

Philip P. Rodenbough, Ph.D.

CURRICULUM VITAE – UPDATED 1/2020

CONTACT

WORK CONTACT

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EDUCATION

Columbia University in the City of New York

New York NY, USA

Ph.D., Materials Chemistry

Oct. 2016

DISSERTATION: CRYSTALLITE SIZE DEPENDENCY OF THE PRESSURE AND TEMPERATURE RESPONSE IN NANOPARTICLES OF CERIA AND OTHER OXIDES

M.Phil., Chemistry

Feb. 2015

M.A., Chemistry

May 2013

University of Washington – Seattle

Seattle WA, USA

B.S. with College Honors, Chemistry major – ACS certified

Dec. 2008

B.A. with College Honors, Biochemistry major, Philosophy minor

Dec. 2008

ACADEMIC

New York University Abu Dhabi

Abu Dhabi, UAE

APPOINTMENTS

Lecturer of Scientific Writing

Jan. 2018 – present

↪ Division of Arts & Humanities / Writing Program

↪ Graduate & Postdoctoral Program

Fulbright US Scholar Program (US Dept. of State)

Kinshasa, DR Congo, &

Fulbright US Scholar in Sub-Saharan Africa

Abidjan, Côte d'Ivoire

Aug. 2018 – Aug. 2019

Visiting Professor, Chemistry Department, University of Kinshasa, DR Congo

Visiting Professor, Research Institute, University of Félix Houphouët-Boigny, Côte d'Ivoire

Consultant, Ministry of Education, Côte d'Ivoire

The American University in Cairo

Cairo, EG

Postdoctoral Teaching Fellow

Aug. 2017 – Dec. 2017

↪ University Core Curriculum

↪ School of Sciences & Engineering / Chemistry Department

New York University Abu Dhabi

Abu Dhabi, UAE

Postdoctoral Associate

Sept. 2016 – Aug. 2017

↪ Division of Science / Chemistry Program

AWARDS, SERVICE, & LEADERSHIP	<ul style="list-style-type: none"> • Fulbright US Scholar Award to Sub-Saharan Africa • Postdoctoral Council, New York University Abu Dhabi • Materials Research Society Foundation funding awardee • Fellow of JUAMI: The Joint US-Africa Materials Institute • Steering Committee, Columbia U. Graduate Student Advisory Council • Columbia Graduate Consulting Club 2015 Competition team leader • Conference Travel Award from Gordon Research Conferences • Columbia Graduate Student Advisory Council Service Award for outstanding dedication to student life • SciFinder® Future Leader in Chemistry Award • Conference Travel Award from NOGLSTP • Teagle Foundation Teaching Fellowship • Honorable Mention, NSF & Ford Foundation predoctoral fellowship competitions • Faculty Fellowship, Chemistry Department of Columbia University • Washington NASA Space Grant Consortium SURP Award • Mary Gates Research Scholarship 	2018/2019 2016/2017 Fall 2016 Summer 2016 2015/2016 Summer 2015 Summer 2015 Spring 2015 Summer 2014 Summer 2014 2013/2014 Spring 2012 2011 – 2016 Summer 2008 2007/2008
RECENT PROJECTS	<ul style="list-style-type: none"> • Founder & Manager, Scientific Writing Program at NYUAD • Editorial Associate at <i>Materialia</i> (Acta Materialia, Inc. / Elsevier) • MITx Course Development Specialist, MIT Office of Digital Learning • Co-Founder & Manager, Chemistry on Computers in Kenya Project • Fellow at Columbia Technology Ventures 	Spring 2018 – present Spring 2018 – present 2017/2018 2016 – 2018 2014 – 2016
ADDITIONAL EXPERIENCE	<ul style="list-style-type: none"> • United States Peace Corps Volunteer: High School Chemistry Teacher • Research Scientist / Engineer Assistant, University of Washington 	Guinea & Burkina Faso 2009 – 2011 Seattle WA, USA 2009
PEER- REVIEWED ACADEMIC PUBLICATIONS	<p>[13] <u>Rodenbough, P. P.</u>; Manyilizu, M. C. Developing and Piloting Culturally Relevant Chemistry Pedagogy: Computer-Based VSEPR and Unit Cell Lesson Plans from Collaborative Exchange in East Africa. <i>J. Chem. Educ.</i> 2019, 96 (6), 1273–1277. doi:10.1021/acs.jchemed.8b00979</p> <p>[12] <u>Rodenbough, P. P.</u>; Karothu, D. P.; Gjorgjieva, T.; Commings, P.; Hara, H.; Naumov, P. Reversible Photolysis of Nitrosobenzene <i>cis</i>-Dimer Monitored In Situ by Single Crystal Photocrystallography. <i>Cryst. Growth Des.</i> 2018, 18 (3), 1293-1296. doi:10.1021/acs.cgd.8b00031.</p> <p>[11] <u>Rodenbough, P. P.</u>; Chan, S.-W. Thermal Oxygen Exchange Cycles in Mixed Manganese Perovskites. <i>Ceram. Int.</i> 2018, 44 (2), 1343-1347. doi:10.1016/j.ceramint.2017.08.168.</p> <p>[10] <u>Rodenbough, P. P.</u>; Chan, S.-W. Crystallite-Size Dependency of the Pressure and Temperature Response in Nanoparticles of Magnesia. <i>J. Nanopart. Res.</i> 2017, 19 (7), 241. doi:10.1007/s11051-017-3922-7.</p> <p>[9] <u>Rodenbough, P. P.</u>; Lipatov, M.; Chan, S.-W. Crystallite Size Dependency of Thermal Expansion in Ceria Nanoparticles. <i>Mater. Chem. Phys.</i> 2017, 192, 311-316. doi:10.1016/j.matchemphys.2017.01.031.</p> <p>[8] <u>Rodenbough, P. P.</u>; Zheng, C.; Liu, Y.; Hui, C.; Xia, Y.; Ran, Z.; Hu, Y.; Chan, S.-W. Lattice Expansion in Metal Oxide Nanoparticles: MgO, Co₃O₄, & Fe₃O₄. <i>J. Am. Ceram. Soc.</i> 2016, 100 (1), 384-392. doi:10.1111/jace.14478.</p> <p>[7] Song, J.; <u>Rodenbough, P. P.</u>; Zhang, L.; Chan, S.-W. Size-Dependent Crystal Properties of Nanocuprite. <i>Int. J. Appl. Ceram. Technol.</i> 2016, 13 (2), 389–394. doi:10.1111/ijac.12486.</p>	

- [6] Rodenbough, P. P.; Vanti, W. B.; Chan, S.-W. 3D-Printing Crystallographic Unit Cells for Learning Materials Science and Engineering. *J. Chem. Educ.* **2015**, 92 (11), 1960–1962. doi:[10.1021/acs.jchemed.5b00597](https://doi.org/10.1021/acs.jchemed.5b00597).
- [5] Song, J.; Rodenbough, P. P.; Xu, W.; Senanayake, S. D.; Chan, S.-W. Reduction of Nano-Cu₂O: Crystallite Size Dependent and the Effect of Nano-Ceria Support. *J. Phys. Chem. C* **2015**, 119 (31), 17667–17672. doi:[10.1021/acs.jpcc.5b04121](https://doi.org/10.1021/acs.jpcc.5b04121).
- [4] Rodenbough, P. P.; Song, J.; Walker, D.; Clark, S. M.; Kalkan, B.; Chan, S.-W. Size Dependent Compressibility of Nano-Ceria: Minimum near 33 nm. *Appl. Phys. Lett.* **2015**, 106 (16), 163101. doi:[10.1063/1.4918625](https://doi.org/10.1063/1.4918625).
- [3] Wei, S.; Xia, J.; Dell, E. J.; Jiang, Y.; Song, R.; Lee, H.; Rodenbough, P.; Briseno, A. L.; Campos, L. M. Bandgap Engineering through Controlled Oxidation of Polythiophenes. *Angew. Chemie Int. Ed.* **2014**, 53 (7), 1832–1836. doi:[10.1002/anie.201309398](https://doi.org/10.1002/anie.201309398).
- [2] Crowther, G. J.; Napuli, A. J.; Gilligan, J. H.; Gagaring, K.; Borboa, R.; Francek, C.; Chen, Z.; Dagostino, E. F.; Stockmyer, J. B.; Wang, Y.; Rodenbough, P. P.; ... Kuhen, K. L. Identification of Inhibitors for Putative Malaria Drug Targets among Novel Antimalarial Compounds. *Mol. Biochem. Parasitol.* **2011**, 175 (1), 21–29. doi:[10.1016/j.molbiopara.2010.08.005](https://doi.org/10.1016/j.molbiopara.2010.08.005).
- [1] Crowther, G. J.; He, P.; Rodenbough, P. P.; Thomas, A. P.; Kovzun, K. V.; Leibly, D. J.; Bhandari, J.; Castaneda, L. J.; Hol, W. G. J.; Gelb, M. H.; Napuli, A. J.; Van Voorhis, W. C. Use of Thermal Melt Curves to Assess the Quality of Enzyme Preparations. *Anal. Biochem.* **2010**, 399 (2), 268–275. doi:[10.1016/j.ab.2009.12.018](https://doi.org/10.1016/j.ab.2009.12.018).

OTHER PUBLICATIONS

- [8] “How to Write a Compelling (Materials) Science Paper.” Editorial. *Materialia* **2019**, 6, 100339, with Mao, Z.; Gault, B. doi:[10.1016/j.mtla.2019.100339](https://doi.org/10.1016/j.mtla.2019.100339)
- [7] “The J. Stat. Mech.-Motherboard Rule: A Scientific Writing Principle.” Times Higher Education. **2019**. [[link](#)]
- [6] “Chemistry on Computers in East Africa – Lesson Plans from Collaborative Exchange.” Pre-print. *AfricArXiv*. **2019**, with Manyilizu, M.C. doi:[10.31730/osf.io/hmwq3](https://doi.org/10.31730/osf.io/hmwq3)
- [5] “Scientific research in Africa: More than an economic boost.” *Polity ZA*. **2015**. [[link](#)]
- [4] “Geothermal power in Kenya is heating up.” *In On Africa* (formerly *Consultancy Africa Intelligence*). **2015**. [[link](#)]
- [3] “LGBT Nigeria: One year after the Same-Sex Marriage Prohibition Act.” *Polity ZA*. **2015**. [[link](#)]
- [2] “On Being LGBT in West Africa.” *RightsViews: Opinion and research from the human rights community at Columbia University*. **2015**. [[link](#)]
- [1] “Peace through Chemistry.” *in Chemistry Magazine*. February/March **2014**. Cover story. Pp 12-14. [[link](#)]

ACADEMIC CONFERENCES

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| [18] W-STEM Conference at the American University of Sharjah. Oral presentation: Scientific Writing Support in a Graduate Program | Sharjah, UAE
Nov. 28 – 29, 2019 |
| [17] 2 nd Pan-African Crystallography Conference. Oral presentation: Chemistry on Computers in East Africa – Lesson Plans from Collaborative Exchange. | Accra, GH
Jan. 28 – Feb. 1, 2019 |
| [16] 2 nd Edition of the Congolese Language Supporter Society (CLASS) International Annual Conference. Keynote address: The Importance of Good Scientific Writing for Scientists Everywhere. | Kinshasa, DRC
Nov. 1 – 3, 2018 |
| [15] Open Education Global Conference 2018. Contributing non-attending author: Strategies for Assessment in MOOCs. | Delft, NL
April 25, 2018 |
| [14] NYUAD Writing Studies Working Group Conference. Panelist: What Counts as Evidence? Where, how, and when? | Abu Dhabi, UAE
Apr. 18 – 19, 2018 |

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| [13] University of KwaZulu-Natal: Health, Economics, and HIV/AIDS Research Division (HEARD) Workshop on Conducting HIV/AIDS Research in Challenging Environments. Oral presentation: Reflections on the West African Context. Invited speaker. | Durban, ZA
Feb. 19, 2018 |
| [12] 9th International Conference of the African Materials Research Society. Oral presentation: Learning Chemistry on Computers in African Contexts. Travel award winner. | Gaborone, BW
Dec. 11 – 14, 2017 |
| [11] American Chemical Society Meeting. Oral presentation: Chemical X-Ray Photodiffraction for Structural Characterization of Short-Lived Intermediates. Travel award winner. | San Francisco CA, USA
Apr. 2 – 6, 2017 |
| [10] Ras al-Khaimah Center for Advanced Materials: International Workshop on Advanced Materials (IWAM). Conferee. | Ras al-Khaimah, UAE
Feb. 19 – 21, 2017 |
| [9] Joint US-Africa Materials Institute Conference. Conferee/Fellow. Travel award winner. | Arusha, TZ
May 30 – June 10, 2016 |
| [8] American Association for the Advancement of Science 2016 Annual Meeting: Global Science Engagement. Poster presentation: Thermal Cycles of Perovskite Manganese Oxides for Syngas Production. | Washington DC, USA
Feb. 14, 2016 |
| [7] Materials Research Society. Poster presentation: Size-Dependence of Bulk Modulus for Nanoceria. | Boston MA USA
Nov. 30, 2015 |
| [6] American Association for the Advancement of Science: Science and Human Rights Coalition Meeting on Business and Human Rights. Poster presentation: Peace through Chemistry. Student poster competition finalist. | Washington DC, USA
July 16, 2015 |
| [5] Synchrotron Radiation Instrumentation 2015 Conference. Poster presentation: Size-Dependence of Bulk Modulus for Nanoceria. | New York NY, USA
July 6 – 10, 2015 |
| [4] Gordon Research Conference on Chemistry Education Research & Practice: Chemistry Education as an Agent in Global Progress. Poster presentation: Peace through Chemistry. Travel award winner. | Lewiston ME, USA
June 21 – 26, 2015 |
| [3] NOGLSTP: Out to Innovate Conference. Conferee. Travel award winner. | Atlanta GA, USA
Nov. 7 – 9, 2014 |
| [2] American Chemical Society Meeting. Conferee. Travel award winner. | San Francisco CA, USA
Aug. 10 – 15, 2014 |
| [1] Inaugural Pacific Northwest Undergraduate Research Symposium on Organic Chemistry and Chemical Biology. Poster presentation: Synthesis and Study of Small-Molecule Inhibitors of Secreted Phospholipase A2. | Corvallis OR, USA
Aug. 11, 2008 |

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| PRESS | [4] NYUAD's Newest Fulbright US Scholar. NYUAD Press Release. [link] | July 2018 |
| | [3] NYUAD Chemist Helps Bring Digital Courseware to Schools in Kenya. NYUAD Press Release. [link] | February 2017 |
| | [2] Grassroots Grant Recipients 2016. Materials Research Society Foundation Press Release. [link] | December 2016 |
| | [1] #PoetweetsNYC winners announced. Metro. [link] | April 2015 |
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AFFILIATIONS	American Association for the Advancement of Science (AAAS)
	<i>CHEMISTRY, EDUCATION, & SOCIETAL IMPACTS SECTIONS</i>
	American Ceramic Society (ACerS)
	<i>BASIC SCIENCE DIVISION</i>
	<i>EDUCATION AND PROFESSIONAL DEVELOPMENT COUNCIL</i>
	American Chemical Society (ACS)
	<i>CHEMISTRY INTERNATIONAL / INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY (IUPAC) US-AFFILIATE</i>
	<i>NEW YORK LOCAL SECTION</i>
	<i>CHEMICAL EDUCATION DIVISION</i>
	American Crystallographic Association (ACA)
	<i>INTERNATIONAL UNION OF CRYSTALLOGRAPHY (IUCr) REGIONAL ASSOCIATE SOCIETY</i>
	<i>AMERICAN INSTITUTE OF PHYSICS (AIP) MEMBER SOCIETY</i>
	<i>AFRICAN CRYSTALLOGRAPHY INITIATIVE – SUPPORTER</i>
	Congolese Language Supporter Society (CLASS) – International Member
	Consortium on Graduate Communication (CGC)
	Council of Science Editors (CSE)
	International Writing Centers Association (IWCA)
	Materials Research Society (MRS)
	The Minerals, Metals, & Materials Society (TMS)
	Professional Communication Society (PCS) / Institute of Electrical & Electronics Engineers (IEEE)
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INVITED	<i>Asian English for Specific Purposes Journal</i>
PEER-	<i>Crystals</i> (MDPI Journal)
REVIEWER	<i>Education Sciences</i> (MDPI Journal)
OR REFEREE	<i>Journal of Applied Crystallography</i> (IUCr Journal)
	<i>Journal of Chemical Education</i> (ACS Journal)
	<i>Materials</i> (MDPI Journal)
	<i>Metals</i> (MDPI Journal)
	<i>New Journal of Chemistry</i> (RSC Journal)
	<i>Scholar Rescue Fund</i> (IIE Program)
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