihart, M.T.; Prasad, P.N.; Walsh, T.R.; Knecht, M.R.* Light-Actuated Nanoparticle Biointerfaces: Toward Stimuli Responsive Nanoassemblies, *Nanoscale* **2015**, *7*, 13638-13645.
75. Nguyen, M.A.; Bedford, N.M.; Ren, Y.; Zahran, E.M.; Goodin, R.C.; Chagani, F.F.; Bachas, L.G.; Knecht, M.R.* Direct Synthetic Control over the Size, Composition, and Photocatalytic Activity of Octahedral Copper Oxide Materials: Correlation Between Surface Structure and Catalytic Functionality, *ACS Appl. Mater. Interfaces* **2015**, *7*, 13238-13250.
76. Bedford, N.M.; Ramezani-Dakhel, H.; Slocik, J.M.; Briggs, B.D.; Ren, Y.; Frenkel, A.I.; Petkov, V.; Heinz, H.; Naik, R.R.; Knecht, M.R.* Elucidation of Peptide-Directed Palladium Surface Structure for Biologically Tunable Nanocatalysts, *ACS Nano* **2015**, *9*, 5082-5092. (Featured on the cover of the May 2015 issue.)
77. Briggs, B.D.; Li, Y.; Swihart, M.T.; Knecht, M.R.* Reductant Effects on the Morphology and Catalytic Activity of Peptide-capped Au Nanoparticles, *ACS Appl. Mater. Interfaces* **2015**, *7*, 8843-8851.

78. Du, N.; Knecht, M.R.; Swihart, M.T.; Tang, Z.; Walsh, T.R.; Zhang, A. Identifying Affinity Classes of Inorganic Materials Binding Sequences via a Graph-based Model, *IEEE/ACM Trans. Comput. Biol. Bioinformatics* **2015**, *12*, 193-204.
79. Palafox-Hernandez, J.P.; Tang, Z.; Hughes, Z.E.; Li, Y.; Swihart, M.T.; Prasad, P.N.; Walsh, T.R.; Knecht, M.R.* Comparative Study of Materials-Binding Peptide Interactions with Gold and Silver Surfaces and Nanostructures: A Thermodynamic Basis for Biological Selectivity of Inorganic Materials, *Chem. Mater.* **2014**, *26*, 4960-4969.
80. Briggs, B.D.; Pekarek, R.T.; Knecht, M.R.* Examination of Transmetalation Pathways and Effects in Aqueous Suzuki Coupling using Biomimetic Pd Nanoparticles, *J. Phys. Chem. C* **2014**, *118*, 18543-18553.
81. Bedford, N.M.; Bhandari, R.; Slocik, J.M.; Seifert, S.; Naik, R.R.; Knecht, M.R.* Peptide-Modified Dendrimers as Templates for the Production of Highly Reactive Catalytic Nanomaterials, *Chem. Mater.* **2014**, *26*, 4082-4091.
82. Wright, L.B.; Merrill, N.A.; Knecht, M.R. Walsh, T.R. Structure of Arginine Monolayers at the Aqueous Gold Interface: Implications for Nanoparticle Assembly, *ACS Appl. Mater. Interfaces* **2014**, *6*, 10524-10533.
83. Li, Y.; Tang, Z.; Prasad, P.N.; Knecht, M.R.*; Swihart, M.T. Peptide-mediated Synthesis of Gold Nanoparticles: Effects of Peptide Sequence and Nature of Binding on Physicochemical Properties, *Nanoscale* **2014**, *6*, 3165-3172.
84. Pacardo, D.B.; Ardman, E.A.; Knecht, M.R.* Effects of Substrate Molecular Structure on the Catalytic Activity of Peptide-Templated Pd Nanomaterials, *J. Phys. Chem. C* **2014**, *118*, 2518-2527.
85. Zahran, E.M.; Bedford, N.M.; Nguyen, M.A., Chang, Y.-J.; Guiton, B.S.; Naik, R.R.; Bachas, L.G.; Knecht, M.R.* Light-Activated Tandem Catalysis Driven By Multicomponent Nanomaterials, *J. Am. Chem. Soc.* **2014**, *136*, 32-35.
86. Tang, Z.; Palafox-Hernandez, J.P.; Law, W.-C.; Swihart, M.T.; Prasad, P.N.; Knecht, M.R.*; Walsh, T.R. Biomolecular Recognitions Principles for Bionanocombinatorics: An Integrated Approach to Elucidated Enthalpic and Entropic Factors, *ACS Nano* **2013**, *7*, 9632-9646.

87. Bhandari, R.; Pacardo, D.B.; Bedford, N.M.; Naik, R.R.; Knecht, M.R.* Structural Control and Catalytic Reactivity of Peptide-Templated Pd and Pt Nanomaterials for Olefin Hydrogenation, *J. Phys. Chem. C* **2013**, *117*, 18053-18062.
88. Merrill, N.A.; Sethi, M.S.; Knecht, M.R.* Structural Effects of the Surface Passivant on the Stability of Au Nanorods, *ACS Appl. Mater. Interfaces*. **2013**, *5*, 7906-7914.
89. Coppage, R.; Slocik, J.M.; Ramezani-Dakhel, H.; Bedford, N.M.; Heinz, H.; Naik, R.R.; Knecht, M.R.* Exploiting Localized Surface Binding Effects to Enhance the Catalytic Reactivity of Peptide-Capped Nanoparticles, *J. Am. Chem. Soc.* **2013**, *135*, 11048-11054.
90. Ramenzani-Dakhel, H.; Mirau, P.A.; Naik, R.R.; Knecht, M.R.; Heinz, H. Stability, Surface Features, and Atom Leaching of Palladium Nanoparticles: Toward Prediction of Catalytic Functionality, *Phys. Chem. Chem. Phys.* **2013**, *15*, 5488-5492.
91. Pacardo, D.B.; Knecht, M.R.* Exploring the Mechanism of Stille C-C Coupling via Peptide-capped Pd Nanoparticles Results in Low Temperature Reagent Selectivity, *Catal. Sci. Technol.* **2013**, *3*, 745-753.
92. Stolarczyk, E.I.; Reiling, C.J.; Pickin, K.A.; Coppage, R.; Knecht, M.R.; Paumi, C.M. Casein Kinase 2 α Regulates Multidrug Resistance-Associated Protein 1 Function via Phosphorylation of Thr249, *Mol. Pharmacol.* **2012**, *82*, 488-499.
93. Bhandari, R.; Knecht, M.R.* Isolation of Peptide Sequence Effects that Control the Structure and Function of Biotemplated Pd Nanomaterials, *Langmuir* **2012**, *28*, 8110-8119.
94. Bhandari, R.; Knecht, M.R.* Synthesis, Characterization, and Catalytic Application of Networked Au Nanostructures Fabricated Using Peptide Templates, *Catal. Sci. Technol.* **2012**, *2*, 1360-1366.
95. Coppage, R.; Slocik, J.M.; Briggs, B.D.; Frenkel, A.I.; Naik, R.R.; Knecht, M.R.* Determining Peptide Sequence Effects that Control the Size, Structure, and Function of Nanoparticles, *ACS Nano*, **2012**, *6*, 1625-1636.
96. Dickerson, M.T.; Abney, M.B.; Cameron, C.E.; Knecht, M.R.; Bachas, L.G.; Anderson, K.W. Fibronectin Binding to the *Treponema pallidum* Adhesin Protein Fragment rTp0483 on Functionalized Self-Assembled Monolayers, *Bioconjugate Chem.* **2012**, *23*, 184-195.

97. Briggs, B.D.; Knecht, M.R.* Nanotechnology Meets Biology: Peptide-based Methods for the Fabrication of Functional Materials, *J. Phys. Chem. Lett.* **2012**, *3*, 405-418. (Invited perspective)
98. Bhandari, R.; Coppage, R.; Knecht, M.R.* Mimicking Nature's Strategies for the Design of Nanocatalysts, *Catal. Sci. Technol.* **2012**, *2*, 256-266. (Invited perspective; Published as a HOT Article; Featured on the inside front cover; Listed as a top 10 most read article for January 2012.)
99. Coppage, R.; Slocik, J.M.; Briggs, B.D.; Frenkel, A.I.; Heinz, H.; Naik, R.R.; Knecht, M.R.* Crystallographic Recognition Controls Peptide Binding for Bio-based Nanomaterials, *J. Am. Chem. Soc.* **2011**, *133*, 12346-12349.
100. Sethi, M.; Law, W.-C.; Fennell, W.A., III; Prasad, P.N.; Knecht, M.R.* Employing Materials Assembly to Elucidate Surface Interactions of Amino Acids with Au Nanoparticles, *Soft Matter* **2011**, *7*, 6532-6541.
101. Pacardo, D.B.; Slocik, J.M.; Kirk, K.C.; Naik, R.R.; Knecht, M.R.* Interrogating the Catalytic Mechanism of C-C Coupling Reactions Employing Bio-Inspired Pd Nanoparticle Catalysts, *Nanoscale* **2011**, *3*, 2194-2201.
102. Bhandari, R.; Knecht, M.R.* Effects of the Material Structure on the Catalytic Activity of Peptide-Templated Pd Nanomaterials, *ACS Catal.* **2011**, *1*, 89-98. (Featured on the cover of the February 2011 issue. This work was also listed as a top 20 most read article in *ACS Catal.* for January 2011.)
103. Pickin, K.A.; Ezenwajiaku, N.; Overcash, H.; Sethi, M.; Knecht, M.R.; Paumi, C.M. Suppression of YCF1P Function by CKA1P-Dependent Phosphorylation is Attenuated in Response to Salt Stress, *FEMS Yeast Res.* **2010**, *10*, 839-857.
104. Sethi, M.; Pacardo, D.B.; Knecht, M.R.* Biological Surface Effects of Metallic Nanomaterials for Applications in Assembly and Catalysis, *Langmuir* **2010**, *26*, 15121-15134. (Invited feature article – Featured on the cover of the October 5, 2010 issue.)
105. Sethi, M.; Knecht, M.R.* Understanding the Mechanism of Amino Acid-Based Au Nanoparticle Chain Formation, *Langmuir* **2010**, *26*, 9860-9874. (This work was also listed as a top 20 most read article in *Langmuir* for April 2010.)
106. Coppage, R.; Slocik, J.M.; Sethi, M.; Pacardo, D.B.; Naik, R.R.; Knecht, M.R.* Elucidation of Peptide Effects that Control the Activity of Nanoparticles, *Angew. Chem., Int. Ed.* **2010**, *49*, 3767-3770.

107. Knecht, M.R.;* Pacardo, D.B. Employing High-Resolution Materials Characterization to Understand the Effects of Pd Nanoparticle Structure on their Activity as Catalysts for Olefin Hydrogenation, *Anal. Bioanal. Chem.* **2010**, 397, 1137-1155.
108. Jakhmola, A.; Bhandari, R.; Pacardo, D.B.; Knecht, M.R.* Peptide Template Effects for the Synthesis and Catalytic Application of Pd Nanoparticle Networks, *J. Mater. Chem.* **2010**, 20, 1522-1531.
109. Sethi, M.; Knecht, M.R.* Experimental Studies on the Interactions between Au Nanoparticles and Amino Acids: Bio-Based Formation of Branched Linear Structures, *ACS Appl. Mater. Interfaces* **2009**, 1, 1270-1278. (This work was also listed as a top 20 most read article in *ACS Appl. Mater. Interfaces* for June 2009.)
110. Pacardo, D.B.; Sethi, M.; Jones, S.E.; Naik, R.R.; Knecht, M.R.* Biomimetic Synthesis of Pd Nanocatalysts for the Stille Coupling Reaction, *ACS Nano* **2009**, 3, 1288-1296.
111. Chopra, N.; Bachas, L.G.; Knecht, M.R.* Fabrication and Biofunctionalization of Carbon-Encapsulated Au Nanoparticles, *Chem. Mater.* **2009**, 21, 1176-1178. A summary of this work was featured on the NanoWerk website (posted on April 28, 2009; <http://www.nanowerk.com/spotlight/spotid=10319.php>. This work was also listed as a top 20 most read article in *Chem. Mater.* for April 2009.)
112. Knecht, M.R.;* Sethi, M. Bio-Inspired Colorimetric Detection of Hg²⁺ and Pb²⁺ Heavy Metal Ions Using Au Nanoparticles, *Anal. Bioanal. Chem.* **2009**, 394, 33-46.
113. Sethi, M.; Joung, G.; Knecht, M.R.* Linear Assembly of Au Nanorods Using Biomimetic Ligands, *Langmuir* **2009**, 25, 1572-1581.
114. Sethi, M.; Joung, G.; Knecht, M.R.* Stability and Electrostatic Assembly of Au Nanorods for use in Biological Assays, *Langmuir* **2009**, 25, 317-325.
115. Weir, M.G.; Knecht, M.R.; Frenkel, A.I.; Crooks, R.M. Structural Analysis of PdAu Dendrimer-Encapsulated Nanoparticles, *Langmuir*, **2010**, 26, 1137-1146.
116. Carino, E.V.; Knecht, M.R.; Crooks, R.M. Quantitative Analysis of the Stability of Pd Dendrimer-Encapsulated Nanoparticles, *Langmuir*, **2009**, 25, 10279-10284.
117. Knecht, M.R.; Weir, M.G.; Myers, V.S.; Pyrz, W.D.; Ye, H.; Petkov, V.; Buttrey, D.J.; Frenkel, A.I.; Crooks, R.M. Synthesis and Characterization of Pt Dendrimer-

Encapsulated Nanoparticles: Effect of the Template Upon Nanoparticle Formation, *Chem. Mater.* **2008**, *20*, 5218-5228.

118. Petkov, V.; Bedford, N.; Knecht, M.R.; Weir, M.G.; Crooks, R.M.; Tang, W.; Henkelman, G.; Frenkel, A.I. Periodicity and Atomic Ordering in Nanosized Particles of Crystals, *J. Phys. Chem. C* **2008**, *112*, 8907-8911.
119. Knecht, M.R.; Weir, M.G.; Frenkel, A.I.; Crooks, R.M. Structural Rearrangement of Bimetallic Alloy PdAu Nanoparticles within Dendrimer Templates to Yield Core/Shell Configurations, *Chem. Mater.* **2008**, *20*, 1019-1028.
120. Knecht, M.R.; Crooks, R.M. Magnetic Properties of Dendrimer-Encapsulated Iron Nanoparticles Containing an Average of 55 and 147 Atoms, *New J. Chem.* **2007**, *31*, 1349-1353.
121. Knecht, M.R.; Garcia-Martinez, J.C.; Crooks, R.M. Synthesis, Characterization, and Magnetic Properties of Dendrimer-Encapsulated Nickel Nanoparticles Containing <150 Atoms, *Chem. Mater.* **2006**, *18*, 5039-5044.
122. Wilson, O.M.; Knecht, M.R.; Garcia-Martinez, J.C.; Crooks, R.M. The Effect of Pd Nanoparticle Size on the Catalytic Hydrogenation of Allyl Alcohol, *J. Am. Chem. Soc.* **2006**, *128*, 4510-4511. A summary of this paper was featured in *Science* **2006**, *311*, 1837.
123. Knecht, M.R.; Garcia-Martinez, J.C.; Crooks, R.M. Hydrophobic Dendrimers as Templates for Au Nanoparticles, *Langmuir* **2005**, *21*, 11981-11986.
124. Knecht, M.R.; Sewell, S.L.; Wright, D.W. Size Control of Dendrimer-Templated Silica, *Langmuir* **2005**, *21*, 2058-2061.
125. Knecht, M.R.; Wright, D.W. Dendrimer Mediated Formation of Multicomponent Nanospheres, *Chem. Mater.* **2004**, *16*, 4890-4895.
126. Knecht, M.R.; Wright, D.W. Amine-Terminated Dendrimers as Biomimetic Templates for Silica Nanosphere Formation, *Langmuir* **2004**, *20*, 4728-4732.
127. Knecht, M.R.; Wright, D.W. Functional Analysis of the Biomimetic Silica Precipitating Activity of the R5 Peptide from *Cylindrotheca fusiformis*, *Chem. Commun.* **2003**, *24*, 3038-3039.

Book Chapters

1. Merrill, N.M.; Knecht, M.R. Self-Assembled Biological Structures as Templates for Nanoparticle Formation. In *Self Assembled Nanostructures of Biopolymers, Organic Semiconductors, and Inorganic Compounds*, Hendrik Heinz, Ed.; Wiley, New York, NY, 2020, in press.
2. Coppage, R.; Knecht, M.R. Bio-Inspired Nanocatalysts. In *Bio-inspired Nanotechnology: From Surface Analysis to Applications*, Marc R. Knecht and Tiffany R. Walsh, Ed.; Springer: New York, NY, 2014; 173-220.
3. Pacardo, D.B.; Knecht, M.R. Pd Nanoparticles in C-C Coupling Reactions. In *Nanocatalysts: Advances and Applications in Homogeneous and Heterogeneous Catalysis*, Franklin Tao, Ed.; RSC Publishing: London, 2014; 112-156.
4. Sethi, M.; Knecht, M.R. Amino Acid Mediated Linear Assembly of Au Nanomaterials. In *Nanobiotechnology Protocols*, 2nd Edition, Sandra J. Rosenthal and David W. Wright, Ed.; Humana Press: New York, NY, 2013; 149-161.
5. Slocik, J.M.; Knecht, M.R.; Wright, D.W. Biomimetic Synthesis of Nanoparticles. In *Encyclopedia of Inorganic Chemistry*, 2nd Edition, R. Bruce King, Ed.; John Wiley and Sons Ltd.: New York, NY, 2005; 371-391.
6. Slocik, J.M.; Knecht, M.R.; Wright, D.W. Biogenic Nanoparticles. In *The Encyclopedia of Nanoscience and Nanotechnology*, H.S. Nalwa, Ed.; American Scientific Publishers: Stevenson Ranch, CA, 2004; 293-308.

Other

1. Knecht, M.R. Non-Specific Proteases Can Produce Metal Oxide Nanoparticles, *J. Mater. Chem.* **2009**, *19*, 8276-8278. (invited Highlight)
2. Knecht, M.R.; Daunert, S. A Light Upon the Horizon: Young Analytical Chemists Forging New Scientific Pathways During an Economic Downturn, *Anal. Bioanal. Chem.* **2009**, *394*, 1-3. (editorial)
3. Knecht, M.R. Micro/Nano Technology for Genomics and Proteomics Ed. M. Ozkan and M.J. Heller, *Anal. Bioanal. Chem.* **2008**, *392*, 19-20. (book review)

Presentations

Colleges, Universities, and Government Laboratories

1. Saturday Seminar Series: Light as Reagent and Product (virtual, February 2025); Exploiting Light for Catalytic Environmental Remediation.
2. University of California, Merced (Merced, CA, October 2024) Department of Chemistry & Biochemistry; Harnessing the Precision of Biorecognition for the Development of Responsive, Functional Nanomaterials.
3. Mississippi State University (Starkville, MS, August 2024) Department of Chemistry; Harnessing the Precision of Biorecognition for the Development of Responsive, Functional Nanomaterials.
4. Florida Atlantic University (Boca Raton, FL, April 2024) Department of Chemistry; Harnessing the Precision of Biorecognition for the Development of Responsive, Functional Nanomaterials.
5. Stony Brook University (Stony Brook, NY, November 2022) Materials Science and Chemical Engineering; Harnessing the Precision of Biological Recognition for the Development and Assembly of Multifunctional and Multicompositional Materials.
6. United States Army (Natick, MA, March 2022 – virtual visit) DEVCOM Soldier Center; Peptide-Driven Exfoliation and Assembly of 2D Materials.
7. University of South Florida (Tampa, FL, February 2022 – virtual visit) Taneja College of Pharmacy; Harnessing the Precision of Biological Recognition for the Development and Assembly of Multifunctional and Multicompositional Materials.
8. Brazilian Center for Research in Energy and Materials (Campinas, Brazil, August 2019) Brazilian Nanotechnology National Laboratory (LNNano); Harnessing the Precision of Biorecognition or the Development of Responsive, Functional Inorganic Nanomaterials.
9. Georgia Institute of Technology (Atlanta, GA, March 2019) School of Materials Science and Engineering; Harnessing the Precision of Biorecognition or the Development of Responsive, Functional Inorganic Nanomaterials.

10. Florida International University (Miami, FL, February 2019) Department of Chemistry and Biochemistry; Harnessing the Precision of Biorecognition or the Development of Responsive, Functional Inorganic Nanomaterials.
11. Florida Atlantic University (Boca Raton, FL, October 2018) Department of Chemistry and Biochemistry; Harnessing the Precision of Biorecognition or the Development of Responsive, Functional Inorganic Nanomaterials.
12. Georgia Southern University (Statesboro, GA, January 2018) Department of Chemistry; Exploiting the Peptide Sequence and Non-Natural Moieties to Control the Structure/Function/Activity Relationship of Nanomaterials.
13. St. Thomas University (Miami Gardens, FL, June 2016) School of Science; Exploiting the Peptide Sequence to Control the Structure/Function Relationship of Nanomaterials.
14. Valparaiso University (Valparaiso, IN, April 2016) Department of Chemistry; Exploiting the Peptide Sequence to Control the Structure/Function Relationship of Nanomaterials.
15. University of Colorado (Boulder, CO, October 2015) Department of Chemical and Biological Engineering; Exploiting the Peptide Sequence to Control the Structure/Function Relationship of Nanomaterials.
16. Aalto University (Helsinki, Finland, March 2015) Department of Chemistry; Exploiting the Peptide Sequence to Control the Structure/Function Relationship of Nanomaterials.
17. Naval Research Laboratory (Washington, DC, November 2014) Center for Bio/Molecular Science & Engineering; Exploiting the Peptide Sequence to Control the Structure/Function Relationship of Nanomaterials.
18. Trinity University (San Antonio, TX, February 2014) Department of Chemistry; Exploiting the Peptide Sequence to Control the Structure/Function Relationship of Nanomaterials.
19. University of Melbourne (Melbourne, Australia, December 2013) Bio21; Exploiting the Peptide Sequence to Control the Structure/Function Relationship of Nanomaterials.
20. Buffalo State University (Buffalo, NY, October 2013) Department of Chemistry; Exploiting the Peptide Sequence to Control the Structure/Function Relationship of Nanomaterials.

21. University of Arkansas (Fayetteville, AR, September 2013) Department of Chemistry and Biochemistry; Exploiting the Peptide Sequence to Control the Structure/Function Relationship of Nanomaterials.
22. Miller School of Medicine at the University of Miami (Miami, FL, January 2012) Department of Biochemistry and Molecular Biology; Elucidation of Biomolecular Binding Events at Nanomaterial Surfaces.
23. Colorado School of Mines (Golden, CO, December 2011) Department of Chemistry and Geochemistry; Probing and Exploiting the Biological/Inorganic Interface to Control the Activity of Bio-Inspired Nanomaterials.
24. The University of Texas at Austin (Austin, TX, October 2011) Department of Chemistry and Biochemistry; Probing and Exploiting the Biological/Inorganic Interface to Control the Activity of Bio-Inspired Nanomaterials.
25. Texas A&M University (College Station, TX, October 2011) Department of Chemistry; Probing and Exploiting the Biological/Inorganic Interface to Control the Activity of Bio-Inspired Nanomaterials.
26. Nottingham Trent University (Nottingham, United Kingdom, May 2011) Department of Chemistry; Probing and Exploiting the Biological/Inorganic Interface to Control the Activity of Bio-Inspired Nanomaterials.
27. University of Warwick (Coventry, United Kingdom, May 2011) Department of Chemistry; Probing and Exploiting the Biological/Inorganic Interface to Control the Activity of Bio-Inspired Nanomaterials.
28. University of Miami (Miami, FL, January 2011) Department of Chemistry; Probing and Exploiting the Biological/Inorganic Interface to Control the Activity of Bio-Inspired Nanomaterials.
29. University of South Alabama (Mobile, AL, January 2010) Department of Chemistry; Bio-Inspired Processing and Assembly of Au Nanomaterials.
30. University of Louisville (Louisville, KY, March 2009) Department of Chemistry; Bio-Inspired Processing and Assembly of Au Nanomaterials.
31. Berea College (Berea, KY, February 2009) Department of Chemistry; Biologically Designed Assembly of Au Nanorods.

32. Tennessee State University (Nashville, TN, January 2009) Department of Chemistry; Biologically Designed Assembly of Au Nanorods.
33. University of Southern California (Los Angeles, CA, February 2007) Department of Chemistry; Atomic-Level Characterization of Dendrimer-Encapsulated Nanoparticles.
34. Indiana University (Bloomington, IN, January 2007) Department of Chemistry; Atomic-Level Characterization of Dendrimer-Encapsulated Nanoparticles.
35. University of Kentucky (Lexington, KY, January 2007) Department of Chemistry; Atomic-Level Characterization of Dendrimer-Encapsulated Nanoparticles.
36. University at Buffalo, SUNY (Buffalo, NY, December 2006) Department of Chemistry; Atomic-Level Characterization of Dendrimer-Encapsulated Nanoparticles.
37. Temple University (Philadelphia, PA, November 2006) Department of Chemistry; Atomic-Level Characterization of Dendrimer-Encapsulated Nanoparticles.
38. SUNY Stony Brook (Stony Brook, NY, September 2005) Department of Chemistry; Synthesis and Characterization of Dendrimer-Encapsulated Nanoparticles in Organic Solvents.

Scientific Conferences and Workshops

1. Marc R. Knecht, Harnessing Bio-Inspiration for the Controlled Binding and Assembly of Nanomaterials, International Rendez-Vous Summer Event on Nature Inspires Creativity Engineers (NICE), Nice, France, June 22-25, 2025. (*invited speaker*)
2. Marc R. Knecht, Bio-Inspired Routes to Functional Inorganic Nanomaterials for Assembly and Catalysis, Materials Research Society Spring Meeting, Seattle, WA, April 7-10, 2025. (*invited speaker*)
3. Marc R. Knecht, Mimicking Biological Systems to Access Functional Nanomaterials for Catalysis and Energy Storage, International Rendez-Vous Summer Event on Nature Inspires Creativity Engineers (NICE), Nice, France, June 19-21, 2024. (*invited speaker*)
4. Marc R. Knecht, Harnessing the Precision of Biorecognition for the Development of Responsive, Functional Nanomaterials, Richard M. Crooks Retirement Symposium, Austin, TX, June 1, 2024. (*invited speaker*)

5. Marc R. Knecht, Harnessing the Precision of Biorecognition for the Development of Responsive, Functional Nanomaterials, International Conference on Nanoscience and Nanotechnology, Melbourne, Australia, February 13-15, 2024. (*invited speaker*)
6. Marc R. Knecht, Harnessing the Precision of Biological Binding Events to Drive Nanomaterials Assembly, American Chemical Society Fall National Meeting, San Francisco, CA, August 13-17, 2023. (*invited speaker*)
7. Marc R. Knecht, Harnessing the Precision of Biorecognition to Access Two-Dimensional Nanosheet Heterostructures, International Rendez-Vous Summer Event on Nature Inspires Creativity Engineers (NICE), Nice, France, June 20-22, 2023. (*invited speaker*)
8. Marc R. Knecht, Exploiting Bio-Recognition for the Generation of Functional Nanomaterials, American Chemical Society Spring National Meeting, Indianapolis, IN, March 26-30, 2023. (*invited speaker*)
9. Marc R. Knecht, Bio-Inspired Approaches Towards Graphene/h-BN Nanosheet Assembly Under Sustainable Conditions, 10th International Conference on Advanced Materials and Nanotechnology (AMN10), Rotorua, New Zealand, February 7-10, 2023.
10. Marc R. Knecht, Bio-Inspired Approaches for Assembly Insights for Graphene and h-BN, Florida Annual Meeting and Exposition (FAME), Palm Harbor, FL, August 4-6, 2022. (*invited speaker*)
11. Marc R. Knecht, Harnessing the Precision of Biological Recognition for the Development and Assembly of Multifunctional and Multicompositional Materials, Pacificchem, Virtual Symposium, December 16-21, 2021. (*invited speaker*)
12. Marc R. Knecht, Bio-Inspired Approaches for Assembly – Insights for Graphene and h-BN, Materials Research Society Spring Meeting, Virtual Symposium, April 19-23, 2021. (*invited speaker*)
13. Atul D. Parab, Akin Budi, Nermina Brljak, Joseph M. Slocik, Rahul Rao, Rajesh R. Naik, Tiffany R. Walsh, and Marc R. Knecht, Peptide-Driven Binding, Exfoliation, and Stabilization of 2D Nanosheet Materials, ICONN2020, Brisbane, Australia, February 9-13, 2020.
14. Marc R. Knecht, Bio-nano Interactions in Designing Materials, Bridging the Gap: Bio-Inspired Nanomaterials and Sustainable Manufacture Symposium, Manchester, UK, January 22-23, 2020. (*invited speaker*)

15. Marc R. Knecht, Sustainable Fabrication of Metal Oxide Nanomaterials for Environmental Remediation, 2019 Southeastern Regional Meeting of the American Chemical Society, Savannah, GA, October 20-23, 2019. (*invited speaker*)
16. Marc R. Knecht, Bio-Inspired Approaches for the Generation of Multifunctional Inorganic Nanoparticles via Responsive and Reactive Peptide Ligands. American Chemical Society Spring National Meeting, Orlando, FL, March 31 – April 4, 2019. (*invited speaker*)
17. Marc R. Knecht, Harnessing the Precision of Biorecognition for the Development and Assembly of Responsive, Functional Inorganic Nanomaterials. Materials Research Society Fall Meeting, Boston, MA, November 26 – 30, 2018. (*invited speaker*)
18. Marc R. Knecht, Exploiting the Peptide Sequence and Non-Natural Moieties to Control the Structure/Function/Activation Relationship of Nanomaterials. ICFPAM2016, Daejeon, Korea, October 31-November 4, 2016. (*invited speaker*)
19. Marc R. Knecht. Stimuli Responsive and Reconfigurable Noble Metal Nanoparticle Biointerfaces. SCIX2016 Conference (FACSS), Minneapolis, MN, September 18-23, 2016. (*invited speaker*)
20. Marc R. Knecht. Stimuli Responsive and Reconfigurable Nanoparticle Biointerfaces. 2016 TMS National Conference, Nashville, TN, February 14-18, 2016. (*invited speaker*)
21. Marc R. Knecht. Exploiting the Specific, Non-Covalent Interactions of Peptides with Inorganic Nanoparticles to Engineer Functional and Responsive Interfaces on the Atomic Scale. 2015 Pacificchem Conference, Honolulu, HI, December 15-20, 2015. (*invited speaker*)
22. Marc R. Knecht. Peptide-Based Strategies to Control the Structure/Function Relationship of Nanocatalysts. 2015 Spring MRS National Meeting, San Francisco, CA, April 6-10, 2015.
23. Marc R. Knecht, Elsayed M. Zahran, Nicholas M. Bedford, Michelle A. Nguyen, Yao-Jen Chang, Beth S. Guiton, Rajesh R. Naik, and Leonidas G. Bachas. Light-Activated Multicomponent Materials Optimized for Tandem Catalysis. 2015 Spring ACS National Meeting, Denver, CO, March 22-26, 2015. (*invited speaker*)
24. Marc R. Knecht. Exploiting the Bio/Inorganic Interface to Control the Catalytic Activity of Nanomaterials. 2014 NanoFlorida Meeting, Coral Gables, FL, September 24-26, 2014. (*invited speaker*)
25. Marc R. Knecht, Elsayed M. Zahran, Nicholas M. Bedford, Michelle A. Nguyen, Yao-Jen Chang, Beth S. Guiton, Rajesh R. Naik, and Leonidas G. Bachas. Exploring the

- Structure/Function Relationship of Catalytic Nanomaterials. 2014 Spring ACS National Meeting, Dallas, TX, March 16-20, 2014. (*invited speaker*)
26. Nicholas A. Merrill, Nicholas M. Bedford, Larry Drummy, Kyle Merino, Yang Ren, Rajesh R. Naik, and Marc R. Knecht. Synthesis of Peptide-Templated Bimetallic Nanostructures for Enhanced Catalytic Reactivity. 2014 Spring ACS National Meeting, Dallas, TX, March 16-20, 2014.
 27. Zhenghua Tang, J. Pablo Palafox-Hernandez, Wing-Cheung Law, Zak E. Hughes, Mark T. Swihart, Paras N. Prasad, Tiffany R. Walsh and Marc R. Knecht. Biomolecular Recognition Principles for Bionanocombinatorics: An Integrated Approach to Elucidate Enthalpic and Entropic Factors. 2014 Spring ACS National Meeting, Dallas, TX, March 16-20, 2014.
 28. Beverly D. Briggs, Ryan Pekarek, and Marc R. Knecht. C-C Coupling Studies Driven by Bio-Inspired Nanocatalysts. 2014 Spring ACS National Meeting, Dallas, TX, March 16-20, 2014.
 29. Zhenghau Tang, J. Pablo Palafox-Hernandez, W.-C. Law, Zak E. Hughes, Mark T. Swihart, Paras N. Prasad, Marc R. Knecht, and Tiffany R. Walsh. Peptide Effects at Nanoparticle Surfaces. 2014 Spring ACS National Meeting, Dallas, TX, March 16-20, 2014.
 30. Marc R. Knecht, Dennis B. Pacardo, Joseph M. Slocik, Ryan Coppage, Beverly D. Briggs, and Rajesh R. Naik. Characterization of the Effects of Biomolecular Surface Structures on the Properties of Peptide-Capped Nanoparticles. 2014 Pittcon Conference, Chicago, IL, March 2-6, 2014.
 31. Marc R. Knecht. Controlling Material Functionality and Assembly Via Localized Peptide Surface Interactions with Nanoparticles. 2013 International Conference on the Frontiers of Polymers and Materials, Auckland, New Zealand, December 8-13, 2013.
 32. Marc R. Knecht. Biomimetic Nanomaterials for Energy Applications. 2013 Southeastern Regional Meeting of the American Chemical Society, Atlanta, GA, November 12-15, 2013. (*invited speaker*)
 33. Marc R. Knecht. Nanotechnology as a Mechanism to Engage Middle School Students with STEM. STEM: The Future is Present Meeting of the Florida League of Middle Schools Region VII Conference, Pembroke Pines, FL, October 25, 2013. (*invited speaker*)
 34. Marc R. Knecht, Dennis B. Pacardo, Ryan Coppage, Beverly D. Briggs, Joseph M. Slocik, and Rajesh R. Naik. Exploring Peptides for Nanomaterial Fabrication and Activation. 2013 Spring ACS National Meeting, New Orleans, LA, April 7-11, 2013.

35. Ryan Coppage, Joseph M. Slocik, Beverly D. Briggs, Hendrik Heinz, Rajesh R. Naik, and Marc R. Knecht. Exploiting Peptide Sequence Effects to Enhance the Catalytic Reactivity of Nanoparticles. 2013 Spring ACS National Meeting, New Orleans, LA, April 7-11, 2013.
36. Rohit Bhandari and Marc R. Knecht. Synthesis, Characterization, and Catalytic Applications of Peptide-Templated Nanomaterials. 2013 Spring ACS National Meeting, New Orleans, LA, April 7-11, 2013.
37. Dennis B. Pacardo, Joseph M. Slocik, Rajesh R. Naik, and Marc R. Knecht. Exploring the Catalytic Functionality of Peptide-Capped Pd Nanoparticles Towards Energy-Efficient C-C Coupling Reactions. 2013 Spring ACS National Meeting, New Orleans, LA, April 7-11, 2013.
38. Nicholas M. Bedford, Rohit Bhandari, Joseph M. Slocik, Rajesh R. Naik, and Marc R. Knecht. Pd Nanomaterial Templated by R5-PAMAM Dendrimer Conjugates. 2013 Spring ACS National Meeting, New Orleans, LA, April 7-11, 2013.
39. Marc R. Knecht. Bio-inspired Nanotechnology for Green Energy Applications. 2012 ACS Summer School on Green Chemistry and Sustainable Energy, Golden, CO, June 25 – July 1, 2012. (*invited speaker*)
40. Marc R. Knecht. Selective Modification of Au Nanoparticle Surfaces using Biomolecules to Drive Linear Self-assembly. 2012 Spring ACS National Meeting, San Diego, CA, March 25-29, 2012. (*invited speaker*)
41. Marc R. Knecht. Employing Materials Directing Peptide to Control the Structure/Function Relationship of Nanoparticles. 2011 Fall ACS National Meeting, Denver, CO, August 28 – September 1, 2011. (*invited speaker*)
42. Marc R. Knecht. Exploiting Catalysis to Probe the Bio/Nano Interface. Grand Challenges in Understanding Interfaces Between Hard and Soft Matter Workshop, Lausanne, Switzerland, May 11-14, 2011. (*invited speaker*)
43. Marc R. Knecht. Exploiting Catalysis to Probe the Bio/Nano Interface. Exploring Biological Interfaces Workshop, San Juan, Puerto Rico, April 4-6, 2011. (*invited speaker*)
44. Marc R. Knecht and Rohit Bhandari. Peptide-template Mediated Synthesis of Catalytically Active Pd Nanoparticle Networks. Spring MRS National Meeting, San Francisco, CA, April 25-29, 2011.

45. Marc R. Knecht, Ryan Coppage, Dennis B. Pacardo, Joseph M. Slocik, and Rajesh R. Naik. Interrogating the Biotic/Abiotic Interface to Control the Activity of Bio-inspired Nanocatalysts. Spring MRS National Meeting, San Francisco, CA, April 25-29, 2011.
46. Marc R. Knecht. Peptide-Template Mediated Synthesis of Catalytically Active Pd Nanoparticle Networks. 241st ACS National Meeting, Anaheim, CA, March 27-31, 2011. (*invited speaker*)
47. Marc R. Knecht. Interrogating the Biotic/Abiotic Interface to Control the Activity of Bio-Inspired Nanocatalysts. 241st ACS National Meeting, Anaheim, CA, March 27-31, 2011. (*invited speaker*)
48. Marc R. Knecht and Manish Sethi. Employing Materials Assembly to Elucidate Biomolecular Interactions of Amino Acids with Au Nanoparticles. 241st ACS National Meeting, Anaheim, CA, March 27-31, 2011.
49. Marc R. Knecht, Ryan Coppage, Dennis B. Pacardo, Joseph M. Slocik, and Rajesh R. Naik. Elucidation of Peptide Effects that Control the Activity of Nanoparticles. Pacificchem 2010, Honolulu, HI, December 15-20, 2010.
50. Marc R. Knecht and Manish Sethi. Experimental Studies on the Interactions Between Au Nanoparticles and Amino Acids: Biobased Formation of Branched Linear Chains. Pacificchem 2010, Honolulu, HI, December 15-20, 2010.
51. Marc R. Knecht, Ryan Coppage, Dennis B. Pacardo, Joseph M. Slocik, and Rajesh R. Naik. Bio-Inspired Strategies to Design Efficient Nanocatalysts: Elucidating the Role of the Biotic/Abiotic Interface. 2010 Gordon Research Conference on Noble Metal Nanoparticles, Mount Holyoke College, MA, June 20-25, 2010. (*invited "Hot Topic" speaker*)
52. Marc R. Knecht, Ryan Coppage, Dennis B. Pacardo, Joseph M. Slocik, and Rajesh R. Naik. Exploring Bio-Inspired Strategies for the Production of Noble Metal Nanocatalysts. 41st Central Regional Meeting of the American Chemical Society, Dayton, OH, June 16-18, 2010. (*invited speaker*)
53. Manish Sethi and Marc R. Knecht. Surface Interactions Between Biomolecules and Au Nanoparticles. 41st Central Regional Meeting of the American Chemical Society, Dayton, OH, June 16-18, 2010.

54. Marc R. Knecht, Dennis B. Pacardo, Ryan Coppage, and Rajesh R. Naik. Exploring Bio-Inspired Strategies for the Production of Noble Metal Nanocatalysts. Spring MRS National Meeting, San Francisco, CA, April 5-9, 2010.
55. Marc R. Knecht, Dennis B. Pacardo, Ryan Coppage, and Rajesh R. Naik. Exploring Bio-Inspired Strategies for the Production of Noble Metal Nanocatalysts. 239th ACS National Meeting, San Francisco, CA, March 21-25, 2010. (*invited speaker*)
56. Manish Sethi, GaEun Joung, and Marc R. Knecht. Surface Interactions Between Biomolecules and Au Nanoparticles. 2009 Annual Meeting of the Kentucky Academy of Sciences, Northern Kentucky University, November 13-14, 2009.
57. Marc R. Knecht, Manish Sethi, and GaEun Joung. Bio-Inspired Assembly of Au Nanomaterials. 238th ACS National Meeting, Washington, D.C., August 16 – 20, 2009.
58. Marc R. Knecht, Dennis B. Pacardo, Sharon E. Jones, and Rajesh R. Naik. Peptide Mediated Synthesis of Energy and Environmentally Friendly Nanocatalysts. 238th ACS National Meeting, Washington, D.C., August 16-20, 2009.
59. Marc R. Knecht, Manish Sethi, and GaEun Joung. Bio-Inspired Processing and Assembly of Gold Nanomaterials. International Conference on Composites and NanoEngineering, Honolulu, HI, July 26 – August 1, 2009. (*invited speaker*)
60. Marc R. Knecht, Manish Sethi, and GaEun Joung. Linear Assembly of Au Nanorods Using Biomimetic Ligands. Southeastern Regional Meeting of the ACS, Nashville, TN, November 12-15, 2008.
61. Marc R. Knecht, Michael G. Weir, Heechang Ye, Anatoly I. Frenkel, and Richard M. Crooks. Structural Characterization of Dendrimer-Encapsulated Nanoparticles Using EXAFS. Southwestern Regional Meeting of the ACS, Houston, TX, October 19-22, 2006.
62. Marc R. Knecht, Michael G. Weir, Heechang Ye, Anatoly I. Frenkel, and Richard M. Crooks. Structural Characterization of Dendrimer-Encapsulated Nanoparticles Using EXAFS. Dendrimer Mini-Symposium, College Station, TX, July 25, 2006.
63. Marc R. Knecht and Richard M. Crooks. Synthesis, Characterization, and Magnetism of Dendrimer-Encapsulated Nanoparticles. Materials Research Society Fall Meeting, Boston, MA, November 28 – December 2, 2005.

64. Marc R. Knecht, Joaquin C. Garcia-Martinez, and Richard M. Crooks. Synthesis and Characterization of Dendrimer-Encapsulated Nanoparticles in Organic Solvent. Dendrimer Mini-Symposium, Austin, TX, August 8, 2005.
65. David W. Wright, Marc R. Knecht, and Scott A. Miller. Dendrimer Nanocomposite Materials. 229th ACS National Conference, San Diego, CA, March 13-17, 2005.
66. David W. Wright and Marc R. Knecht. Dendrimers as Diatoms. 227th ACS National Conference, Anaheim, CA, March 28 – April 1, 2004.
67. Marc R. Knecht and David W. Wright. Biomimetic Synthesis of Silica Nanostructures. Southeastern Regional Meeting of the ACS, Atlanta, GA, November 16-19, 2003.
68. David W. Wright, Joseph M. Slocik, and Marc R. Knecht. Biomolecular Recognition Elements for Nanoparticle Synthesis and Function. 225th ACS National Meeting, New Orleans, LA, March 23-27, 2003.
69. David W. Wright, Joseph M. Slocik, and Marc R. Knecht. Biomolecular Recognition Elements for Nanoparticle Assembly. 224th ACS National Meeting, Boston, MA, August 18-22, 2002.

General Public

1. Marc R. Knecht. Nanotechnology: The Smallest BIG Idea in Science. 2012 National Chemistry Week Event for the South Florida Regional Section of the American Chemical Society, Museum of Discovery and Science, Fort Lauderdale, FL, October 27, 2012. (*invited keynote address*)

Posters

1. Catherine J. Munro and Marc R. Knecht. Tryptophan Induced Reduction of Au³⁺ into Peptide-Mediated Au Nanoparticles. 2018 Gordon Research Conference on Noble Metal Nanoparticles, Mt. Holyoke College, MA, June 17-22, 2018.
2. Mary Olagunju, Xavier Poole, Patricia Blackwelder, El Sayed Zahran, Leonidas G. Bachas, and Marc R. Knecht. Photocatalytic Property Differences of Size Controlled Pd-Decorated SrTiO₃ Nanoparticles: Surprising Effects of the Pd²⁺ Ion Source. 2018 Gordon Research Conference on Noble Metal Nanoparticles, Mt. Holyoke College, MA, June 17-22, 2018.

3. Marc R. Knecht, Elsayed M. Zahran, Nicholas M. Bedford, Michelle A. Nguyen, Edward B. Miller, and Leonidas G. Bachas. Model Light-Activated Catalysts for Pollutant Degradation. 2014 Annual Superfund Conference, San Jose, CA, November 12-14, 2014.
4. Michelle A. Nguyen, Elsayed M. Zahran, Nicholas M. Bedford, Edward B. Miller, Leonidas G. Bachas, and Marc R. Knecht. Degradation of Polychlorinated Biphenyls Driven by Light-Activated Multicomponent Nanomaterials. 2014 Annual Superfund Conference, San Jose, CA, November 12-14, 2014.
5. Randy L. Lawrence and Marc R. Knecht. Synthesis of Spatially-Resolved Multicomponent Materials Through Peptide Functionalized Dendrimers. 2014 NanoFlorida Meeting, Coral Gables, FL, September 24-26, 2014.
6. Nicholas A. Merrill, Nicholas M. Bedford, Larry Drummy, Kyle Merino, Yang Ren, Rajesh R. Naik, and Marc R. Knecht. Synthesis of Peptide-Templated PdAu and PdPt Bimetallic Nanoparticles for Enhanced Olefin Hydrogenation. 2014 NanoFlorida Meeting, Coral Gables, FL, September 24-26, 2014.
7. Michelle A. Nguyen, Nicholas M. Bedford, and Marc R. Knecht. Effects of Morphology, Composition, and Surface Area on Size-Controlled Cu₂O Octahedra and their Comparative Photocatalytic Reactivities. 2014 NanoFlorida Meeting, Coral Gables, FL, September 24-26, 2014.
8. Marc R. Knecht, Nicholas M. Bedford, Hadi Ramezani-Dakhel, Joseph M. Slocik, Beverly D. Briggs, Anatoly I. Frenkel, Valeri Petkov, Hendrik Heinz, and Rajesh R. Naik. Atomically-Resolved Characterization of Peptide-Capped Noble Metal Nanoparticles and Correlation of the Structure to their Catalytic Reactivity. 2014 Gordon Research Conference on Noble Metal Nanoparticles, Mt. Holyoke College, MA, June 15-19, 2014.
9. Michelle A. Nguyen and Marc R. Knecht. Size-Controlled Synthesis of Cu₂O Octahedra and their Size-Dependent Photocatalytic Reactivities. 2014 Spring ACS National Meeting, Dallas, TX, March 16-20, 2014.
10. Marc R. Knecht, Elsayed M. Zahran, Nicholas M. Bedford, and Leonidas G. Bachas. Photoactivated, Sustainable Dehalogenation of Persistent Organic Pollutants. 2013 Annual Superfund Conference, Baton Rouge, LA, October 15-16, 2013.
11. Nicholas A. Merrill, Manish Sethi, Yao-Jen Chang, Beth S. Guiton, and Marc R. Knecht. Exploring the Ligand Layer on Surfactant-Coated Au Nanorods for Self-Assembly. 2013 Spring ACS National Meeting, New Orleans, LA, April 7-11, 2013.

12. Marc R. Knecht, Manish Sethi, and Nicholas A. Merrill. Linear Assembly of Au Nanomaterials via Biomolecular Modifications. 2012 Gold Conference, Tokyo, Japan, September 5-8, 2012.
13. Marc R. Knecht and Rohit Bhandari. Synthesis, Characterization, and Catalytic Application of Non-Spherical Au Nanomaterials Employing Peptide-based Templates. 2012 Gold Conference, Tokyo, Japan, September 5-8, 2012.
14. Nicholas A. Merrill, Yao-Jen Chang, Raymond R. Unocic, Beth S. Guiton, and Marc R. Knecht. High-resolution/*In Situ* Analysis of Au Nanorod Assembly Processes. 2012 Share Research Equipment User Facility Review, Oak Ridge National Laboratory, Oak Ridge, TN, August 8-9, 2012. (*invited poster presenter*)
15. Marc R. Knecht, Rohit Bhandari, and Dennis B. Pacardo. Exploiting Biomolecular Templates to Fabricate and Encapsulate Efficient, Non-Spherical, and Size Selective Inorganic Nanocatalysts. 2012 Gordon Research Conference on Green Chemistry, Il Ciocco, Italy, July 22-27, 2012.
16. Beverly D. Briggs, Ryan Pekarek, and Marc R. Knecht. Base Effects on Transmetalation in Stille and Suzuki C-C Coupling Using Peptide-Capped Pd Nanocatalysts. 2012 Gordon Research Conference on Green Chemistry, Il Ciocco, Italy, July 22-27, 2012.
17. Marc R. Knecht, Ryan Coppage, Dennis B. Pacardo, Joseph M. Slocik, Beverly D. Briggs, Anatoly I. Frenkel, Hendrik Heinz, and Rajesh R. Naik. Bio-inspired Synthesis, Characterization, and Applications of Spherical and Non-spherical Pd Nanostructures. 2012 Gordon Research Conference on Bio-inspired Materials, Davidson College, NC, June 24-29, 2012.
18. Dennis B. Pacardo, Joseph M. Slocik Rajesh R. Naik, and Marc R. Knecht. Exploiting the Green Catalytic Functionality of Peptide-capped Pd Nanoparticles. 2012 Gordon Research Conference on Bio-inspired Materials, Davidson College, NC, June 24-29, 2012.
19. Rohit Bhandari and Marc R. Knecht. Synthesis, Characterization, and Catalytic Applications of Peptide-templated Nanoparticle Networks. 2012 Gordon Research Conference on Bio-inspired Materials, Davidson College, NC, June 24-29, 2012.
20. Marc R. Knecht, Ryan Coppage, Dennis B. Pacardo, Joseph M. Slocik, Beverly D. Briggs, Anatoly I. Frenkel, Hendrik Heinz, and Rajesh R. Naik. Bio-inspired Synthesis, Characterization, and Applications of Spherical and Non-spherical Pd Nanostructures. 2012 Gordon Research Conference on Noble Metal Nanoparticles, Mt. Holyoke College, MA, June 17-22, 2012.

21. Marc R. Knecht, Ryan Coppage, Dennis B. Pacardo, Joseph M. Slocik, Beverly D. Briggs, Anatoly I. Frenkel, Hendrik Heinz, and Rajesh R. Naik. Probing the Biointerface of Peptide-Capped Pd Nanoparticles for Selectivity, Activity, and Size Control. 2012 Gordon Research Conference on Biointerfaces, Les Diablerets, Switzerland, May 20-25, 2012.
22. Ryan Coppage, Ravi A. Patel, Joseph M. Slocik, Roger M. Leblanc, Rajesh R. Naik, and Marc R. Knecht. Controlling Material Properties and Functionality via Biointerfaces. 2012 Gordon Research Conference on Biointerfaces, Les Diablerets, Switzerland, May 20-25, 2012.
23. Kari J. Zander, Elani Fouri, Rayontez Harper, Bethany Lega, Carly Joel, Meredith Stone, and Marc R. Knecht. Student Members of the ACS: University of Kentucky. 241st ACS National Meeting, Anaheim, CA, March 27-31, 2011.
24. Marc R. Knecht, Ryan Coppage, Dennis B. Pacardo, Joseph M. Slocik, and Rajesh R. Naik. Elucidation of Peptide Effects that Control the Activity of Nanoparticles. 2010 Gordon Research Conference on Noble Metal Nanoparticles, Mount Holyoke College, MA, June 20-25, 2010.
25. Ryan Coppage, Joseph M. Slocik, Rajesh R. Naik, and Marc R. Knecht. Elucidation of Peptide Effects that Control the Activity of Nanoparticles. 41st Central Regional Meeting of the American Chemical Society, Dayton, OH, June 16-18, 2010.
26. Dennis B. Pacardo, Rajesh R. Naik, and Marc R. Knecht. Exploring the Effects of Reaction Conditions on the Activity of Biomimetic Pd Nanoparticle Catalysts. 41st Central Regional Meeting of the American Chemical Society, Dayton, OH, June 16-18, 2010.
27. Rohit Bhandari, Anshuman Jakhmola, and Marc R. Knecht. Bio-Inspired Synthesis, Characterization, and Catalytic Application of Pd Nanoparticle Networks. 41st Central Regional Meeting of the American Chemical Society, Dayton, OH, June 16-18, 2010.
28. Ryan Coppage, Joseph M. Slocik, Rajesh R. Naik, and Marc R. Knecht. Elucidation of Peptide Effects that Control the Activity of Nanoparticles. 2010 Naff Symposium on Chemistry and Molecular Biology; Lexington, KY, April 23, 2010.
29. Dennis B. Pacardo, Rajesh R. Naik, and Marc R. Knecht. Exploring the Effects of Reaction Conditions on the Activity of Biomimetic Pd Nanoparticle Catalysts. 2010 Naff Symposium on Chemistry and Molecular Biology; Lexington, KY, April 23, 2010.

30. Rohit Bhandari, Anshuman Jakhmola, and Marc R. Knecht. Bio-Inspired Synthesis, Characterization, and Catalytic Application of Pd Nanoparticle Networks. 2010 Naff Symposium on Chemistry and Molecular Biology; Lexington, KY, April 23, 2010.
31. Manish Sethi and Marc R. Knecht. Surface Interactions Between Biomolecules and Au Nanoparticles. 2010 Naff Symposium on Chemistry and Molecular Biology; Lexington, KY, April 23, 2010.
32. Manish Sethi and Marc R. Knecht. Surface Interactions Between Biomolecules and Au Nanoparticles. Sixth Annual Kentucky Innovation and Entrepreneurship Conference, Lexington, KY, April 7, 2010.
33. Carly Joehl, Bethany Lega, Stephen M. Testa, and Marc R. Knecht. University of Kentucky Student Members of the American Chemical Society. 239th ACS National Meeting, San Francisco, CA, March 21-25, 2010.
34. Marc R. Knecht. Engaging Undergraduate Students in Science Using Cinema. First Annual STEM Education Conference: The Partnership Institute for Mathematics and Science Education Reform Mission, Lexington, KY, February 19-20, 2010.
35. Dennis B. Pacardo, Sharon E. Jones, Rajesh R. Naik, and Marc R. Knecht. Biomimetic Synthesis of Green Pd Nanoparticles for the Stille Coupling Reaction. Society for Biomaterials: Biomaterials Day, Lexington, KY, September 25, 2009.
36. Rohit Bhandari, Anshuman Jakhmola, and Marc R. Knecht. Biomimetic Synthesis of Pd Nanowire Networks Using Self-Assembled Peptide Scaffolds. Society for Biomaterials: Biomaterials Day, Lexington, KY, September 25, 2009.
37. Manish Sethi, GaEun Joun, and Marc R. Knecht. Surface Interactions Between Biomolecules and Au Nanoparticles. 238th ACS National Meeting, Washington, D.C., August 16-20, 2009.
38. Dennis B. Pacardo, Sharon E. Jones, Rajesh R. Naik, and Marc R. Knecht. Biomimetic Synthesis of Green Pd Nanoparticles for the Stille Coupling Reaction. 238th ACS National Meeting, Washington, D.C., August 16-20, 2009.
39. Christian M. Paumi, Kerry A. Pickin-Paumi, Nkiruka, Ezenwajlaku, Holly Overcash, Manish Sethi, and Marc R. Knecht. Cka1p Negative Regulation of Ycf1p-Function, via the Phosphorylation of Ser251, is Cka2p Independent. 238th ACS National Meeting, Washington, D.C., August 16-20, 2009.

40. Marc R. Knecht, Manish Sethi, and GaEun Joung. Biologically Designed Assembly of Au Nanorods. 83rd ACS Colloid and Surface Science Symposium; New York, NY, June 14-19, 2009.
41. Dennis B. Pacardo, Manish Sethi, Sharon E. Jones, Rajesh R. Naik, and Marc R. Knecht. Biomimetic Synthesis of Pd Nanoparticles for the Stille Coupling Reaction. 2009 Naff Symposium on Chemistry and Molecular Biology; Lexington, KY, April 25, 2009.
42. Manish Sethi, GaEun Joung, and Marc R. Knecht. Biomolecular-Based Assembly of Au Nanoparticles. 2009 Naff Symposium on Chemistry and Molecular Biology; Lexington, KY, April 25, 2009.
43. Anshuman Jakhmola, Dennis B. Pacardo, and Marc R. Knecht. Biomimetic Synthesis of Pd Nanowire Networks Using Self-Assembled Peptide Scaffolds. 2009 Naff Symposium on Chemistry and Molecular Biology; Lexington, KY, April 25, 2009.
44. GaEun Joung, Manish Sethi, Marc R. Knecht. Bio-Inspired Assembly of Au Nanorods. The American Institute of Chemical Engineers National Meeting, Philadelphia, PA, November 16-21, 2008.
45. Nitin Chopra, Leonidas G. Bachas, and Marc R. Knecht. Fabrication of Au/C Core/Shell Nanoparticles and Their Biofunctionalization. Gordon Research Conference: Nanostructure Fabrication; Tilton, NH, July 13-18, 2008.
46. Marc R. Knecht, Manish Sethi, and GaEun Joung. Linear Assembly of Au Nanorods Using Biomimetic Ligands. Gordon Research Conference: Nanostructure Fabrication; Tilton, NH, July 13-18, 2008.
47. Lewis C. Jackson, Marc R. Knecht, and Bert C. Lynn. Assessing the Reaction Profile and Cross-Linking Ability of Acrolein Reacted with Peptides Containing Varying Nucleophilic Side Chains. 56th ASMS Conference on Mass Spectrometry; Denver, CO, June 1-5, 2008.
48. Manish Sethi, GaEun Joung, and Marc R. Knecht. Stability and Electrostatic Assembly of Au Nanorods for use in Biological Assays. 2008 Naff Symposium on Chemistry and Molecular Biology; Lexington, KY, April 4, 2008.
49. Manish Sethi, GaEun Joung, and Marc R. Knecht. Stability and Electrostatic Assembly of Au Nanorods for use in Biological Assays. 2008 KYNANOMAT Conference; Louisville, KY, March 16-18, 2008.

50. Marc R. Knecht, Marquita D. Bradshaw, and Richard M. Crooks. Synthesis, Characterization, and Magnetism of Dendrimer-Encapsulated Fe, Co, and Ni Nanoparticles. Gordon Research Conference: Nanostructure Fabrication; Tilton, NH, July 16-21, 2006.
51. Marquita D. Bradshaw, Marc R. Knecht, and Richard M. Crooks. Synthesis, Characterization, and Magnetism of Dendrimer-Encapsulated Co Nanoparticles. 231st ACS National Meeting; Atlanta, GA, March 26-30, 2006.
52. Marc R. Knecht, Joaquin C. Garcia-Martinez, and Richard M. Crooks. Synthesis, Characterization, and Magnetic Properties of Dendrimer-Encapsulated Nanoparticles. Gordon Research Conference: Clusters, Nanocrystals, and Nanostructures, New London, CT; July 31 – August 5, 2005.
53. David W. Wright, Marc R. Knecht, and Sarah L. Sewell. Dendrimers as Diatoms. 14th International Society of Colloidal Chemistry; South Bend, IN, July 26-30, 2004.
54. Marc R. Knecht and David W. Wright. Encapsulation of CdS Nanoclusters in Sol-Gel Matrices. 221st ACS National Conference; San Diego, CA, April 1-5, 2001.

Current Grants and Contracts

1. “Stimuli-Responsive Assembly Proteins (StRAPs) for Hierarchical and Reconfigurable Organization of Inorganic Nanomaterials,” PI, Tiffany R. Walsh, Dominic Glover, Andrea D. Merg – co-PIs, Army Research Office, Chemistry Program, 2023-2026; \$1,999,996.
2. “Programming Resilin Assembly using Materials-Binding Peptides for Bioinspired Resilient Elastomeric Materials of Precise Morphologies,” PI, Tiffany R. Walsh, co-PI, Air Force Office of Scientific Research, Natural Materials and Systems Program, 2023-2026; \$899,065.
3. “Collaborative Research: Designing Functional Bioligand Interfaces for Multifunctional Nanomaterials,” PI, A. Frenkel, co-PI; National Science Foundation – Division of Chemistry, 2022-2026; \$406,261 – UM Portion.

Pending Grants and Contracts

1. “Collaborative Research: Bio-Inspired, Sustainable Routes to Compositionally Controlled High Entropy Alloy Nanoparticles for Enhanced Catalysis,” PI, A. Frenkel, co-PI; National Science Foundation – Division of Chemistry, 2026-2029; \$503,083 – UM Portion.
2. “Using High-Stakes, Real-World Events to Map the Neural Dynamics Linked to Internalizing Disorders,” co-PI, A. Heller, PI; National Institutes of Health – National Institute of Mental Health, 2026-2031; \$104,860 – Knecht Portion.

Previous Grants and Contracts

1. “Using Real-World, Personally Meaningful Events to Build Computational Models of Emotion,” co-PI, Aaron Heller, PI, National Institutes of Health, 2020-2022; \$413,113.
2. “Collaborative Research: Probing Reconfigurable Nanoparticle Biointerfaces using Catalysis,” PI, A. Frenkel, co-PI; National Science Foundation – Division of Chemistry, 2019-2022; \$311,343 – UM Portion.
3. “Peptide-Driven Exfoliation and Organization of Multi-Compositional 2D Nanomaterials,” PI, Tiffany R. Walsh, co-PI, Air Force Office of Scientific Research, Natural Materials, Systems, and Extremophiles Program, 2018-2022; \$848,203 (\$540,580 – UM Portion).
4. “HHMI: Sustaining Excellence in Undergraduate Science Education,” co-PI, Michael S. Gaines, PI, Howard Hughes Medical Institute, 2014-2022; \$1,500,000.
5. REU Site: Research Experiences at the Interface of Chemistry and Biological Sciences,” PI, Sylvia Daunert, co-PI, National Science Foundation – Division of Chemistry, 2015-2018; \$306,843.
6. “Bio-nanocombinatorics to Achieve Precisely-Assembled Multicomponent, Functional Hybrid Nanomaterials,” co-PI, Paras N. Prasad, PI, Air Force Office of Scientific Research, 2012-2017, \$741,820 (UM portion).
7. “Biomimetic Fabrication and Catalytic Application of Pd Nanoparticle Networks,” PI, National Science Foundation, Division of Materials Research – Biomaterials Program, 2010-2013; \$420,000.
8. “Elucidation of Peptide Surface Structural Effects on the Catalytic Activity of Bio-Inspired Pd Nanomaterials,” PI, National Science Foundation, Division of Chemical, Bioengineering, Environmental, and Transport Systems – Catalysis and Biocatalysis Program, 2010-2013; \$364,863.
9. “Bionanoconjugates for Detection of Circulating Tumor Cells in Lung Cancer,” multi-PI, MPI – Edward Hirschowitz, National Institutes of Health, 2011-2013; \$148,500.
10. “Biomimetic Synthesis of Heterogeneous Catalysts,” PI, American Chemical Society - Petroleum Research Foundation, 9/1/2008-7/31/2011; \$50,000.

Teaching Experience

Courses Taught

Chemical Dynamics Laboratory (CHM 205): Class size of 24 undergraduate students
University of Miami
Years Taught – SP 2021
*HHMI Integrated Laboratory for Biology and Chemistry using Authentic
Research

Principles of Chemistry (CHM 121): Class size of ~200 undergraduate students
University of Miami
Years Taught – FA 2019, FA 2020, FA 2021, FA 2022, FA 2023, FA 2024

Chemistry Laboratory II (CHM 114): Class size of 24 undergraduate students
University of Miami
Years Taught – SP 2015, SP 2016, SP 2017, SP 2018, SP 2019
*HHMI Integrated Laboratory for Biology and Chemistry using Authentic
Research

Chemistry for the Biosciences I (CHM 121): Class size of ~200 undergraduate students
University of Miami
Years Taught – FA 2013, FA 2014, FA 2015, FA 2016, FA 2017, FA 2018

Nanomaterials Chemistry (CHE 591): Class size ~20 graduate and undergraduate
students
University of Miami
Years Taught – SP 2014, SP 2020

Chemistry for the Biosciences II (CHM 221): Class size of ~50 undergraduate students
University of Miami
Years Taught – SP 2013

Principles of Chemistry I (CHM 111): Class size of ~50 undergraduate students
University of Miami
Years Taught – FA 2012
*Pilot section of Chemistry for Biosciences sequence – CHM 121 in future years.

Principles of Chemistry II (CHM 112): Class size ~25 undergraduate students
University of Miami
Years Taught – SP 2012

Ins. Methods in Chem. & Biochem. (CHM 320): Class size ~20 undergraduate students
 University of Miami
 Years Taught – SP 2012, SP 2013, SP 2014, SP 2015

Separations (CHE 580): Class size ~25 graduate and undergraduate students
 University of Kentucky
 Years Taught – SP 2010

Biological Chemistry Seminar (CHE 776-005): Class size ~20 graduate students
 University of Kentucky
 Years Taught – FA 2009, FA 2010

Nanomaterials Chemistry (CHE 580): Class size ~20 graduate and undergraduate students
 University of Kentucky
 Years Taught – SP 2009, SP 2011

General College Chemistry I (CHE 105): Class size ~230 undergraduate students
 University of Kentucky
 Years Taught – FA 2007, FA 2008, FA 2009, FA 2010

General Chemistry I Lab (CHEM 104a): Class size ~20 undergraduate students
 Vanderbilt University
 Years Taught – FA 2002

General Chemistry II Lab (CHEM 104b): Class size ~20 undergraduate students
 Vanderbilt University
 Years Taught – SP 2002

Chemical Literature (CHEM 250): Class size ~20 undergraduate and graduate students
 Vanderbilt University (teaching assistant to K. Porter)
 Years Taught – SP 2002

Service

University Wide – University of Miami

- Senior Residential Faculty Member, Stanford Residential College and Ibis Residential College – 2020 – 2024
- Associate Director of BioNIUM – 2018 – 2026

- Frost Science and Engineering Building Committee – 2018 – 2022
- Graduate School Dean Search Committee – 2012
- Maytag Fellowship Selection Committee – 2012, 2013

College – University of Miami

- PRISM Review Committee Chair – 2014
- Curriculum Committee – 2012 – 2020
- Summer Cognate Curriculum Committee – 2013

Department – University of Miami

- Chair – 2021 – 2026
- Faculty mentor to Professor Katlyn Meier – 2019 – present
- Director of Graduate Student Recruiting – 2011 – 2014
- Faculty Search Committee – 2011, 2012, 2014 (chair), 2015 (chair), 2019 (chair)
- Departmental Chair Search Committee – 2013
- Graduate Program Committee – 2011 – 2014
- Undergraduate Program Committee – 2013 – 2021 (chair)
- Departmental Website Committee – 2011 – 2018

University Wide – University of Kentucky

- Central Kentucky Regional Science and Engineering Fair – 2008, 2009

College – University of Kentucky

- Envision 2020: Teaching in 2020 Committee – 2010
- Panel discussion member for new faculty members – 2008

Department – University of Kentucky

- General Chemistry Online Course Development Committee – 2010
- Undergraduate Program Committee – 2010
- Chemistry Department Chair Search Committee – 2010
- Faculty advisor to the Student Affiliates of the American Chemical Society – 2009 – 2011
- Naff Symposium Chair – 2010
- Building and Infrastructure Committee – 2009, 2010
- Graduate Student Recruitment Committee - 2008
- Biological Division Cume Coordinator – 2008, 2009
- Faculty Search Committee – 2007, 2009, 2010
- Seminar Committee – 2007

Scientific Community

- Chair Elect – South Florida Section of the American Chemical Society (SoFLACS) – 2023.

- Panel Member – National Science Foundation, Division of Chemistry – Macromolecular, Supramolecular and Nano Program – Spring 2020.
- Panel Member – National Science Foundation, Division of Chemistry – Chemical Catalysis Program – Fall 2016.
- Panel Member – National Science Foundation, Division of Chemical, Bioengineering, Environmental, and Transport Systems – Catalysis and Biocatalysis Program – CAREER Awards – Fall 2014.
- Panel Member – National Science Foundation, Division of Chemical, Bioengineering, Environmental, and Transport Systems – Catalysis and Biocatalysis Program – CAREER Awards – Fall 2013.
- Co-Organizer – Advanced Metal Nanostructures for Catalysis Symposium – Fall 2012 ACS National Meeting, Philadelphia, PA, August 19-23, 2012. (with Sara E. Skrabalak)
- Co-Organizer – Structure-Function Design Strategies for Bio-enabled Materials Systems Symposium – 2012 Spring MRS National Meeting – San Francisco, CA, April 9-13, 2012. (with Valeria T. Milam, Harry Bermudez, and Rajesh R. Naik)
- Panel Member – National Science Foundation, Division of Materials Research – Biomaterials Program – January 2012.
- Panel Member – National Science Foundation, Division of Chemical, Bioengineering, Environmental, and Transport Systems – Catalysis and Biocatalysis Program – May 2011.
- Co-Organizer – 2011 Workshop on Exploring Biological Interfaces – San Juan, Puerto Rico, April 4-6, 2011. (with Rajesh R. Naik)
- Session Co-Chair – Engineering at the Biological Materials Interface – 239th ACS National Meeting, San Francisco, CA, March 21–25, 2010.
- Session Chair – Self and Directed Colloidal Assembly of Nanomaterials Symposium – 238th ACS National Meeting, Washington, D.C., August 16–20, 2009.
- Session Co-Chair – Biomaterials – International Conference on Composites and NanoEngineering, Honolulu, HI, July 26 – August 1, 2009.

Research Group Members

Postdoctoral Scholars

1. Dr. Zhenghua Tang (2012 – 2014)
 - Current employment: Assistant Professor, South China University of Technology (Guangzhou China)
2. Dr. Nicholas Bedford (2012 – 2014; joint with Dr. Rajesh R. Naik of AFRL)
 - Current employment: Researcher, University of New South Wales, Australia.
3. Dr. Anshuman Jakhmola (2008 – 2009)
 - Current employment: unknown

Graduate Students

1. Ms. Josena Jose (2024 – present)
2. Mr. Jessen Matthew (2024 – present)
3. Ms. Sraddha Thomas (2022 – present)
4. Dr. Kyle Meerbott (2021 – 2025)
 - Dissertation Title: “Study of Proteins and Peptides for Noble Metal Nanoparticle Functionalization”
 - Current employment: TBD
5. Ms. Maichong (Tilda) Xia (2019 – 2024)
 - Dissertation Title: “Biomimetic Structure and Optical Property Control of Monometallic and Bimetallic Inorganic Nanoparticle Catalysts”
 - Current employment: Teva Pharmaceuticals
6. Dr. Yuliana Perdomo (2019 – 2023)
 - Dissertation Title: “Bioconjugate Peptides for Functional Nanomaterials”
 - Current employment: Teva Pharmaceuticals
7. Dr. Vincent Zollo (2021 – 2022)
 - Dissertation Title: “Catalytic Activation of Inorganic Materials”
 - Current employment: University of Miami
8. Dr. Nermina Brlić (2018 – 2022)
 - Dissertation title: “Analysis of Peptide Modification for Adsorption of 2D Nanomaterials”

- Current employment: Grifols
9. Dr. Mary Olagunju (2015 – 2021)
 - Dissertation title: “Catalytic Activation of Nanoparticles using Light”
 - Current employment: Pfizer
 10. Dr. Atul Parab (2015 – 2020)
 - Dissertation title: “Bio-Inspired Fabrication of Two-Dimensional Nanomaterials”
 - Current employment: Pisgah Labs
 11. Dr. Catherine Munro (2015 – 2019)
 - Dissertation title: “Influences of Amino Acids and Peptide Mutations on Material Morphology and Catalysis”
 - Dean’s Dissertation Year Fellowship (2018-2019)
 - Summer graduate award (2017)
 - Current employment: Postdoctoral scholar in UAE
 12. Dr. Randy L. Lawrence (2012 – 2018)
 - Dissertation Title: “Photoswitchable Materials for Catalytic Modulation of Nanoparticles”
 - Current Employment: Johns Hopkins University
 13. Dr. Michelle A. Nguyen (2011 – 2017)
 - Dissertation Title: “Functional Nanomaterials for Environmental Applications and Bioassemblies”
 - Current Employment: Pacific Biolabs, Inc.
 14. Dr. Nicholas A. Merrill (2010 – 2015)
 - Dissertation Title: “Stability, Structure, and Reactivity of Biotemplated Metal Nanoparticles”
 - Current Employment: Cambrex
 15. Dr. Beverly D. Briggs (2010 – 2015)
 - Dissertation Title: “Peptide-Capped Nanoparticles for Catalysis and Assembly”
 - Current Employment: Osha Bergman Watanabe & Burton LLP
 - NSF IGERT Trainee (2010 – 2011)
 16. Dr. Ryan Coppage (2008 – 2013)
 - Dissertation Title: “Elucidation of Peptide Sequence Effects that Control the Activity, Size, and Function of Nanoparticles”
 - Current Employment: Instructor, University of Richmond (Richmond, VA)
 - Dissertation Year Fellowship (2012 – 2013)
 - RCTF Fellowship (2010 – 2011)

17. Dr. Rohit Bhandari (2008 – 2013)
 - Dissertation Title: “Peptide Template Effects on the Synthesis and Reactivity of Metal Nanoparticle Networks”
 - Current Employment: Corteva Agriscience
 - Best poster award – 2012 Spring MRS meeting
18. Dr. Dennis B. Pacardo (2008 – 2013)
 - Dissertation title: “Catalytic Applications of Bio-Inspired Nanomaterials”
 - Postdoctoral Training: University of North Carolina, Chapel Hill/North Carolina State University (Raleigh, NC), 2013-2016
 - Current Employment: Scholar Rock
 - Summer graduate award (2013)
 - Fast Start Award (2009)
19. Dr. Manish Sethi; Ph.D. (2007 – 2011)
 - Dissertation title: “Interactions and Effects of Biomolecules on Au Nanomaterial Surfaces”
 - Postdoctoral Training, University of North Carolina (Chapel Hill, NC), 2011-2014
 - Current Employment: Mallinckrodt Pharmaceuticals
 - Outstanding Graduate Student Research Award (2010)
 - University of Kentucky Presidential Fellowship (2010 – 2011)
 - RCTF Fellowship (2008 – 2010)
 - Fast Start Award (2008)

Undergraduate Students

1. Ms. Scarlett Miller (2025 – present)
2. Mr. Michael Banker (2024 – present)
3. Mr. Leonardo Morales (2023 – 2025)
4. Mr. Bryce Pendleton (2023 – 2024)
 - Currently employed by Thermo Fisher Scientific
5. Mr. Zachary Davis (2022 – 2023)
 - Pursuing a Ph.D. in Chemistry from the University of Pennsylvania (2023-present)
6. Mr. Aaron Ishmael (2021)
7. Mr. Robert Sangrigoli (2021 – 2022)

8. Ms. Shannon Berzak (2019 – 2020)
9. Mr. Rohan Dureja (2018 – 2020)
 - Pursuing an MD/MBA from the University of Miami (2022-present)
10. Ms. Elise Bell (2018 – 2019)
 - Pursuing a Ph.D. in chemistry at Duke University (2019 – present)
11. Mr. John T. “Tyler” Wagner (2018)
 - University of Miami REU participant
 - Pursuing a Ph.D. in chemistry at the University of Florida (2019 – present)
12. Mr. Christian Falgons (2018)
 - University of Miami REU participant
13. Ms. Emily Rabinovich (2017-2018)
14. Mr. Xavier Poole (2017)
 - University of Miami REU participant
15. Mr. Christopher Joly (2017)
 - University of Miami REU participant
16. Ms. Carla Bobé (2016)
 - University of Miami REU participant
17. Mr. Manuel Portela (2016)
 - University of Miami REU participant
18. Mr. Vincent Cenden (2016-2017)
19. Mr. Alexander Besmer (2015 – 2017)
20. Dr. Azaan Wilborne (2015 – 2018)
 - Completed Ph.D. in Biochemistry from Baylor University in 2023
 - IMSD fellow
21. Mr. Erik McKee (2015 – 2016)
22. Ms. Fatima Chagani (2014 – 2015)

23. Ms. Bianca Marquez (2014 – 2015)
24. Mr. Adham Sulliman (2013)
25. Ms. Abby Fabien (2013)
26. Mr. Kyle Merino (2013 – 2014)
27. Mr. Patrick Aurelus (2013 – 2015)
 - Presently pursuing a Ph.D. in Chemical Engineering at Columbia U. (2016-present)
28. Dr. Eric Ardman (2012 – 2013)
 - Completed an M.D. at U. Miami (2016-2020)
 - Fulbright Student Award
29. Mr. Ryan Pekarek (2012 – 2013)
 - Pursued a Ph.D. in Chemistry at UT Austin
30. Ms. Amelia Vallenilla (2012)
31. Mr. Kyle C. Kirk (2010)
32. Mr. William A. Fennell (2009 – 2010)
33. Mr. Alexander T. Meier (2009)
 - Pursued graduate studies in Pharmaceutical Sciences at UK
34. Ms. GaEun Joung (2007 – 2009)
 - Completed graduate studies in Pharmaceutical Sciences at UK (2009 – 2013)
 - Nancy J. Stafford Award (2009)
 - NSF summer REU student (2008)
 - Joint REU Program Poster Award – 1st Place Prize (2008)

High School Students

1. Ms. Jeanne B. Regidor (2015)
2. Mr. Mohammad A. Younis (2015)

3. Mr. Faraz Masoor (2015)
4. Ms. Ariela Zebede (2014)
5. Mr. Angeleo Fajardo (2014)
6. Mr. Kyle Hippolyte-Wade (2014-2015)
7. Mr. Javier Gonzalez (2014)
8. Mr. Kyle Choi (2013)
9. Mr. Thomas Wolfe (2013)
10. Mr. Christian Goodin (2012 – 2015)
11. Mr. Federico Daunert (2012)