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ACADEMIC

2012 – present **University of Colorado Denver**, Denver, CO
Department of Chemistry

- Assistant Professor

2008 – 2012 **Johns Hopkins University**, Baltimore, MD
Department of Chemistry

- Postdoctoral Fellow
- Advisor: Prof. Marc M. Greenberg

EDUCATION

2003 - 2008 **University of California, Los Angeles**, Los Angeles, CA
Department of Chemistry and Biochemistry

- Ph.D Organic Chemistry
- Advisor: Prof. Miguel A. Garcia-Garibay

1999 - 2003 **University of Utah**, Salt Lake City, Utah
Department of Chemistry

- B.S. Chemistry
- Advisor: Prof. Peter J. Stang

RESEARCH EXPERIENCE / INTERESTS

2012-current **University of Colorado Denver, Department of Chemistry**

- Study oxidative damage to RNA and its relationship to neurodegeneration and disease.
- Structural effects of oxidative stress on RNA
- Synthesis and incorporation of photoresponsive molecules into RNA and their design as sensors for small molecules.

2008-2012 **Marc M. Greenberg Research Group**, Johns Hopkins University, Department of Chemistry

- Studied the mechanisms that lead to RNA strand scission upon oxidative damage.
- Synthesized and incorporated reactive intermediate precursors into RNA and analyzed their reactivity via mass spectroscopy, gel electrophoresis and other chemical reactions.
- Studied the control/manipulation of secondary structures of modified RNA using a novel photochemical probe.

2003-2008 **Miguel A. Garcia-Garibay Research Group**, UCLA, Department of Chemistry & Biochemistry

- Developed a green chemistry methodology for the formation of molecules with adjacent quaternary centers.
- Employed solid-to-solid photoreaction as an efficient stereo- and regioselective process.
- Designed systems for scale-up procedure of photodecarbonylation using nanocrystalline suspensions in combination with a flow reactor.
- Studied rare single-crystal-to-single-crystal transformations and used X-ray crystallography to monitor reactions.

2001 - 2003 **Peter J. Stang Research Group**, University of Utah, Department of Chemistry

- Designed and synthesized supramolecular metallacyclic architectures via functionalized flexible linkers and

study their properties as sensors and storage devices.

Summer 2002 **Miguel A. Garcia-Garibay Research Group**, UCLA, Department of Chemistry & Biochemistry

- Synthesized bridged molecular gyroscopes with potential use in materials design, particularly optics and electronics.

TEACHING EXPERIENCE

- Lecturer, University of Colorado Denver: Organic Chemistry I (CHEM 3411), Organic Chemistry II (CHEM3421); Aug. 2012 – current.
- Teaching Assistant; UCLA; 10 quarters (Sep. 2003 - May, 2007).
- Designed projects and supervised graduate and undergraduate students.
- Mentored four UCLA undergraduate students: Jennifer Taing (May 2004 - Sep 2006); Alexander Buitrago (June 2004 – May 2008); Brent Martinez (Jan 2007 - May 2007); Kerrian Fuller (May 2007 – May 2008).

PUBLICATIONS

- Photochemical Control of RNA Structure by Disrupting π -Stacking. Resendiz, M. J. E.; Schön, A.; Freire, E.; Greenberg, M. M. *J. Am. Chem. Soc.* **2012**, 134, 12478-12481. Recommended article for F1000 Prime, **New Finding, Technical Advance**, posted May 14th 2013.
- Direct Strand Scission in Double Stranded RNA via a C5-Pyrimidine Radical. Resendiz, M. J. E.; Pottiboyina, V.; Sevilla, M.; Greenberg, M. M. *J. Am. Chem. Soc.* **2012**, 134, 3917-3924.
- Product and Mechanistic Analysis of the Reactivity of a C6-Pyrimidine Radical in RNA. Jacobs, A. C.; Resendiz, M. J. E.; Greenberg, M. M. *J. Am. Chem. Soc.* **2011**, 133, 5152-5159.
- Direct Strand Scission from a Nucleobase Radical in RNA. Jacobs, A. C.; Resendiz, M. J. E.; Greenberg, M. M. *J. Am. Chem. Soc.* **2010**, 132, 3668-3669. Selected for JACS Select on *JACS*^β #12, **Chemical Mechanisms in Biochemical Reactions**.
- The Missing Link Between Molecular Triplets and Spin-Polarized Free Radicals: Room Temperature Triplet States of Nanocrystalline Radical Pairs. Lebedeva, N. V.; Tarasov, V. F.; Resendiz, M. J. E.; Garcia-Garibay, M. A.; White, R. C.; Forbes, M. D. E. *J. Am. Chem. Soc.* **2010**, 132, 82-84. Highlighted in *C & EN: Better View of Solid-State Reactions*, Wilson, E. K.; *C & EN*: **2010**, 88, 26.
- Photochemical Generation and Reactivity of the 5,6-Dihydrouridin-6-yl Radical. Newman, C. A.; Resendiz, M. J. E.; Sczepanski, J. T.; Greenberg, M. M. *J. Org. Chem.* **2009**, 74, 7007-7012.
- Radical Reactions with Double Memory of Chirality (²MOC) for the Enantiospecific Synthesis of Adjacent Stereogenic Quaternary Centers in Solution: Cleavage and Bonding Faster than Radical Rotation. Resendiz, M. J. E.; Family, F.; Fuller, K.; Campos, L. M.; Khan, S. I.; Lebedeva, N. V.; Forbes, M. D. E.; Garcia-Garibay, M. A. *J. Am. Chem. Soc.* **2009**, 131, 8425-8433. Highlighted in nature.com blogs: **The Way We Were: Double Memory of Chirality**, posted on Saturday, June 27th, 2009.
- Diastereoselective synthesis and spin-dependent photodecarbonylation of di(3-phenyl-2-pyrrolidinon-3-yl)ketones: synthesis of nonadjacent and adjacent stereogenic quaternary centers. Resendiz, M. J. E.; Natarajan, A.; Garcia-Garibay, M. A. *Chem. Commun.* **2008**, 193-195.
- Unexpected Solid-State Photochemistry of an α -Thiophenyl- α' -Thiophenyl-*S,S*-dioxo-Substituted Ketone. Resendiz, M. J. E.; Taing, J.; Khan, S. I.; Garcia-Garibay, M. A. *J. Org. Chem.* **2008**, 73, 638-643.
- Photodecarbonylation of 1,3-Dithiophenyl Propanone: Using Nanocrystals to Overcome the Filtering Effect of Highly Absorbing Trace Impurities. Resendiz, M. J. E.; Taing, J.; Garcia-Garibay, M. A.; *Org. Lett.* **2007**, 9, 4351.
- Large-Scale Photochemical Reactions of Nanocrystalline Suspensions: A Promising Green Chemistry Method. Veerman, M.; Resendiz, M. J. E.; Garcia-Garibay, M. A. *Org. Lett.* **2006**, 8, 2615.
- Hammett Analysis of Photodecarbonylation in Crystalline 1,3-Diarylacetonones. Resendiz, M. J. E.; Garcia-Garibay, M. A., *Org. Lett.* **2005**, 7, 371-374.
- Self-Assembly of Flexible Supramolecular Metallacyclic Ensembles: Structures and Adsorption Properties of Their Nanoporous Crystalline Frameworks. Chatterjee, B.; Noveron, J. C.; Resendiz, M. J. E.; Liu, J.; Yamamoto, T.; Parker, D.; Cinke, M.; Nguyen, C. V.; Arif, A. M.; Stang, P. J. *J. Am. Chem. Soc.* **2004**, 126, 10645-10656.
- A Self-Assembled Supramolecular Optical Sensor for Ni(II), Cd(II), and Cr(III). Resendiz, M. J. E.; Noveron, J. C.; Disteldorf, H.; Fischer, S.; Stang, P. J. *Org. Lett.* **2004**, 6, 651-653.

AWARDS & HONORS

2013 Faculty Development Grant, University of Colorado Denver
2012 Young Upwardly Mobile Professors Grant, University of Colorado Denver
2010 *NIGMS* Research Supplement to Promote Diversity in Health-Related Research
2007 The *UCLA* Majeti-Alapati Fellowship Award for Excellence in Research
2006 – 2007 *UCLA* Fellowship for Continuing Graduate Studies
2002 *WAESO* (Western Alliance to Expand Student Opportunities) Undergraduate Research Fellowship
2001 - 2003 Summer *CARE* (Center for Academic and Research Excellence) Research Stipend

WORKSHOPS

2010 *ACS*: Postdoc to Faculty Workshop
2010 Advancing Biomedical Research Workforce Diversity: *NIGMS* Workshop for Postdocs Transitioning to Independent Positions
2009 Johns Hopkins Medicine, Research Leadership Course
2009 Natural Products & Biomedical Science Symposium, *NIH*, Bethesda, MD.
2009 Poster Judge, 16th Annual Undergraduate and Graduate Research Symposium, Morgan State University
2007 *HUTEP* (Howard University and Texas El Paso) Preparing Future Faculty Summer Institute
2005 International Center for Materials Research (*ICMR*) Summer School, Santa Barbara, California
2005 *ACS* Summer School on Green Chemistry, Washington, D.C.

PRESENTATIONS

2013 *Metropolitan State University of Denver*, Denver Metro Chem Scholars, (RNA: Oxidative damage, structure and reactivity), Denver, CO
2012 *Morgan State University*, Interdisciplinary Seminar Series, Spring (Photochemical Control of RNA Structure, Working at the Bio-organic Interface), Baltimore, MD
2010 *JHU/CBI* Annual Retreat (Formation of the 5,6-dihydrouridin-6-yl radical in RNA results in direct strand scission)
2010 *ACS*: Oral Presentation (Formation of the 5,6-dihydrouridin-6-yl radical in RNA results in direct strand scission)
2009 *JHU/CBI* Annual Retreat (Radical Cleavage in RNA: What a Difference a Hydroxyl Group Makes)
2007 *ACS*: Poster Presentation (Decarbonylation of Phenyl-pyrrolidinones in the Solid-State and Advances towards Total Synthesis of Natural Products), Boston, MA
2007 *ACS*: Poster Presentation (Decarbonylation of Phenyl-pyrrolidinones in the Solid-State as an Entry to the Total Synthesis of Natural Products), Chicago, IL
2007 *Fred Wudl Symposium*: Poster Presentation (Solid-State Transformations of thiophene containing ketones)
2005 *PACIFICHEM*: Poster Presentation (Decarbonylation of heterocyclic tetra-Substituted ketones in the crystalline solid-state)
2005 *ACS*: Poster Presentation (Hammett Analysis of Photodecarbonylation in Crystalline 1,3-Diarylacetones)
2004 *SACNAS*: Poster Presentation (Hammett Analysis of Photodecarbonylation in Crystalline 1,3-Diarylacetones)
2002 *UCLA CARE* Science Poster Day

MEMBERSHIPS/AFFILIATIONS

ACS – American Chemical Society
AAS – American Association for the Advancement of Science
SACNAS – Society for Advancement of Chicanos and Native American in Science
UCCC – University of Colorado Cancer Center
CNS - Center for Neuroscience University of Colorado Anschutz Medical Campus