O. Maduka Ogba, Ph.D | Assistant Professor of Chemistry | Chapman University
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SUMMARY

Computational organic chemist with documented experience in designing, conducting, and securing funding for research with undergraduate students, and in employing innovative pedagogical approaches to teaching college-level chemistry courses.

PROFESSIONAL APPOINTMENTS

Chapman University, Orange, CA

Assistant Professor of Chemistry — **2018 – Present**
- **Research:** Lewis acid/base catalysis, reaction mechanisms
- **Teaching:** Organic chemistry, computational chemistry

Pomona College, Claremont, CA

Robbins Postdoctoral Fellow — **2016 – 2018**
- **Research:** Spectroscopy, isotope effects
- **Teaching:** Organic, general, and computational chemistry
- **Advisor:** Prof. Daniel J. O'Leary

EDUCATION

Oregon State University

Ph.D. in Chemistry — **2011 – 2016**
- **Dissertation:** Towards the Routine Computational Investigation of Complex Organocatalysis and Reaction Processes
- **Advisor:** Prof. Paul Ha-Yeon Cheong

Trinity University

B.S. in Computer Science (Minor in Chemistry) — **2007 – 2011**
- **Thesis:** Applying the Diversity Map, a Visualization Technique, to the Protein Data Bank
- **Advisors:** Profs. Mark Lewis and Laura Hunsicker-Wang

PUBLICATIONS

Undergraduate co-authors underlined * = corresponding author designation

19. Janda, B. A.; Tran, J. A.; Chang, D. K.; Nerhood, G. C.; **Ogba, O. M.;*** Liberman-Martin, A. L.* Carbodiimide and Isocyanate Hydroboration by a Cyclic Carbodiphosphorane Catalyst. *Chem.- Eur. J.* **2023**, *Accepted Article*, https://doi.org/10.1002/chem.202303095. Pre-print: DOI: 10.26434/chemrxiv-2023-jk33z.
18. Han, B.; Khasnavis, S. R.; Nwerem, M.; Bertagna, M.; Ball, N. D.; **Ogba, O. M.*** Calcium Bistriflimide-Mediated Sulfur(VI)–Fluoride Exchange (SuFEx): Mechanistic Insights toward Instigating Catalysis. *Inorg. Chem.* **2022**, *61* (25), 9746–9755. https://doi.org/10.1021/acs.inorgchem.2c01230.
17. Kolahdouzan, K.; **Ogba, O. M.**; O'Leary, D. J.* ^{1}H NMR Studies of Intramolecular OH/OH Hydrogen Bonds via Titratable Isotope Shifts. *J. Org. Chem.* **2022**, *87* (3), 1732–1744. https://doi.org/10.1021/acs.joc.1c01910.
16. Perkins, A.; Tudorica, D. A.; Teixeira, R. D.; Schirmer, T.; Zumwalt, L.; **Ogba, O. M.**; Cassidy, C. K.; Stansfeld, P. J.; Guillemin, K. A Bacterial Inflammation Sensor Regulates C-Di-GMP Signaling, Adhesion, and Biofilm Formation. *Mbio* **2021**, *12* (3), e00173-21. https://doi.org/10.1128/mbio.00173-21.
15. Elliott, S. J.; **Ogba, O. M.**; Brown, L. J.; O'Leary, D. J.* An Examination of Factors Influencing Small Proton Chemical Shift Differences in Nitrogen-Substituted Monodeuterated Methyl Groups. *Symmetry* **2021**, *13*, 1610. https://doi.org/10.3390/sym13091610.

14. Zumwalt, L.; Perkins, A.; **Ogba, O. M**.* Mechanism and Chemoselectivity for HOCl-Mediated Oxidation of Zinc-Bound Thiolates. *Chemphyschem* **2020**, *21* (21), 2384–2387. https://doi.org/10.1002/cphc.202000634.
13. Liberman-Martin, A. L.*; **Ogba, O. M**.* Midsemester Transition to Remote Instruction in a Flipped College-Level Organic Chemistry Course. *J Chem Educ* **2020**, *97* (9), 3188–3193. https://doi.org/10.1021/acs.jchemed.0c00632.
12. **Ogba, O. M.**; Liu, Z.; O'Leary, D. J.* Vibrational Analysis of a Rate-Slowing Conformational Kinetic Isotope Effect. *Tetrahedron* **2019**, *75* (5), 545–550. https://doi.org/10.1016/j.tet.2018.12.051.
11. Kolahdouzan, K.; **Ogba, O. M.**; O'Leary, D. J.* 1H and 13C NMR Assignments for (N-Methyl)-(−)-(α)-isosparteinium Iodide and (N-Methyl)-(−)-sparteinium Iodide. *Magn Reson Chem* **2019**, *57* (1), 55–64. https://doi.org/10.1002/mrc.4792.
10. Titaley, I. A.; Walden, D. M.; Dorn, S. E.; **Ogba, O. M.**; Simonich, S. L. M.; Cheong, P. H.-Y. *Evaluating Computational and Structural Approaches to Predict Transformation Products of Polycyclic Aromatic Hydrocarbons. *Environ Sci Technol* **2018**, *53* (3), 1595–1607. https://doi.org/10.1021/acs.est.8b05198.
9. **Ogba, O. M.**; Warner, N. C.; O'Leary, D. J.; Grubbs, R. H.* Recent Advances in Ruthenium-Based Olefin Metathesis. *Chem Soc Rev* **2018**, *47* (12), 4510–4544. https://doi.org/10.1039/c8cs00027a.
8. Titaley, I. A.; **Ogba, O. M.**; Chibwe, L.; Hoh, E.; Cheong, P. H.-Y.;* Simonich, S. L. M.* Automating Data Analysis for Two-Dimensional Gas Chromatography/Time-of-Flight Mass Spectrometry Non-targeted Analysis of Comparative Samples. *J Chromatogr A* **2018**, *1541*, 57–62. https://doi.org/10.1016/j.chroma.2018.02.016.
7. **Ogba, O. M.**; Elliott, S. J.; Kolin, D. A.; Brown, L. J.; Cevallos, S.; Sawyer, S.; Levitt, M. H.; O'Leary, D. J.* Origins of Small Proton Chemical Shift Differences in Monodeuterated Methyl Groups. *J Org Chem* **2017**, *82* (17), 8943–8949. https://doi.org/10.1021/acs.joc.7b01356.
6. **Ogba, O. M.**; Thoburn, J. D.; O'Leary, D. J. Spreadsheet-Based Computational Predictions of Isotope Effects, *Chapter 14 in Applied Theoretical Organic Chemistry (Editor: Tantillo, D. J)*. **2017**, 403–450. https://doi.org/10.1142/9781786344090_0014.
5. Brueckner, A. C.; **Ogba, O. M.**; Snyder, K. M.; Richardson, H. C.; Cheong, P. H.-Y. Conformational Searching for Complex, Flexible Molecules, *Chapter 5 in Applied Theoretical Organic Chemistry (Editor: Tantillo, D. J).* **2017**, 147–164. https://doi.org/10.1142/9781786344090_0005.
4. Gonzalez, J. A.; **Ogba, O. M.**; Morehouse, G. F.; Rosson, N.; Houk, K. N.; Leach, A. G.; Cheong, P.* H.-Y.; Burke, M. D.; Lloyd-Jones, G. C. MIDA Boronates Are Hydrolysed Fast and Slow by Two Different Mechanisms. *Nat Chem* **2016**, *8* (11), 1067–1075. https://doi.org/10.1038/nchem.2571.
3. Perkins, A.; Parsonage, D.; Nelson, K. J.; **Ogba, O. M.**; Cheong, P. H.-Y.; Poole, L. B.; Karplus, P. A.* Peroxiredoxin Catalysis at Atomic Resolution. *Structure* **2016**, *24* (10), 1668–1678. https://doi.org/10.1016/j.str.2016.07.012.
2. Walden, D. M.; **Ogba, O. M.**; Johnston, R. C.; Cheong, P. H.-Y.* Computational Insights into the Central Role of Nonbonding Interactions in Modern Covalent Organocatalysis. *Accounts Chem Res* **2016**, *49* (6), 1279–1291. https://doi.org/10.1021/acs.accounts.6b00204.
1. Burand, M. W.;* **Ogba, O. M.** Letter Writing as a Service-Learning Project: An Alternative to the Traditional Laboratory Report. *J Chem Educ* **2013**, *90* (12), 1701–1702. https://doi.org/10.1021/ed400215p.

GRANTS

3. **Ogba O. M. (PI)** Developing Models and Novel Techniques For Investigating Reactivity at Metal-Sulfur Centers, *Faculty Opportunity Fund (Internal)* June 01, **2021** – May 31, **2022**. $14,616
2. Ball, N. D. (PI); **Ogba, O. M. (Co-PI)** Sulfur-Fluorine Exchange (SuFEx) Reactions Toward Nitrogen-Based Sulfur(VI) Compounds, *National Institutes of Health (NIH-R15 GM134457-01)*, May 01, **2020** – April 30, **2023**. $37,590 (Co-PI Subaward)
1. Verkhivker, G. M. (PI), Parang, K. (PI), **Ogba, O. M. (Co-PI)**, Tiwari R. (Co-PI) Machine Learning Platform for Drug Design of Tyrosine Kinase Inhibitors: Integrating Chemistry, Biology, and Data Science for Discovery of Anti-Cancer Therapeutic Agents, *Kay Family Foundation Data Analytics Award*, September 01, **2019** – August 31, **2021**. $100,000

TEACHING EXPERIENCE

Chapman University

CHEM 230: Organic Chemistry I	Student Eval Average: 4.67/5.00	**2018 – 2022**
CHEM 331: Organic Chemistry II	Student Eval Average: 4.77/5.00	**2019 – 2023**

CHEM 444: Computational Chemistry Student Eval Average: 4.93/5.00	**2020, 2022**
Pomona College	
CHEM 001B: General Chemistry Lecture + Lab	**2018**
CHEM 110A: Organic Chemistry I Lab	**2017**
CHEM 110B: Organic Chemistry II Lab	**2017**
CHEM 170: Coding for Chemists	**2017**
CHEM 001A: General Chemistry Lecture + Lab	**2016**
Oregon State University	
CHEM 637: Cheminformatics	**2014, 2016**
CHEM 261: General Chemistry I Lab	**2016**
CHEM 262: General Chemistry II Lab	**2016**
CHEM 263: General Chemistry III Lab	**2016**
CHEM 232: General Chemistry Lecture	**2015**
CHEM 232: General Chemistry Lecture	**2015**

Committees, Councils, & Boards

National	
Member, Molecular Education and Research Consortium in Undergraduate Computational Chemistry (MERCURY)	**2022 – Present**
Regional	
Member, Board of Director for the Southern California Conferences for Undergraduate Research (SCCUR)	**2020 – Present**
Chapman University	
Member, Undergraduate Academic Council	**2022 – Present**
Biochemistry Tenure-Track Faculty Search	**2020 – 2021**
Information Technology - Faculty Advisory Board	**2019 – Present**

Professional Service And Outreach

National	
National Science Foundation (NSF) Review Panelist	**2023 (2x), 2021 (2x),**
Beckman Scholars Program Advisory Panel	**2022, 2021**
Peer Reviews	
The Journal of Physical Chemistry (J. Phys. Chem.)	**2023**
Organic Letters (Org. Lett.)	**2023**
Journal of Chemical Education (J. Chem. Educ.)	**2023, 2020 (2x)**
ChemBioChem	**2022**
The Journal of Organic Chemistry (J. Org. Chem)	**2022, 2021**
Angewandte Chemie International Edition (Angew. Chem. Int. Ed.)	**2021**
Chemistry - A European Journal (Chem. Eur. J.)	**2021**
European Journal of Organic Chemistry (EurJOC)	**2021**
Chapman University	
Co-Founder and Co-Director, CHEM/BCHM Seminar Series	**2018 – Present**
Panelist, Future Ready with Untethered Teaching	**2018**

Presentations

ORAL: “Activation of Fluorinated Compounds by Lewis Acidic Salts” **O. Maduka Ogba**. *Science Forum – Schmid College of Science and Technology*, September 19, **2023**. Chapman University, Orange.

ORAL: “Activation of Fluorinated Compounds by Lewis Acidic Salts” **O. Maduka Ogba**. *Telluride Science Workshop - Accelerating Research Discovery*, July 19, **2023**. Telluride, Colorado.

ORAL: “Using Earth-Abundant Lewis Acids to Activate Fluorinated Compounds” **O. Maduka Ogba**. *Chemistry Department Research Seminar*, March 23, **2023**. Mount Holyoke, Massachusetts.

ORAL: “Calcium Bistriflimide Mediated Sulfur(VI)-Fluoride Exchange - Mechanistic Insights Toward Improving Catalysis” **O. Maduka Ogba**. *Chemistry Department Research Seminar*, April 7, **2022**. California State University, Fullerton.

ORAL: “Sulfur(VI)-fluorine exchange mediated by calcium salts: Mechanism, activation modes, and catalysis” **O. Maduka Ogba**. *Spring 2022 American Chemical Society National Meeting*, March 21, **2022**. American Chemical Society.

ORAL: “Molecular Factors Controlling Oxidant-Sensing at Biological Zinc-Sulfur Sites” **O. Maduka Ogba**. Chemistry Department Research Seminar Series, March 1, **2021**. Occidental College.

ORAL: “Theoretical Insights Into How Bacteria Use Zinc-Sulfur Sites to Sense and Respond to Host Inflammation” **O. Maduka Ogba**. Virtual Science Nights – An Intercollegiate Seminar Series, *Virtual*, October 6, **2020**. University of San Diego, Gonzaga University, Point Loma Nazarene University, Chapman University, Metropolitan State University of Denver, LaSierra University.

ORAL: “Computational Investigations Into the Origins of Reactivity at Metal-Sulfur Sites” **O. Maduka Ogba**. Science Forum – Schmid College of Science and Technology, Orange, CA, February 05, **2020**. Chapman University.

POSTER: “Computational investigations into the Lewis-acid mediated activation of sulfur (VI) fluorides” **O. Maduka Ogba**. GRC in Physical Organic Chemistry, Holderness, NH, June 23-28, **2019**. Gordon Research Conference.

ORAL: “Computational investigations into the mechanism of sulfur (VI) fluoride activation” **O. Maduka Ogba**. Orange County Local Section of the American Chemical Society February Dinner Meeting, Santa Ana, CA, February 20, **2019**. American Chemical Society

ORAL: “Designing New Catalysts – Lessons from Nature’s Molecular Machines” **O. Maduka Ogba**. Keck Center Grand Opening, Orange, CA, October 11, **2018**. Schmid College of Science and Technology, Chapman University

ORAL & POSTER: “Toward the Origin of Small Chemical Shift Differences in Diastereotopic X-CH_2D Groups” **O. Maduka Ogba**, Stuart J. Elliott, David A. Kolin, Lynda J. Brown, Sebastian Cevallos, Stuart Sawyer, Malcolm H. Levitt, Daniel J. O’Leary. ACS National Conference, Washington, DC, August 20-24, **2017**. American Chemical Society

POSTER: “Automating Isotope Effects Computations and Analyses” Alex Brueckner, Sebastian Cevallos, **O. Maduka Ogba**, Daniel J. O’Leary, Paul Ha-Yeon Cheong. ACS National Conference, San Francisco, CA, April 2-6, **2017**. American Chemical Society

POSTER: “Mechanism and Stereocontrol Models in Peptide-Catalyzed Acylations” O. Maduka Ogba, Dang Nguyen, Paul Ha-Yeon Cheong. GRC in Physical Organic Chemistry, Holderness, NH, June 21-26, **2015**. *Selected (7 out of 98 posters) based on best poster presentation to give a talk at the Meeting.* Gordon Research Conference.

POSTER: “Mechanism and Stereocontrol Models in Peptide-Catalyzed Acylations” O. Maduka Ogba, Dang Nguyen, Paul Ha-Yeon Cheong. GRS in Physical Organic Chemistry, Holderness, NH, June 20, **2015**. Gordon Research Seminars

ORAL: “*De novo* Catalyst Design of Scaffolding Bifunctional Catalyst for the Site-Selective Functionalization of *trans*-1,2 Diols” O. Maduka Ogba, Ryne C. Johnston, Ommidala Pattawong, Mohamed E. Mansy, Haoyi Yao, Rich Carter, Paul Ha-Yeon Cheong. ACS National Conference, Denver, CO, Mar. 22-26, **2015**. American Chemical Society

POSTER: “Mechanism and Stereocontrol Models in Peptide-Catalyzed Acylations” O. Maduka Ogba, Dang Nguyen, Paul Ha-Yeon Cheong. ACS National Conference, Denver, CO, Mar. 22-26, **2015**. American Chemical Society

ORAL: “Implementing an Interactive Cheminformatics Course for the Acceleration of Graduate Chemical Research,” O. Maduka Ogba, Paul Ha-Yeon Cheong. ACS National Conference, San Francisco, CA, Aug. 10-14, **2014**. American Chemical Society

ORAL: “Letter Writing: A Pathway to Better Laboratory Comprehension,” Michael W. Burand, O. Maduka Ogba. Grand Valley State University, Allendale Charter Township, MI, Aug. 3-7, **2014**. Biennial Conference on Chemical Education

ORAL: “Formal Mentoring Program of Graduate Students for Higher Education Teaching Careers,” O. Maduka Ogba, Rosa Grajzcyk, Ommidala Pattawong, Breland Oscar; University of New Mexico (UNM), Albuquerque, NM, Oct. 29, **2013**. UNM Mentoring Institute

ORAL: “The Origins of Stereocontrol in a Peptide-Catalyzed Kinetic Resolution,” O. Maduka Ogba, Paul Ha-Yeon Cheong. Trinity University, San Antonio, TX, Oct. 10, **2013**. William Crews McGavock Lecture Series, Chemistry Department, Trinity University.

POSTER: “Elucidating the Mechanism and Origins of Stereospecificity of Tetrapeptide Catalyzed Acylation of rac-N-2-Hydroxycyclohexylacetamide: An Insight into Secondary Sphere Stabilization in

Enzyme Active Sites," O. Maduka Ogba, Paul Ha-Yeon Cheong. ACS National Conference, New Orleans, LA, Apr. 6-12, **2013**. American Chemical Society (ACS)

POSTER: "Elucidating the Mechanism and Origins of Stereospecificity of Tetrapeptide Catalyzed Acylation of rac-N-2-Hydroxycyclohexylacetamide: An Insight into Secondary Sphere Stabilization in Enzyme Active Sites," O. Maduka Ogba, Paul Ha-Yeon Cheong. University of Oregon, Eugene, OR, Mar. 23, **2013**. National Organization for the Professional Advancement of Black Chemists and Chemical Engineers

POSTER: "Elucidating the Mechanism and Origins of Stereospecificity of Tetrapeptide Catalyzed Acylation of rac-N-2-Hydroxycyclohexylacetamide: An Insight into Secondary Sphere Stabilization in Enzyme Active Sites," O. Maduka Ogba, Paul Ha-Yeon Cheong. Willamette University, Salem, OR, Mar. 2, **2013**. Oregon Academy of Science

PROFESSIONAL SOCIETIES

Molecular Education and Research Consortium in Undergraduate Computational Chemistry (MERCURY)	**2022 – Present**
American Chemical Society	**2013 – Present**

RESEARCH ADVISEES

	Advisee	Timeline	Awards/Recognitions	Post-Chapman
20	**Janelle Jacques** B.S. Chem. '26	2023 –	Stauffer-Fletcher Jones Research Fellow	
19	**Adel Martinez** B.S., Biochem. '26	2023 –		
18	**Leah Schroer** B.S., Biochem.	2022 – 2022		Univ. Kansas (B.S.)
17	**Paul Rosa** B.S., Bio. '24	2022 –	Beckman Scholar	
16	**Kurt Horney** B.S., Biochem. '24	2022 –		
15	**Natalie Saadeh** B.S., Biochem. '23	2022 – 2023		Univ. California, Berkeley (M.S., Bioeng.)
14	**Leah Zahn** B.S., Biochem. '23	2021 – 2023	NSF GRFP Fellow, Outstanding Senior in Biochemistry.	Univ. Washington, Seattle (Ph.D. Chem.)
13	**Michael Bertagna** B.S., Biochem. '22	2021 – 2022	ACS Organic Award	Univ. Chicago (Research Technician)
12	**Morgan Grimes** B.S., Chem., Bio. '22 BFA., Art '22	2021 – 2022	ACS Special Recognition in Research	Univ. California, Los Angeles (Ph.D., Chem.)
11	**Gabriela Nerhood** B.S., Chem. '22	2021 – 2022		Univ. California, Los Angeles (M.S. Chem. Eng.)
10	**Ka'Naysha Scott** B.S., Chem. '22	2021 – 2022		Texas A&M Univ. (Ph.D., Chemistry)
9	**Alex Drivas** B.S., Biochem. '21	2020 – 2021		Columbia Univ. (M.S. Biomed. Eng.)
8	**Robby Jones** B.S., Biochem. '21	2020 – 2021		Univ. California, Irvine (M.S., Pharmacology)
7	**Dylan Arrazati** B.S., Biochem. '21	2019 – 2021		Narvoc Bioscience (Industry)
6	**Zach Nelson** B.S., Health Sci. '21	2019 – 2021		Oregon Health Science Univ. (Research Coordinator)
5	**Joshua Oommen** B.S., Kinesiology '21 B.A., Philosophy '21	2019 – 2021		Loma Linda Univ. (M.D.)
4	**Brian Han** B.S., Biochem. '21	2019 – 2021	ACS Special Recognition in Research	Dental Assistant

	Advisee	Timeline	Awards/Recognitions	Post-Chapman
3	**Jasmine Sanabrais** B.S., Sociology	2019		-
2	**Lindsay Zumwalt** B.S., Bio. ‘20	2019 – 2020		Texas Christian Univ. (M.D.)
1	**Matthew Nwerem** B.S., Biochem. '20 M.S., Data Sci. ‘21	2018 – 2021	ACS Scholar	Morehouse School Of Medicine (M.D.)