

## DINA C. MERRER

Dean of Science and Professor of Chemistry  
Barnard College  
3009 Broadway  
New York, NY 10027-6598  
Phone: 212-854-9631  
Email: [dmerrer@barnard.edu](mailto:dmerrer@barnard.edu)

### Degrees in Higher Education

- May 1999* Ph.D., Organic Chemistry, Rutgers University, New Brunswick, NJ  
Absolute Kinetics of Selected Singlet Carbenes: Rearrangement in Excited States,  
Quantum Mechanical Tunneling, and Bystander Effects  
Adviser: Robert A. Moss
- May 1994* B.A., Chemistry (*magna cum laude*, Phi Beta Kappa), Smith College, Northampton, MA  
Modifications of Tin Oxide Semiconductor Electrodes with Functionalized Porphyrins  
Adviser: Sharon M. Palmer

### Professional Experience in Higher Education

- July 2015-present* **Professor of Chemistry**, Department of Chemistry, Barnard College, Columbia University, New York, NY  
**Ann Whitney Olin Professor**, 2021-present  
**Tow Professor**, 2015-2016  
**Chair**, July 2021-June 2022, July 2015-Jan. 2017, July 2012-Dec. 2014  
**Vice Chair**, July 2017-June 2018, Jan.-June 2012
- July 2023-present* **Dean of Science**, Barnard College, Columbia University, New York, NY
- July 2022-June 2023* **Visiting Research Affiliate**, Department of Chemistry, Smith College, Northampton, MA
- July 2019-June 2022* **Co-Chair**, Middle States Self-Study and Reaccreditation, Barnard College, Columbia University, New York, NY
- January-May 2015* **Visiting Research Scholar**, Department of Chemistry, University of California – Los Angeles, CA
- July 2009-June 2015* **Associate Professor of Chemistry**, Department of Chemistry, Barnard College, Columbia University, New York, NY  
**Tow Associate Professor**, 2014-15
- August 2001-June 2009* **Assistant Professor of Chemistry**, Department of Chemistry, Barnard College, Columbia University, New York, NY
- July 1999-July 2001* **OSU Postdoctoral Fellow**, Department of Chemistry, The Ohio State University, Columbus, OH  
*Advisor: Professor Matthew S. Platz*  
Measured the fast kinetics of novel triplet carbenes by nanosecond laser flash photolysis and time-resolved infrared spectroscopies, cryogenic matrix techniques, and ab initio computational methods; synthesized bifunctional molecules for use as covalent links between polymeric layers in organic light-emitting diodes.

- Sept. 1994-May 1999 **Graduate Research Fellow**, Department of Chemistry, Rutgers University, New Brunswick, NJ  
*Advisor: Professor Robert A. Moss*  
Synthesized benzyl and alkylhalodiazirines and acetoxydiazirines; photochemically generated carbenes and studied their fast kinetics by laser flash photolysis; determined absolute rates and Arrhenius parameters for intramolecular and intermolecular carbenic reactions by laser flash photolysis.
- May 1993-May 1994 **Undergraduate Research Assistant**, Department of Chemistry, Smith College, Northampton, MA  
*Advisor: Professor Sharon M. Palmer*  
Synthesized and studied electrochemistry of functionalized porphyrins; derivatized semiconductor electrodes with porphyrins by organic coupling techniques.

### Academic and Professional Honors (at Barnard)

- 2022 Elizabeth S. Boylan Award, Barnard College  
2022, 2019, 2017 Honorable Mention, Emily Gregory Award, Barnard College  
2015-2016 Tow Professor, Barnard College  
2014-2015 Tow Associate Professor, Barnard College  
2006 Gladys Brooks Teaching Award, Barnard College

### Courses Taught

- Main courses* CHEM BC 3230 Organic Chemistry I (lecture)  
CHEM BC 3231 Organic Chemistry II (lecture)  
CHEM BC 3280 Advanced Organic Chemistry (lecture)
- Research* 48 students since 2001  
CHEM BC 3903, 3904 Senior Honors Thesis (lab)  
CHEM BC 3597, 3599 Problems in Chemistry (lab)
- Other courses* CHEM BC 1003 Chemical Problem Solving (lecture/seminar)  
CHEM BC 3232 Intermediate General Chemistry/Chem IV (lecture)  
CHEM BC 3328 Modern Techniques of Organic Chemistry (lab)  
CHEM BC 3338/40 Quantitative and Instrumental Analysis (lab)  
CHEM BC 3348 Advanced Chemical Synthesis (lab)  
CHEM BC 3368 Physical Chemistry II (lab)

### Publications and Creative Work (undergraduate co-workers underlined)

#### Journal Articles

- (14) Urquilla, A.; Merrer, D. C.; Sumner, R.; Denton, R. W. Synthesis and Biological Activity of 2-(2-Amino-2-Phenylethyl)-5-Oxotetrahydrofuran-2-carboxylic acid: A Microwave-Assisted 1,3-Dipolar Cycloaddition Approach, *Synlett* **2021**, 32, 1735-1740. DOI: 10.1055/a-1560-1767
- (13) Kempf, A.; Singh, J.; Merrer, D. C.; Denton, R. W. Microwave-Assisted Synthesis of Lycoperdic Acid via The 1,3-Dipolar Cycloaddition of Methylene Dimethyl Glutarate and Nitrene Derived (-)Menthone, *Heterocycles* **2020**, 100, 241-252. DOI: 10.3987/COM-19-14173
- (12) Hare, S. R.; Orman, M.; Dewan, F.; Dalchand, E.; Buzard, C.; Ahmed, S.; Tolentino, J. C.; Sethi, U.; Terlizzi, K.; Houferak, C.; Stein, A. M.; Stedronsky, A.; Thamattoor, D. M.; Tantillo, D. J.; Merrer, D. C. Experimental and Computational Mechanistic Investigation of Chlorocarbene Additions to Bridgehead Carbene-anti-Bredt Systems: Noradamantylcarbene-Adamantene and Adamantylcarbene-Homoadamantene, *J. Org. Chem.* **2015**, 80, 5049-5065.

- (11) Merrer, D. C.; Doubleday, C. Dynamic Control of Dichlorocarbene Addition to Cyclopropene, *J. Phys. Org. Chem.* **2011**, *24*, 947-951.
- (10) Mo, X. Y.; Bernard, S. E.; Khrapunovich, M.; Merrer, D. C. A Computational Study of Chlorocarbene Additions to Cyclooctyne, *J. Org. Chem.* **2008**, *73*, 8537-8544.
- (9) Khrapunovich, M.; Zelenova, E.; Seu, L.; Sabo, A. N.; Flaherty, A.; Merrer, D. C. Regioselectivity and Mechanism of Dihalocarbene Addition to Benzocyclopropene, *J. Org. Chem.* **2007**, *72*, 7574-7580.
- (8) Merrer, D. C.; Rablen, P. R. Dichlorocarbene Addition to Cyclopropenes: A Computational Study, *J. Org. Chem.* **2005**, *70*, 1630-1635.
- (7) Merrer, D. C.; Ozcetinkaya, S.; Shinnar, A. E. Experimental and Theoretical Ultraviolet Spectra of Haloindoles, *Tetrahedron Lett.* **2004**, *45*, 4899-4902.
- (6) Moss, R. A.; Johnson, L. A.; Merrer, D. C.; Lee, G. E. Jr. Carbenes as Substrates: Bimolecular Fragmentation of Alkoxychlorocarbenes, *J. Am. Chem. Soc.* **1999**, *121*, 5940-5944.
- (5) Moss, R. A.; Merrer, D. C. Structure-Reactivity Dependence in the Rearrangements of a Family of Alkylacetoxycarbenes, *Tetrahedron Lett.* **1998**, *39*, 8067-8070.
- (4) Merrer, D. C.; Moss, R. A.; Liu, M. T. H.; Banks, J. T.; Ingold, K. U. Benzylchlorocarbene: Origins of Arrhenius Curvature in the Kinetics of the 1,2-H Shift Rearrangement, *J. Org. Chem.* **1998**, *63*, 3010-3016.
- (3) Moss, R. A.; Maksimovic, L.; Merrer, D. C. Benzylfluorocarbene: Reactions and Kinetics, *Tetrahedron Lett.* **1997**, 7049-7052.
- (2) Moss, R. A.; Merrer, D. C. Absolute Kinetics of Mesitylmethylchlorocarbene Reactions, *J. Chem. Soc., Chem. Commun.* **1997**, 617-618.
- (1) Moss, R. A.; Ma, W.; Merrer, D. C.; Xue, S. Conversion of 'Obstinate' Nitriles to Amidines by Garigipati's Reaction, *Tetrahedron Lett.* **1995**, 8761-8764.

#### Book Chapters

- (3) D'Angelo, H.; McGuire, K. L.; Gillikin, C. M.; Merrer, D. C. Evaluating the Impact of Oil Palm Agriculture and Logging on Soil Microbial Communities, in *Land-use Change Impacts on Soil Processes*; Brearley, F. Q.; Thomas, A. D., Eds.; CABI: U.K., 2015.
- (2) Merrer, D. C.; Houk, K. N.; Xu, L. Dynamics in Carbene Reactions, in *Contemporary Carbene Chemistry*; Moss, R. A.; Doyle, M. P., Eds.; Wiley: Hoboken, NJ, 2013, pp 131-165.
- (1) Merrer, D. C.; Moss, R. A. Kinetics of Intramolecular Carbene Reactions, in *Advances in Carbene Chemistry*; Brinker, U. H., Ed.; JAI Press: Greenwich, CT, 2001, Vol. 3, pp 53-113.

#### Other

Merrer, D. C.; Platz, M. S. Preface to Special Issue, *J. Phys. Org. Chem.* **2011**, *24*, 865.

#### Invited Talks

- (34) Untangling the Mechanisms of Chlorocarbene Additions to Strained Bonds, Excellence in Organic Chemistry and Chemical Biology at Primarily Undergraduate Institutions, Middle Atlantic Regional Meeting of the American Chemical Society, University of Delaware (virtual), June 2021.
- (33) Good Behavior is Overrated: Carbene Additions to Strained Bonds, New York University, September 2019.
- (32) Mechanisms of Chlorocarbene Additions to Strained Bonds, 8<sup>th</sup> Heron Conference on Reactive Intermediates and Unusual Molecules, Ayers Rock (Uluru), Australia, June 2019.
- (31) Untangling the Mechanisms of Chlorocarbene Additions to Strained Bonds, Reaction Mechanisms Conference, Vancouver, BC, June 2018.
- (30) Carbene Whisperers: What Carbene Additions to Strained Bonds Tell Us About Reactivity, Oesper Award Symposium, University of Cincinnati, November 2017.
- (29) Good Behavior is Overrated: Carbene Additions to Strained Bonds, International Symposium on Reactive Intermediates and Unusual Molecules, Sorrento, Italy, June 2017.
- (28) The Valley of Fear(lessness): Carbene Mysteries, James Flack Norris Award Symposium, 253<sup>rd</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, San Francisco, CA, April 2017.
- (27) Good Behavior is Overrated: Carbene Additions to Strained Bonds, Swarthmore College, February 2017.

- (26) Mechanisms of Carbene Additions to Strained C-C  $\pi$  Bonds, Symposium on Reactive Intermediates and Unusual Molecules, International Chemical Congress of Pacific Basin Societies (Pacifichem), Honolulu, HI, December 2015.
- (25) Carbene Reactivity: Who's in Charge?, Houk Group Meeting, University of California, Los Angeles, CA, March 2015.
- (24) Carbene Reactivity: Who's in Charge?, James Flack Norris Award Symposium, 247<sup>th</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, Dallas, TX, March 2014.
- (23) Halocarbene Additions to Strained C-C  $\pi$  Bonds: Mechanistic Surprises, Mesilla Chemistry Workshop: Tribute to Sally Chapman on the Studies of the Chemical Dynamics of Energy Transfer and Chemical Reactions, Mesilla, NM, February 2014.
- (22) Halocarbene Additions to Strained C-C  $\pi$  Bonds: Mechanistic Surprises, Reaction Mechanisms Conference, Columbia, MO, June 2012.
- (21) Dynamic Control of Carbene Reactions to Strained C-C Bonds, CUNY – York College, March 2012.
- (20) Dynamic Control of Carbene Reactions to Strained C-C Bonds, Brigham Young University, November 2011.
- (19) Dynamic Control of Carbene Reactions to Strained C-C Bonds, Symposium on Reactive Intermediates and Unusual Molecules, International Chemical Congress of Pacific Basin Societies (Pacifichem), Honolulu, HI, December 2010.
- (18) Carbenes Behaving Dynamically: Additions to Strained Bonds, Mount Holyoke College, September 2009.
- (17) Expect the Unexpected: Carbene Additions to Strained Systems, University of Nevada, Reno, NV, September 2008.
- (16) Carbenes Behaving Badly: Violating Transition State Theory, NSF Workshop on Physical Organic Chemistry, Lake Tahoe, CA, September 2008.
- (15) Expect the Unexpected: Carbene Additions to Strained Systems, Columbia University, New York, NY, March 2008.
- (14) Expect the Unexpected: Carbene Additions to Strained Rings, Gordon Research Conference on Physical Organic Chemistry, Plymouth, NH, June 2007.
- (13) Mechanisms of Carbene Addition to Cyclopropenes: Dynamics and Strain, Brooklyn College, Brooklyn, NY, May 2007.
- (12) Mechanisms of Carbene Addition to Cyclopropenes: Dynamics and Strain, Rutgers University, New Brunswick, NJ, May 2007.
- (11) Dynamics in the Mechanisms of Carbene Additions to Strained C-C Bonds, 233<sup>rd</sup> National Meeting of the American Chemical Society, Chicago, IL, March 2007.
- (10) Carbenes Behaving Dynamically: Additions to Cyclopropenes, Colby College, Waterford, ME, February 2007.
- (9) Mechanisms of Carbene Addition to Cyclopropenes: Dynamics and Strain, University of Maryland, College Park, MD, October 2006.
- (8) Mechanisms of Carbene Addition to Cyclopropenes: Dynamics and Strain, Johns Hopkins University, Baltimore, MD, October 2006.
- (7) Regioselectivity and Mechanism of :CX<sub>2</sub> Addition to Benzocyclopropene, Reaction Mechanisms Conference, College Park, MD, June 2006.
- (6) Chemistry + Carbenes = Career, General Electric Fellowship Program for minority students in the sciences, Barnard College, New York, NY, April 2006.
- (5) Mechanisms of Carbene Additions to Cyclopropenes: Dynamics and Strain, Columbia University, New York, NY, March 2006.
- (4) Carbene Addition to Cyclopropenes: Mechanistic Reconsiderations, Long Island University, Brooklyn, NY, October 2005.
- (3) Carbenes Behaving Dynamically: Addition to Cyclopropene, Smith College, Northampton, MA, April 2005.
- (2) Carbenes Behaving Dynamically, Organic Chemistry Celebration, Barnard College, New York, NY, February 2005.
- (1) A Mechanistic Mystery: Carbene Addition to Cyclopropenes, Western Connecticut State University, Danbury, CT, April 2003.

#### Conference Presentations

- (30) <CANCELED> [Rana, S. K.](#); [Lin, C.](#); [Orman, E.](#); [Gong, O.](#); [Simpson, S.](#); Merrer, D. C. Rotational Barriers of Substituted  $\alpha,\beta$ -Unsaturated Diarylketones, 259<sup>th</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, Philadelphia, PA, March 2020.
- (29) [Glaser, K. K.](#); [Rana, S. K.](#); [Simpson, S.](#); [Nadeem, A.](#); [Saperstein, Y.](#); [Urquilla, A.](#); Merrer, D. C. Continuing Puzzle of the Mechanism of Phenylchlorocarbene Addition to Dibenzocyclooctyne, 257<sup>th</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, Orlando, FL, March 2019.
- (28) [Nadeem, A.](#); [Urquilla, A.](#); [Saperstein, Y.](#); Merrer, D. C. Untangling the Mechanism of Chlorocarbene Additions to Dibenzocyclooctyne, 255<sup>th</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, New Orleans, LA, March 2018.
- (27) [Nadeem, A.](#); [Urquilla, A.](#); [Saperstein, Y.](#); [Estes, V.](#); [Scorese, A.](#); [Dalchand, E.](#); [Tsunno, S.](#); Merrer, D. C. Reactivity and Dynamics of Chlorocarbene Additions to Dibenzocyclooctyne, 253<sup>rd</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, San Francisco, CA, April 2017.
- (26) [Estes, V.](#); [Scorese, A.](#); [Nadeem, A.](#); [Urquilla, A.](#); [Dalchand, E.](#); [Tsunno, S.](#); Merrer, D. C. Mechanism of Chlorocarbene Additions to Diarylcyclooctynes, 251<sup>st</sup> National Meeting of the American Chemical Society, Division of Chemical Education, San Diego, CA, March 2016.
- (25) [Tsunno, S.](#); [Yang, Z.](#); [Dalchand, E.](#); [Estes, V.](#); [Nadeem, A.](#); [Urquilla, A.](#); [Houk, K. N.](#); Merrer, D. C. Mechanisms and Dynamics of Chlorocarbene Additions to Diarylcyclooctynes, Gordon Research Conference on Physical Organic Chemistry, Plymouth, NH, June 2015.
- (24) [Dalchand, E.](#); [Tsunno, S.](#); [Scorese, A.](#); [Francisco, K.](#); [Buzard, C.](#); Merrer, D. C. Phenylchlorocarbene Additions to Diarylcyclooctynes and Diarylcyclooctenes, 249<sup>th</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, Denver, CO, March 2015.
- (23) [Dalchand, E.](#); [Buzard, C.](#); [Tsunno, S.](#); [Ahmed, S.](#); [Scorese, A.](#); [Francisco, K.](#); [Dewan, F.](#); [Terlizzi, K.](#); [Orman, M.](#); [Thamattoor, D. M.](#); Merrer, D. C. Phenylchlorocarbene Additions to Strained C-C  $\pi$  Systems: Mechanisms and Kinetics, Reaction Mechanisms Conference, Davis, CA, June 2014.
- (22) [Dalchand, E.](#); [Ahmed, S.](#); [Buzard, C.](#); [Tsunno, S.](#); [Dewan, F.](#); [Terlizzi, K.](#); [Orman, M.](#); [Thamattoor, D. M.](#); Merrer, D. C. Mechanisms and Kinetics of Phenylchlorocarbene Additions to Adamantene and Adamantylcarbene, 247<sup>th</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, Dallas, TX, March 2014.
- (21) [Dewan, F.](#); [Houferak, C.](#); [Terlizzi, K.](#); [Orman, M.](#); Merrer, D. C. Photochemistry of Chlorocarbene Additions to Noradamantylidiazirine: Mechanistic Investigations, 245<sup>th</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, New Orleans, LA, April 2013.
- (20) [Rutkovskaya, V.](#); [Stein, A.](#); [Orman, M.](#); [Weena, U.](#); Merrer, D. C. Halocarbene Additions to Strained C-C  $\pi$  Bonds: Mechanistic Surprises, 243<sup>rd</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, San Diego, CA, March 2012.
- (19) [Orman, M.](#); [Tolentino, J.](#); [Weena, U.](#); [Rutkovskaya, V.](#); [MacArdle, S.](#); Merrer, D. C. Reaction Dynamics and Other Mechanistic Possibilities in Carbene Additions to Strained C-C  $\pi$  Bonds, Gordon Research Conference on Physical Organic Chemistry, Plymouth, NH, June 2011.
- (18) [Sheridan, M.](#); [Orman, M.](#); [Tolentino, J.](#); [Weena, U.](#); [Stein, A.](#); Merrer, D. C. Intermolecular Chemistry of Dichlorocarbene Additions to Strained C-C  $\pi$  Bonds – Finding the Dynamics Threshold, 241<sup>st</sup> National Meeting of the American Chemical Society, Division of Chemical Education, Anaheim, CA, March 2011.
- (17) [Sheridan, M.](#); [Orman, M.](#); [Weena, U.](#); [Suen, L.](#); [Tolentino, J.](#); Merrer, D. C. Dihalocarbene Additions to Strained C-C Bonds. Reaction Mechanisms Conference, Amherst, MA, June 2010.
- (16) [Suen, L.](#); [Tolentino, J.](#); [Mo, X. Y.](#); [Sheridan, M.](#); [Zaleski, S.](#); Merrer, D. C. Halocarbene Additions to Strained Cyclic  $\pi$  and  $\sigma$  C-C Bonds, 239<sup>th</sup> National Meeting of the American Chemical Society Division of Organic Chemistry, San Francisco, CA, March 2010.
- (15) [Mo, X. Y.](#); [Schloss, J.](#); [Suen, L.](#); [Zaleski, S.](#); [Sheridan, M.](#); [Tolentino, J.](#); [Weena, U.](#); Merrer, D. C. Who's in Charge? Halocarbene Additions to Strained C-C Bonds. International Symposium on Reactive Intermediates and Unusual Molecules, Prague, Czech Republic, July 2009.
- (14) [Mo, X. Y.](#); [Schloss, J.](#); [Suen, L.](#); [Zaleski, S.](#); Merrer, D. C. Dynamical Control of Intermolecular Carbene Reactions. 237<sup>th</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, Salt Lake City, UT, March 2009.
- (13) [Mo, X. Y.](#); [Bernard, S. E.](#); [Napolitano, D.](#); [Suski, K.](#); [Khrapunovich, M.](#); Merrer, D. C. Mechanistic Investigation of Halocarbene Additions to Cyclooctyne. Reaction Mechanisms Conference, Chapel Hill, NC, June 2008.

- (12) Napolitano, D.; Ortiz, S.; Suski, K.; Khrapunovich, M.; Guide, M.; Merrer, D. C. Halocarbene Additions to Strained Cyclic C-C  $\pi$  and  $\sigma$  Bonds. 235<sup>th</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, New Orleans, LA, April 2008.
- (11) Bernard, S. E.; Napolitano, D. C.; Suski, K.; Khrapunovich, M.; Merrer, D. C. Mechanisms of Halocarbene Additions to Cyclooctyne: An Experimental and Theoretical Investigation. 233<sup>rd</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, Chicago, IL, March 2007.
- (10) Bernard, S. E.; Merrer, D. C. Computational Study of Chlorocarbene Addition to Cyclooctyne. Mercury Conference on Computational Chemistry, Clinton, NY, July 2006.
- (9) Khrapunovich, M.; Zelenova, E.; Flaherty, A.; Seu, L.; Sabo, A. N.; Merrer, D. C. Regioselectivity and Mechanism of :CX<sub>2</sub> Addition to Benzocyclopropene. Reaction Mechanisms Conference, College Park, MD, June 2006.
- (8) Nicolas, C. I.; Merrer, D. C.; Addition of Dihalocarbenes to Benzyl[1.1.1]propellane. 231<sup>st</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, Atlanta, GA, March 2006.
- (7) Merrer, D. C.; Doubleday, C. E., Jr. Dynamics of Carbene Addition to Cyclopropene. 2005 International Chemical Congress of Pacific Basin Societies (Pacifichem), Honolulu, HI, December 2005.
- (6) Khrapunovich, M.; Zelenova, E.; Flaherty, A.; Seu, L.; Sabo, A. N.; Merrer, D. C. Regioselectivity and Mechanism of :CX<sub>2</sub> Addition to Benzocyclopropene. 2005 Gordon Conference on Physical Organic Chemistry, Plymouth, NH, June 2005.
- (5) Merrer, D. C.; Zelenova, E.; Khrapunovich, M.; Huang, D.; Seu, L.; Sabo, A. N. Singlet Carbene Additions to Strained Benzannelated Rings. 227<sup>th</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, Anaheim, CA, March 2004.
- (4) Zelenova, E.; Merrer, D. C.; Addition of Singlet Carbenes to Benzocyclopropene. 225<sup>th</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, New Orleans, LA, March 2003.
- (3) Merrer, D. C. Dichlorocarbene Addition to Cyclopropenes: A Computational Study. 225<sup>th</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, New Orleans, LA, March 2003.
- (2) Merrer, D. C.; Flaherty, A. Theoretical Study of Dichlorocarbene Addition to Cyclopropenes. Reaction Mechanisms Conference, Columbus, OH, July 2002.
- (1) Merrer, D. C.; Moss, R. A. Bystander Effects in Related Acetoxycarbenes. 216<sup>th</sup> National Meeting of the American Chemical Society, Division of Organic Chemistry, Boston, MA, August 1998.

## Research Grants

### Proposals Under Review

*Submitted Jan. 2026* PI, National Institutes of Health, NIGMS-1UC2GM162921-01, \$2,952,906 (5 years)  
BRE SPAD at Barnard College: Strengthening Biomedical Research Capacity

### Active Grants

*Jan. 2025-Oct. 2028* Institutional endorser, Beckman Foundation, Beckman Scholars Program, \$156,000  
Barnard 2025 Beckman Scholars Program (PI Jennifer Mansfield – Biology)

### Prior Grants

*Sept. 2016-August 2022* PI, National Science Foundation, CHE-1566361, \$310,000  
RUI: Mechanisms, Kinetics, and Dynamics of Carbene Additions to Diarylcyclooctynes

*Sept. 2016-August 2018* PI, Barnard College Presidential Research Award, \$50,000  
Collaborations in Experimental and Computational Chemical Detective Work:  
Determining Rogue Organic Reactions

*July 2012-August 2016* PI, Petroleum Research Fund, American Chemical Society, 52099-UR4, \$65,000  
Mechanisms and Dynamics of Carbene Additions to Anti-Bredt Olefins

<i>January 2015- July 2015</i>	PI, Barnard College Minigrant, \$8,000 Dynamics of Carbene Additions to Aryl Cyclooctynes
<i>June 2009- September 2014</i>	PI, National Science Foundation, CHE-0844034, \$283,626 Dynamic Control of Electrophilic Carbene Additions to Strained Cyclic C-C Bonds
<i>October 2011- October 2013</i>	PI, National Center for Supercomputing Applications, TG CHE-110091, 1.1M SU Dynamics of Carbene Additions to Benzocyclopropene
<i>August 2010- August 2012</i>	PI, National Center for Supercomputing Applications, TG CHE-100133, 50,000 SU Reaction Dynamics of Dichlorocarbene Additions to Cyclopropenes
<i>May 2010-April 2013</i>	Co-PI, National Science Foundation, CHE-0959177, \$166,668 MRI-R <sup>2</sup> : Acquisition of UV-Vis-NIR, FT-IR, and Fluorescence Spectrometric Instrumentation Barnard Chemistry Department grant (PI, Marisa Buzzeo; co-PIs Christian Rojas, John Magyar, Alison Williams)
<i>Sept. 2005- August 2009</i>	PI, National Science Foundation, CHE-0517876, \$201,000 Mechanisms of Electrophilic Carbene Additions to Strained Cyclic C-C Bonds
<i>March 2003- March 2006</i>	Co-PI, National Science Foundation, CHE-0234660, \$90,049 A High Resolution GC/MS/FID for Undergraduate Research in Chemistry
<i>June 2002- June 2004</i>	PI, Cottrell College Science Award, Research Corporation, CC5551, \$35,000 Relative and Absolute Kinetic Studies of Stable Nucleophilic Carbenes
<i>May 2002- August 2004</i>	PI, Petroleum Research Fund, American Chemical Society, 37969-GB4, \$35,000 Mechanisms of Intramolecular Ring Expansions: Additions of Carbenes to Strained Cyclic Systems
<i>May 2002-May 2003</i>	PI, National Center for Supercomputing Applications, 10,000 cpu hours Mechanisms of Carbene Additions to Strained Cyclic Systems
<i>June 2002- August 2002</i>	PI, New York Science Education Program Summer Undergraduate Fellowship to Alexis N. Sabo (BC '03), \$4,000 The Mechanism of Electrophilic Carbene Addition to Benzocyclopropene: Concerted or Stepwise?

## Service

### Service to Barnard College

<i>2023-present</i>	Dean of Science
<i>2019-2022</i>	Co-chair, Middle States Self-Study Committee
<i>2021-22, 2012- Jan. 2017</i>	Chair, Chemistry Department
<i>2017-2019</i>	Committee on Appointments, Tenure, and Promotion
<i>2018-2019</i>	Advisory Search Committee, Vice-President for Diversity, Equity, and Inclusion
<i>2018-2019</i>	Vice-chair, Chemistry Department
<i>2016-2018, 2008-2011, 2003-2004</i>	Committee on Instruction
<i>2016-2017</i>	Barnard College Presidential Task Force on Diversity and Inclusion
<i>Fall 2016</i>	Barnard College Chair of Academic Department Chairs
<i>2014-2017</i>	Faculty Finance and Resources Committee (FFRC)
<i>2014-2017</i>	Joint Faculty-Administrators Benefits Committee (JFAB)

