

# Michael G. Campbell, Ph.D.

BARNARD COLLEGE | COLUMBIA UNIVERSITY

Department of Chemistry

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## EDUCATION

- 2014      **Ph.D.** Chemistry, Harvard University | Cambridge, MA  
Advisor: Prof. Tobias Ritter
- 2011      **M.A.** Chemistry, Harvard University | Cambridge, MA
- 2008      **B.S.** Chemistry, Loyola University Maryland | Baltimore, MD  
*Summa cum laude*, Phi Beta Kappa, and Honors Program

## PROFESSIONAL APPOINTMENTS

**Barnard College** | New York, NY

2023–present      Associate Professor of Chemistry

2016–2023      Assistant Professor of Chemistry

**Massachusetts Institute of Technology** | Cambridge, MA

2014–2016      Postdoctoral Fellow (Advisor: Prof. Mircea Dincă)

## RESEARCH INTERESTS

Synthetic organometallic and inorganic chemistry, inorganic reaction mechanisms, catalysis, metal–organic frameworks, functional materials, sensors.

## PUBLICATIONS

### From Work During Independent Career at Barnard

\* Denotes corresponding author(s); Barnard student co-authors are underlined

30. N.D. Reich, A.A. Nghiem, S. Nicholas, B.C. Bostick, M.G. Campbell\*  
Determination of Arsenic Content in Water Using a Silver Coordination Polymer  
*ACS Environ. Au* **2022**, 2, 150–155.
29. S.-L. Zheng\*, M.G. Campbell  
Teaching space group diagrams to chemistry students through a peer tutoring approach  
*Acta. Cryst.* **2021**, E77, 864–866.
28. T. Elkoush, N.D. Reich, M.G. Campbell\*  
Dinuclear Silver Complexes in Catalysis  
*Angew. Chem. Int. Ed.* **2021**, 60, 22614–22622.

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27. D.J. Shields, T. Elkoush, E. Miura-Stempel, C.L. Mak, G.-H. Niu, A.D. Gudmundsdottir, M.G. Campbell\*  
Visible Light Absorption and Long-Lived Excited States in Dinuclear Silver(I) Complexes with Redox-Active Ligands  
*Inorg. Chem.* **2020**, *59*, 18338–18344.
26. T. Elkoush, C.L. Mak, D.W. Paley, M.G. Campbell\*  
Silver(II) and Silver(III) Intermediates in Alkene Aziridination with a Dinuclear Silver(I) Nitrene Transfer Catalyst  
*ACS Catal.* **2020**, *10*, 4820–4826.
25. H.-M. Yang, M.-L. Liu, J.-W. Tu, E. Miura-Stempel, M.G. Campbell\*, G.J. Chuang\*  
Bimetallic Photoredox Catalysis: Visible Light-Promoted Aerobic Hydroxylation of Arylboronic Acids with a Dirhodium(II) Catalyst  
*J. Org. Chem.* **2020**, *85*, 2040–2047.
24. H.C. Wentz, G. Skorupskii, A.B. Bonfim, J.L. Mancuso, C.H. Hendon, E.H. Oriel, G.T. Sazama, M.G. Campbell\*  
Switchable Electrical Conductivity in a Three-Dimensional Metal–Organic Framework via Reversible Ligand n-Doping  
*Chem. Sci.* **2020**, *11*, 1342–1346.  
Featured in the *Chemical Science* themed collection “Most popular 2019-2020 supramolecular chemistry articles”
23. G.-H. Niu, H.C. Wentz, S.-L. Zheng, M.G. Campbell\*  
Silver(I) Coordination Polymers from Dinucleating Naphthyridine Ligands  
*Inorg. Chem. Commun.* **2019**, *101*, 142–144.
22. S.-L. Zheng\*, M.G. Campbell  
Connecting Key Concepts with Student Experience: Introducing Small-Molecule Crystallography to Chemistry Undergraduates Using a Flexible Laboratory Module  
*J. Chem. Educ.* **2018**, *95*, 2279–2283.
21. H.C. Wentz, M.G. Campbell\*  
Fluoride Detection with a Redox-Active Naphthalene Diimide Metal–Organic Framework  
*Polyhedron* **2018**, *154*, 309–313.
20. C.L. Mak, B.C. Bostick, N.M. Yassin, M.G. Campbell\*  
Argentophilic Interactions in Solution: An EXAFS Study of Silver(I) Nitrene Transfer Catalysts  
*Inorg. Chem.* **2018**, *57*, 5720–5722.
19. M.G. Campbell\*, M. Dincă\*  
Metal–Organic Frameworks as Active Materials in Electronic Sensor Devices  
*Sensors* **2017**, *17*, 1108.

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### From Work Prior to Independent Career

‡ Denotes equal author contributions

18. L. Xie, S.S. Park, M.J. Chmielewski, H. Li, R.A. Kharod, M.G. Campbell, M. Dincă  
Isorecticular Linker Substitution in Conductive Metal–Organic Frameworks with  
Through-Space Transport Pathways  
*Angew. Chem. Int. Ed.* **2020**, *59*, 19623–19626.
17. M.G. Campbell, J. Mercier, C. Genicot, V. Gourverneur, J.M. Hooker, T. Ritter  
Bridging the Gaps in <sup>18</sup>F PET Tracer Development  
*Nature Chem.* **2017**, *9*, 1–3.
16. H. Lee, M.G. Campbell, R.H. Sánchez, J. Börgel, J. Raynaud, S.E. Parker, T. Ritter  
Mechanistic Insight Into High-Spin Iron(II)-Catalyzed Butadiene Dimerization  
*Organometallics* **2016**, *35*, 2923–2929.
15. B.J. Malbrecht, M.G. Campbell, Y.-S. Chen, S.-L. Zheng  
Teaching Outside the Classroom: Field Trips in Crystallography Education for  
Chemistry Students  
*J. Chem. Educ.* **2016**, *93*, 1671–1675.
14. M.G. Campbell, T.M. Powers, S.-L. Zheng  
Teaching with the Case Study Method to Promote Active Learning in a Small Molecule  
Crystallography Course for Chemistry Students  
*J. Chem. Educ.* **2016**, *93*, 270–274.
13. L. Sun‡, M.G. Campbell‡, M. Dincă  
Electrically Conductive Porous Metal–Organic Frameworks  
*Angew. Chem. Int. Ed.* **2016**, *55*, 3566–3579.
12. J. Börgel‡, M.G. Campbell‡, T. Ritter  
Transition Metal d-Orbital Splitting Diagrams: An Updated Educational Resource for  
Square Planar Complexes  
*J. Chem. Educ.* **2016**, *93*, 118–121.
11. M.G. Campbell‡, S.F. Liu‡, T.M. Swager, M. Dincă  
Chemiresistive Sensor Arrays from Conductive 2D Metal–Organic Frameworks  
*J. Am. Chem. Soc.* **2015**, *137*, 13780–13783.  
ACS Editors Choice, and featured in JACS Spotlight
10. M.G. Campbell, D. Sheberla, S.F. Liu, T.M. Swager, M. Dincă  
Cu<sub>3</sub>(hexaiminotriphenylene)<sub>2</sub>: An Electrically Conductive 2D Metal–Organic Framework  
for Chemiresistive Sensing  
*Angew. Chem. Int. Ed.* **2015**, *54*, 4349–4352.  
Featured in Chemistry World
9. M.G. Campbell, T. Ritter  
Modern Carbon–Fluorine Bond Forming Reactions for Aryl Fluoride Synthesis  
*Chem. Rev.* **2015**, *115*, 612–633.

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8. M.G. Campbell, A.J. Hoover, T. Ritter  
Transition Metal-Mediated and Metal-Catalyzed Carbon-Fluorine Bond Formation  
*Top. Organomet. Chem.* **2015**, *52*, 1–54.
7. M.G. Campbell, T. Ritter  
Late-Stage Formation of Carbon-Fluorine Bonds  
*Chem. Rec.* **2014**, *14*, 482–491.
6. M.G. Campbell, T. Ritter  
Late-Stage Fluorination: From Fundamentals to Application  
*Org. Process Res. Dev.* **2014**, *18*, 474–480.
5. E.L. Regalado, M.C. Kozlowski, J. Curto, T. Ritter, M.G. Campbell, A.R. Mazzotti, B. Hamper, C.D. Spilling, M.P. Mannino, L. Wan, J.-Q. Yu, J. Liu, C.J. Welch  
Support of academic synthetic chemistry using separation technologies from the pharmaceutical industry  
*Org. Biomol. Chem.* **2014**, *12*, 2161–2166.
4. M.G. Campbell, S.-L. Zheng, T. Ritter  
One-Dimensional Palladium Wires: Influence of Molecular Changes on Supramolecular Structure  
*Inorg. Chem.* **2013**, *52*, 13295–13297.  
Featured as Cover Art
3. A.R. Mazzotti<sup>‡</sup>, M.G. Campbell<sup>‡</sup>, P. Tang, J.M. Murphy, T. Ritter  
Palladium(III)-Catalyzed Fluorination of Arylboronic Acid Derivatives  
*J. Am. Chem. Soc.* **2013**, *135*, 14012–14015.
2. M.G. Campbell, D.C. Powers, J. Raynaud, M.J. Graham, P. Xie, E. Lee, T. Ritter  
Synthesis and structure of solution-stable one-dimensional palladium wires  
*Nature Chem.* **2011**, *3*, 949–953.
1. J.D. More, M.G. Campbell  
Reaction of acetylated carbohydrates with trimethylaluminum: concise synthesis of 1,2-O-isopropylidene D-ribofuranose  
*Tetrahedron Lett.* **2009**, *50*, 2617–2619.

## PATENTS AND PATENT APPLICATIONS

4. M.G. Campbell, B.C. Bostick, N.D. Reich  
Silver Coordination Polymers for Measuring Arsenic Levels in Water  
*PCT/US2021/036086*
3. M. Dincă, D. Sheberla, L. Sun, C.R. Wade, M.G. Campbell  
Compositions and Methods Comprising Conductive Metal Organic Frameworks and Uses Thereof  
*PCT/US2015/029503*

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2. T. Ritter, M.G. Campbell, J. Raynaud  
Iron-Catalyzed Synthesis of 1,5-Cyclooctadienes  
*61/936,729*
1. T. Ritter, D.C. Powers, M.G. Campbell, J. Raynaud  
Palladium Nanowires and Methods of Preparation  
*PCT/US12/24378*

## EXTERNAL GRANT FUNDING

- 2021–2026 Dreyfus Foundation (TH-21-002) “Henry Dreyfus Teacher-Scholar Award: Chemistry of Dinuclear Silver Complexes” (Role: PI; \$75,000)
- 2021–2024 NSF (CHE-2117447) “MRI: Acquisition of a Mössbauer Spectrometer for Research and Training in Iron based Inorganic, Bioinorganic and Material Systems” (Role: co-PI; PI Rupal Gupta; \$146,405)
- 2020–2023 NSF (CHE-1956197) “RUI: Harnessing the Redox Chemistry of Silver: Fundamental Studies of Oxidation Chemistry at Dinuclear Silver Catalysts” (Role: PI; \$249,534)
- 2018–2021 NSF (CHE-1827936) “MRI: Acquisition of a 400 MHz Nuclear Magnetic Resonance (NMR) Spectrometer for Research and Research Training at Barnard College” (Role: PI; Rojas, Merrer, Buzzeo, co-PIs; \$399,000)
- 2018–2020 ACS PRF (59369-UNI3) “The Importance of Nuclearity in the Redox Chemistry of Silver: New Mechanistic Pathways for Hydrocarbon Oxidation” (Role: PI; \$55,000)

## HONORS AND AWARDS

- Barnard** Henry Dreyfus Teacher-Scholar Award (2021); Barnard College Presidential Research Award (2020); ACS Division of Inorganic Chemistry Award for Undergraduate Research (2018; Joint Award with Choi Mak ‘18)
- MIT** MIT Infinite Kilometer Award (2015); Camille and Henry Dreyfus Environmental Chemistry Postdoctoral Fellowship (2014)
- Harvard** Harvard University Certificate of Distinction in Teaching (2013); US Department of Energy Office of Science Graduate Fellowship (2010)
- Loyola** Phi Lambda Upsilon Chemistry Honor Society (2008); McNeal Chemistry Medal (2008); Madeleine Freimuth Memorial Award for Chemistry (2008); Phi Beta Kappa (2007); Hauber Research Fellowship (2006, 2007); Organic Chemistry Achievement Award (2006); CRC Press Freshman Chemistry Achievement Award (2005)

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## TEACHING EXPERIENCE

**Barnard College** | New York, NY

2023–present **Associate Professor**

2016–2023 **Assistant Professor**

CHEM BC3271 Inorganic Chemistry  
CHEM BC3272 Advanced Inorganic Chemistry  
CHEM BC3280 Advanced Organic Chemistry  
CHEM BC2001 General Chemistry  
CHEM BC2012 General Chemistry Laboratory  
CHEM BC3328 Introductory Organic Chemistry Laboratory  
FYSB BC1474 Think Like a Scientist: From Plato to Hawking  
CHEM BC3901/3902 Senior Honors Thesis Seminar  
CHEM BC3903/3904 Senior Honors Thesis Lab  
CHEM BC3597/3599 Problems In Chemistry

**Harvard University** | Cambridge, MA

2013 **Head Teaching Fellow**

CHEMISTRY 30: Organic Chemistry II  
CHEMISTRY 255: Practical Crystallography in Chemistry and  
Materials Science

2009–2012 **Teaching Fellow**

CHEMISTRY 153: Organotransition Metal Chemistry  
CHEMISTRY 30: Organic Chemistry II  
CHEMISTRY 27: Organic Chemistry of Life

**Allegany College of Maryland** | Cumberland, MD

2008 **Chemistry Instructor**

CHEMISTRY 100: Elements of Chemistry

## INVITED SEMINARS

2022 ACS DIC “Periodic Table Talks” (Oct 19); Columbia University (Oct 13)  
2021 Swarthmore College (Nov 11); Princeton University (April 20); University of  
Pennsylvania (March 23); Columbia University (Jan 29)  
2020 University of Houston (July 7); Texas A&M University (June 11)  
2018 Loyola University Maryland (Oct 12); ACS National Meeting (March 20)

## OTHER PRESENTATIONS

ACS National Meeting, San Diego, CA | March 2022

Pacificchem - The International Chemical Congress of Pacific Basin Societies | Dec 2021

Columbia University Introduction to Materials Science and Nanotechnology  
High School Summer Program | July 2020

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ACS National Meeting, Boston, MA | Aug 2015

Gordon Research Conference: Organometallic Chemistry, Newport, RI | July 2015

ACS Northeast Regional Meeting (NERM), Ithaca, NY | June 2015

Boston Symposium on Organic and Bioorganic Chemistry | Oct 2013

Graduate Student/Postdoc Seminar Series, Harvard University | Oct 2011

International Symposium on Complex Inorganic Nanomaterials

Namur, Belgium | Sept 2011

Undergraduate Research Symposium in the Chemical and Biological Sciences

University of Maryland, Baltimore County | Oct 2006