

ANTONIO SIMONETTI

Associate Professor

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1. HIGHER EDUCATION

- 1990-1994** **PhD Earth Sciences**, Carleton University, Ottawa, Canada
Dissertation: Nd, Pb, and Sr isotope systematics of East African and Indian alkalic complexes: implications for mantle source regions, and melt dynamics.
Advisor: Keith Bell
- 1986-1989** **MSc Geological Sciences**, McGill University, Montréal, Québec, Canada
Dissertation: The geochronology of Acadian plutonism in southeastern Québec.
Advisor: Ronald Doig
- 1983-1986** **BSc (Honors), Geological Sciences**, McGill University, Montréal, Canada
Undergraduate Thesis: Rb-Sr geochronology of several Acadian plutons in southeastern Québec.
Advisor: Ronald Doig

2. PREVIOUS POSITIONS

Current Position

2012-Pres.	Associate Professor	University of Notre Dame
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Prior Academic Positions

2008-2012	Research Associate Professor	University of Notre Dame
2003-2008	Faculty Services Officer	University of Alberta
1999-2003	Senior Research Associate	GEOTOP-UQAM
1997-1999	Postdoctoral researcher	GEOTOP-UQAM
1995-1996	Postdoctoral researcher	Max Planck Institute, Germany
1994	Postdoctoral researcher	Carleton University

3. SCHOLARSHIPS AND FELLOWSHIPS

- 1997/99** **Université du Québec à Montréal (UQAM) Foundation Postdoctoral Fellowship (GEOTOP-UQAM)**
Postdoctoral fellowship was awarded to conduct chemical and Pb and Sr isotopic studies of snowpack, lichens, and precipitation within northeastern North America for tracing long-range circulation patterns of atmospheric pollution.
- 1995/96** **Natural Sciences and Engineering Research Council (NSERC) Postdoctoral Fellowship (Max-Planck-Institute, Mainz, Germany)**
Highly competitive, national postdoctoral fellowship awarded to conduct chemical and isotopic investigations of Fe-Mn nodule deposits within the Atlantic Ocean in order to trace the global circulation patterns of deep ocean water; investigate the chemical and isotopic characteristics of alkaline complexes in west-central India and East Africa.
- 1990/92** **Ontario Postgraduate Scholarship (Carleton University)**
Postgraduate award from the Ontario Provincial Government for conducting comparative chemical and isotopic investigations of alkaline complexes from East Africa and west-central India in order to determine the nature of their upper mantle source regions.
- 1988/90** **Natural Sciences and Engineering Research Council (NSERC) Postgraduate Scholarship (Carleton University)**
Highly competitive, national, postgraduate award for conducting comparative chemical and isotopic investigations of alkaline complexes from East Africa and west-central India in order to determine the nature of their upper mantle source regions.
- 1987** **Fonds de Recherche du Québec – Nature et Technologies (FRQNT) Postgraduate Scholarship (McGill University)**
Postgraduate award from Québec provincial government to conduct U-Pb geochronological investigations of granitic plutons located within the southeastern region of Québec.
- 1986** **Carl Reinhardt Undergraduate Scholarship (McGill University)**
Undergraduate summer research assistant award to conduct sample preparation, chemical analyses, ion exchange chromatography and Rb-Sr isotope analyses within Dr. Ronald Doig's geochemistry lab.
- 1985** **Carl Reinhardt Undergraduate Scholarship (McGill University)**
Undergraduate summer research assistant award to conduct sample preparation, chemical analyses, ion exchange chromatography and Rb-Sr isotope analyses within Dr. Ronald Doig's geochemistry lab.

4. DISTINCTIONS, HONORS, AND AWARDS

January 2019 - 2024 Visiting Professor, Faculty of Earth Resources and the Collaborative Innovation Center for Exploration of Strategic Mineral Resources, China University of Geosciences (CUG), Wuhan

This is a 5-year appointment that includes up to 3-months/year stipend support, allowances for housing and travel, and access to analytical facilities and resources at CUG. There is also financial support for Simonetti's graduate students visiting CUG. CUG is China's premier Geosciences department with an undergraduate enrollment of >1,000 students.

August 2016 Certificate of Outstanding Contribution in Reviewing

Source: Editors of the journal Lithos In recognition of the contributions made to the quality of the journal.

March 2016 U.S. Geological Survey (USGS) Service Citizen's Award

Citation – *'The USGS is dedicated to preserving the integrity of the scientific activities it conducts as well as those that are conducted on its behalf. The USGS will not tolerate loss of integrity in the performance, use, or communication of scientific activities and their results. Following a recent allegation of the loss of USGS scientific integrity, and pursuant to the Department of the Interior's policy on the Integrity of Scientific and Scholarly Activities, the USGS convened a Scientific Integrity Review Panel to investigate the allegation. This Panel included Antonio Simonetti, Associate Professor and Director of Graduate Studies, Department of Civil and Environmental Engineering and Earth Science of the University of Notre Dame, and three USGS senior scientists. Forming a trusted, cohesive team, Professor Simonetti and his USGS colleagues conducted an extensive investigation into the allegation, contributing their collective, vast expertise to probe and evaluate significant scientific information. Professor Simonetti and his fellow team members' thoroughness and dedication to determine the core factors of the issue were driven by a collective desire to protect the scientific integrity of the USGS as a world renowned provider of accurate natural science data that can be trusted by scientists and the general public. For his outstanding contributions, dedication, and commitment to scientific integrity, Professor Antonio Simonetti is granted the Department of the Interior's Citizen's Award for Exceptional Service.'* Dr. Suzette Kimball, Director, USGS

Dec. 2013 The Innolec Lectureship Award in Analytical Geochemistry

*Source: Faculty of Science, Masaryk University, Czech Republic
In recognition of the valuable contribution to the development of the teaching curriculum within the Department of Analytical Chemistry, Masaryk University, Czech Republic.*

June 2005 Invited Professor – Université Pierre et Marie Curie - Paris VI

Award consisted of a two-month invited professorship by the Université Pierre et Marie Curie - Paris VI to conduct collaborative research work with Drs.

Christiane Wagner (Paris VI) and Etienne Deloule (CRPG-Nancy) involving ion microprobe work at the French national facility in Nancy. The research work focused on the oxygen and lithium isotopic investigations of mantle eclogite xenoliths from diamond-bearing kimberlites.

1994

Peacock Memorial Mineralogy Prize (Royal Ontario Museum, Toronto)

The Peacock Memorial Prize is an award in memory of Dr. M. A. Peacock, who was a professor of crystallography and mineralogy at the University of Toronto, and a founding member of the Walker Club. The Walker Mineralogical Club encourages the study of mineralogy and allied sciences. The Walker Mineralogical Club makes an annual award to a deserving student attending a Canadian university or college. The student should be engaged in the study of pure or applied mineralogy, including crystallography, petrology, or geochemistry at the graduate level.

6. REFEREED JOURNAL PUBLICATIONS – PUBLISHED/IN PRESS

H-INDEX= 62

TOTAL CITATIONS = 10,621

TOTAL PEER-REVIEWED PUBLICATIONS= 179

Bold face indicates Simonetti and individual under Simonetti's mentorship including: (*) undergraduate students, (@) graduate students, and (+) postdoctoral research associates.

- [J-179] Çimen O, Gücer MA, **Simonetti A**, Karaoğlan F (2025). Geochronological and isotopic data from the adakitite Dodurga Pluton (Central Pontides, N Türkiye): New insights for the geodynamic evolution of the northern Neotethys. *Turkish Journal of Earth Sciences*, 34: 1-22. DOI:10.55730/1300-0985.1943.
- [J-178] **Simonetti A**, Buzon MR, Guilbault KA, Simonetti SS (2024). The Role of Post-Mortem Alteration in Tooth Enamel Revisited: A Combined Strontium Isotope and Geochemical Evaluation. *Journal of Archaeological Science: Reports*, **53**:104323. DOI:10.1016/j.jasrep.2023.104323.
- [J-177] Zhao H, **Simonetti A**, Simonetti S, Cao X, Du Y (2024). A geochemical and isotopic investigation of carbonatites from Huangshui, Central China: Implications for petrogenesis and mantle sources. *Minerals*, **14**:953. DOI.org/10.3390/min14090953.
- [J-176] Spencer N, Binder M, Buzon M, Woodward J, Macklin M, **Simonetti A** (2024). Maintaining the Ramesside Empire: Isotopic evidence for elite migration to Upper Nubia under Pharaonic rule. *Journal of African Archaeology*, DOI:10.1163/21915784-bja10033.
- [J-175] Çimen O, Gücer MA, Akal C, Göncüoğlu MC, Arslan M, **Simonetti A**, Karaoğlan F (2024). Revisiting the depositional age and provenance characteristics of metasedimentary rocks from the basement units in the Central Pontides (N Turkey): New constraints for tectonic evolution of the southern Black Sea region. *Journal of Asian Earth Sciences*, **266**:106134. DOI:10.1016/j.jseas.2024.106134.
- [J-174] Buzon MR, Guilbault KA, **Simonetti A** (2024). Exploring intersectional identities and geographic origins in ancient Nubia at Tombos, Sudan. Thematic Issue: Integrating Chemical Isotopes and Critical Theory in Bioarchaeology by guest editors, Sara L. Juengst and Matthew C. Velasco. *Bioarchaeology International*, 1-2: 9-22. DOI: 10.5744/bi.2022.0029.
- [J-173] **Simonetti A**, Buzon MR, Simonetti SS, Guilbault KA, Ahmed Kordofani M, Miller N (2023). Assessing the Impact of Holocene Climate Change on Bioavailable Sr Within the Nile River Valley: Geochemical and Radiogenic Isotope Perspectives. *Bioarchaeology International*, DOI: 10.5744/bi.2022.0024.
- [J-172] de Assis Janasi V, Martins L, Alves A, **Simonetti A**, Henrique-Pinto R (2023). The Neoproterozoic Agudos Grandes granitic batholith, SE Brazil: Inferences on source areas

- from elemental and Sr-Nd-Pb isotope geochemistry. *Journal of South American Earth Sciences*, doi: <https://doi.org/10.1016/j.jsames.2023.104570>.
- [J-171] Cordeiro P, Matias dos Santos A, Steed G, de Araújo Silva A, Meere P, Corcoran L, **Simonetti A**, Unitt R (2023). The carbonate-hosted Gortdrum Cu-Ag($\pm$ Sb-Hg) deposit, SW Ireland: C-O-Sr-Nd isotopes and whole-rock geochemical signatures. *Journal of Geochemical Exploration*, **248**: 107196.
- [J-170] Valeriano C, Turbay C, Bruno H, **Simonetti A**, Heilbron, Bersan S, Strachan R (2022). Paleo- and Mesoarchean TTG-sanukitoid to high-K granite cycles in the southern São Francisco craton, SE Brazil. *Geoscience Frontiers*, **13**(5): 101372. [10.1016/j.gsf.2022.101372](https://doi.org/10.1016/j.gsf.2022.101372).
- [J-169] Almeida VV, de Assis Janasi V, Faleiros FM, **Simonetti A**, Moraes R (2022). Composition and thermal evolution of the lithospheric mantle beneath the Ribeira Belt, SE Brazil: Evidence from spinel peridotite xenoliths. *International Journal of Earth Sciences*, **DOI**: [10.1007/s00531-022-02171-8](https://doi.org/10.1007/s00531-022-02171-8).
- [J-168] **Kuebler, C@**, **Simonetti A**, Simonetti SS, Martin RF (2022). Boron isotope compositions establish the origin of marble from metamorphic complexes: Québec, New York, and Sri Lanka. *American Mineralogist*, **107**: 15–30.
- [J-167] **Çimen O⁺**, Hasim A, **Kuebler C@**, **Simonetti A**, **Corcoran L⁺**, Simonetti S, Çolak T, Inal S, Donmez C (2022). Geochemical, isotopic and U-Pb geochronological investigation of the late Cretaceous Karaçayır carbonatite (Sivas, Turkey): Insights into mantle sources within a post-collisional tectonic setting. *Ore Geology Reviews*, **141**: 104650. doi.org/10.1016/j.oregeorev.2021.104650.
- [J-166] Lu J, Chen W, Zhang W, Liu H, **Simonetti A**, Hu Z, Liu Y, Zhao K, Jiang S (2022). Determination of carbon isotopes in carbonates (calcite, dolomite, magnesite, and siderite) by femtosecond laser ablation multi-collector ICP-MS. *Journal of Analytical Atomic Spectrometry*, **DOI**: [10.1039/d1ja00356a](https://doi.org/10.1039/d1ja00356a).
- [J-165] **Simonetti A**, Buzon MR, **Corcoran L⁺**, Breidenstein AM, Emberling G (2021). Trace element and Pb and Sr isotope investigation of tooth enamel from archaeological remains at El-Kurru, Sudan: Evaluating the role of groundwater-related diagenetic alteration. *Applied Geochemistry*, **132**: 105068. <https://doi.org/10.1016/j.apgeochem.2021.105068>.
- [J-164] Cooper HK, **Simonetti A** (2021). Lead Isotope Analysis of Geological Native Copper: Implications for Archaeological Provenance Research in the North American Arctic and Subarctic. *Minerals*, **11**: 667 <https://doi.org/10.3390/min11070667>.
- [J-163] Banerjee A, Chakrabarti R, **Simonetti A** (2021). Temporal evolution of $\delta^{44/40}\text{Ca}$ and $^{87}\text{Sr}/^{86}\text{Sr}$ of carbonatites: implications for crustal recycling through time. *Geochimica et Cosmochimica Acta*, **307**: 168–191.

- [J-162] Silva AA, Cordeiro P, Johnson SC, Lagoeiro LE, **Corcoran L⁺**, **Simonetti A**, Meere P, Unitt R, Stingelin L, Santos AM (2021). The Carbonate-Hosted Tullacondra Cu-Ag Deposit, Mallow, Ireland. *Minerals*, **11**: 560. <https://doi.org/10.3390/min11060560>.
- [J-161] Smart KA, Tappe S, Woodland AB, Harris C, **Corcoran L⁺**, **Simonetti A** (2021). Metasomatized eclogite xenoliths from the central Kaapvaal craton as probes of a seismic mid-lithospheric discontinuity. *Chemical Geology*, **578**: 120126.
- [J-160] Lu J, Chen W, Jiang S-Y, Zhao K-D, **Simonetti A**, Pi D-H (2021). In-situ sulfur isotopic analysis of sulfate by laser ablation multiple collector inductively coupled plasma mass spectrometry (LA-MC-ICP-MS). *Atomic Spectroscopy*, **41**: 223-233.
- [J-159] **Kuebler C[@]**, **Simonetti A**, Chen W, Simonetti SS (2020). Boron isotopic investigation of the Bayan Obo carbonatite complex: Insights into the source of mantle carbon and hydrothermal alteration. *Chemical Geology*, **557**: 119859.
- [J-158] **Çimen O⁺**, **Corcoran L⁺**, **Kuebler C[@]**, Simonetti SS, **Simonetti A** (2020). Geochemical, stable (O, C and B) and radiogenic (Sr, Nd, Pb) isotopic data from the Eskişehir-Kızılcaören (NW-Anatolia) and the Malatya-Kuluncak (E-central Anatolia) F-REE-Th deposits, Turkey: Implications for nature of carbonate-hosted mineralization. *Turkey Journal of Earth Sciences*, **29**: 798-814.
- [J-157] Ying Y-C, Chen W, **Simonetti A**, Jiang S-Y, Zhao K-D (2020). Significance of hydrothermal reworking for REE mineralization associated with carbonatite: Constraints from in situ trace element and C-Sr isotope study of calcite and apatite from the Miaoya carbonatite complex (China). *Geochimica et Cosmochimica Acta*, **280**: 340-359.
- [J-156] **Corbett E[@]**, **Simonetti A**, Shaw P, **Corcoran L⁺**, Crowley QC, Hoare B (2020). Shallow sampling by multi-shot laser ablation and its application within U-Pb zircon geochronology. *Chemical Geology*, **544**: 119568.
- [J-155] **Dorais C[@]**, **Simonetti A**, **Corcoran L⁺**, **Spano TL⁺**, Burns PC (2020). Happy Jack uraninite: a new reference material for high spatial resolution analysis of U-rich matrices. *Geostandards and Geoanalytical Research*, **44**: 125-132.
- [J-154] **Lewis SR[@]**, **Simonetti A**, **Corcoran L⁺**, Simonetti SS, **Dorais C[@]**, Burns PC (2020). The role of continental crust in the formation of uraninite-based ore deposits. *Minerals, Special Issue: Nuclear Forensic Applications in Geoscience and Radiochemistry*, **10**: 136.
- [J-153] **Corcoran L⁺** and **Simonetti A** (2020). Geochronology of uraninite revisited. *Minerals, Special Issue: Nuclear Forensic Applications in Geoscience and Radiochemistry*, **10**: 205.
- [J-152] Chen W, Liu H-Y, Lu J, Jiang S-Y, **Simonetti A**, Xu C, Zhang W (2020). The formation of the ore-bearing dolomite from the giant Bayan Obo REE-Nb-Fe deposit, Inner Mongolia: Insights from micron-scale geochemical data. *Mineralium Deposita*, **55**: 131–146.

- [J-151] **Çimen O⁺, Kuebler C[@], Simonetti SS, Corcoran L⁺, Mitchell R, Simonetti A** (2019). Combined boron, radiogenic (Nd, Pb, Sr), stable (C, O) isotopic and geochemical investigations of carbonatites from the Blue River Region, British Columbia (Canada): Implications for mantle sources and recycling of crustal carbon. *Chemical Geology*, **529**: 119240.
- [J-150] **Corcoran L⁺, Simonetti A, Spano TL⁺, Lewis SR[@], Dorais C[@], Simonetti S, Burns PC** (2019). Multivariate analysis based on geochemical, isotopic, and mineralogical compositions of uranium-rich samples. *Minerals, Special Issue: Nuclear Forensic Applications in Geoscience and Radiochemistry*, **9**: 537.
- [J-149] **Spano TL⁺, Simonetti A, Corcoran L⁺, Smith PA, Lewis S[@], Burns PC** (2019). Comparative Chemical and Structural Analysis of Two Uranium Dioxide Fuel Pellets. *Journal of Nuclear Materials*, **518**: 149-161.
- [J-148] **Vilalva FCJ[@], Simonetti A, Vlach SRF** (2019). Insights on the origin of the Graciosa A-type granites and syenites (Southern Brazil) from zircon U-Pb geochronology, chemistry, and Hf and O isotope compositions. *Lithos*, **340-341**: 20-33.
- [J-147] Heilbron M, Olivera C, Lobato M, Valeriano de Morisson C, Dussin I, Dantas E, **Simonetti A**, Bruno H, Corrales F, Socoloff E (2019). The Barreiro suite in the central Ribeira Belt (SE-Brazil): A late Tonian tholeiitic intraplate magmatic event in the distal passive margin of the São Francisco Paleocontinent. *Brazilian Journal of Geology*, **49(2)**: e20180129.
- [J-146] Lamere E, Couder M, Beard M, Simon A, **Simonetti A**, Skulski M, Seymour G, Huestis P, Manukyan K, Meisel Z, Morales L, Moran M, Moylan S, Seymour C, Stech E (2019). Proton-induced reactions on molybdenum. *Physical Review C* **100**, 034614 1-13.
- [J-145] Schrader SA, Buzon MR, **Corcoran L⁺, Simonetti A** (2019). Intraregional ⁸⁷Sr/⁸⁶Sr variation in Nubia: New insights from the Third Cataract. *Journal of Archaeological Science: Reports*, **24**: 373-379.
- [J-144] **Çimen O⁺, Kuebler C[@], Monaco B^{*}, Simonetti SS, Corcoran L⁺, Chen W, Simonetti A** (2018). Boron, carbon, oxygen and radiogenic isotope investigation of carbonatite from the Miaoya complex, central China: Evidences for late-stage REE hydrothermal event and mantle source heterogeneity. *Lithos*, **322**: 225-237.
- [J-143] **Lewis SR[@], Simonetti A, Corcoran L⁺, Spano TL⁺, Chung BW, Teslich NE, Burns PC** (2018). Characterization of uraninite using FIB-SEM approach and its implications for LA-ICP-MS analyses. *Journal of Radioanalytical and Nuclear Chemistry*, **318**: 1389-1400.
- [J-142] Schurr MR, **Donohue PH⁺, Simonetti A, Dawson E** (2018). Multi-Element and Lead Isotope Characterization of Early Nineteenth Century Pottery Sherds from Native American and Euro-American Sites. *Journal of Archaeological Science: Reports*, **20**: 390-399.

- [J-141] **Çimen O@**, Göncüoğlu MC, **Simonetti A**, Sayıt K (2018). New zircon U-Pb LA-ICP-MS ages and Hf isotope data from the Central Pontides: Geological and geodynamic constraints. *Journal of Geodynamics*, **116**: 23-36.
- [J-140] Olds TA, Plášil J, Kampf AR, **Spano TL@**, Haynes P, Carlson SM, Burns PC, **Simonetti A**, Mills OP (2018). Leesite, $K(H_2O)_2[(UO_2)_4O_2(OH)_5] \cdot 3H_2O$, a new K-bearing schoepite-family mineral from the Jomac mine, San Juan County, Utah, USA. *American Mineralogist*, **103**: 143-150.
- [J-139] **Peixoto C@**, Heilbron M, Ragatkya D, Armstrong R, Dantas E, Valeriano C, **Simonetti, A** (2017). Tectonic evolution of the juvenile Tonian Serra Da Prata magmatic arc in the Ribeira Belt, SE Brazil: Implications for early west Gondwana amalgamation. *Precambrian Research*, **302**: 221-254.
- [J-138] Olds TA, Plášil J, Kampf AR, **Simonetti A**, Sadergaski LR, Chen Yu-S, Burns PC (2017). Ewingite: Earth's most complex mineral. *Geology*, **45**: 1007-1010. (Impact Factor: 5.047)
- [J-137] **Balboni E+**, **Simonetti A**, **Spano TL@**, **Cook ND***, Burns PC (2017). Rare earth element fractionation in uranium ore and its U(VI) alteration. *Applied Geochemistry*, **87**: 84-92.
- [J-136] **Spano TL@**, **Simonetti A**, **Balboni E+**, **Dorais C@**, Burns PC (2017). Trace element and U isotope analysis of uraninite and ore concentrate: Applications for nuclear forensic investigations. *Applied Geochemistry*, **84**: 277-285.
- [J-135] **Çimen O@**, Göncüoğlu MC, **Simonetti A**, Sayıt K (2017). Whole rock geochemistry, Zircon U-Pb and Hf isotope systematics of the Çangaldağ Pluton: Evidences for Middle Jurassic Continental Arc Magmatism in the Central Pontides, Turkey. *Lithos*, **290-291**: 136-158.
- [J-134] **Spano TL@**, **Simonetti A**, **Wheeler T***, Carpenter G, Freet D, **Dorais C@**, **Balboni E+**, Burns PC (2017). A novel nuclear forensic tool involving deposit type normalized rare earth element signatures. *Terra Nova*, **29**: 294-305.
- [J-133] **Lussier AJ+**, Rouvimov S, Burns PC, **Simonetti A** (2017). Nuclear-blast induced nanotextures in quartz and zircon within Trinitite. *American Mineralogist*, **102**: 445-460.
- [J-132] **Koeman EC@**, McNamara BK, Smith FN, **Simonetti A**, Burns PC (2017). Developing methodologies for source attribution: Glass phase separation in Trinitite using NF_3 . *Radiochimica Acta*, **105**: 417-430. (Impact Factor: 1.286)
- [J-131] Smart KA, Tappe S, **Simonetti A**, Simonetti SS, Woodland A, Harris C (2017). Tectonic significance and redox state of Paleoproterozoic eclogite and pyroxenite components in the

- Slave cratonic mantle lithosphere, Voyageur kimberlite, Arctic Canada. *Chemical Geology*, **455**: 98-119.
- [J-130] Potter NJ, Kamenetsky VS, **Simonetti A**, Goemann K (2017). Different types of liquid immiscibility in carbonatite magmas: a case study of the Oldoinyo Lengai 1993 lava and melt inclusions. *Chemical Geology*, **455**: 376-384.
- [J-129] **Hulett SRW@**, **Simonetti A**, Rasbury ET, Hemming NG (2016). Recycling of subducted crustal components into carbonatite melts revealed by boron isotopes. *Nature Geoscience*, **9**: 904-908.
- [J-128] **Donohue PH+**, **Simonetti A** (2016). Vesicle size distribution as a novel nuclear forensics tool. *PLoS ONE*. 11(9): e0163516. DOI:10.1371/journal.pone.0163516.
- [J-127] **Balboni E+**, **Jones N***, **Spano T@**, **Simonetti A**, Burns PC (2016). Chemical and Sr isotopic characterization of North American uranium ores: nuclear forensic applications. *Applied Geochemistry*, **74**: 24-32.
- [J-126] **Chen W@**, Zhang W, **Simonetti A**, Jiang SY (2016). Mineral chemistry of melanite from calcitic ijolite, the Oka carbonatite complex, Canada: Implication for multi-pulse magma mixing. *Journal of Earth Science*, **27**: 599-610.
- [J-125] **Dustin MK***, **Koeman EC@**, **Simonetti A**, **Torrano Z***, Burns PC (2016). Comparative investigation between in-situ laser ablation- vs. bulk sample (solution mode)-ICP-MS analysis of Trinitite post-detonation materials. *Applied Spectroscopy*, **70**: 1446-1455.
- [J-124] Buzon MR, Smith S, **Simonetti A** (2016). Entanglement and the Formation of Ancient Nubian Napatan State. *American Anthropologist*, **118**: 284-300.
- [J-123] **Vilalva FCJ@**, Vlach SRF, **Simonetti A** (2016). Chemical and O-isotope compositions of amphiboles and clinopyroxenes from A-type granites of the papanduva pluton, South Brazil: insights into late- to post-magmatic evolution of peralkaline systems. *Chemical Geology*, **420**: 186-199.
- [J-122] **Koeman EC@**, **Simonetti A**, Burns PC (2015). Sourcing of copper and lead within red inclusions from Trinitite post-detonation material. *Analytical Chemistry*, **87**: 5380-5386.
- [J-121] Meredith NA, Sigmon GE, **Simonetti A**, Burns PC (2015). Structural and morphological influence on neptunium incorporation in uranyl molybdates. *Crystal Growth and Design*, **15**: 5293-5300.
- [J-120] Hui H, Peslier AH, Rudnick RL, **Simonetti A**, Neal CR (2015). Plume-cratonic lithosphere interaction recorded by water and other trace elements in peridotite xenoliths from the Labait volcano, Tanzania. *Geochemistry, Geophysics, Geosystems*, **16**: DOI:10.1002/2015GC005779.

- [J-119] **Donohue PH⁺, Simonetti A, Koeman EC@, Mana S⁺**, Burns PC (2015). Nuclear forensic applications involving high spatial resolution analysis of Trinitite cross-sections. *Journal of Radioanalytical and Nuclear Chemistry*, **306**: 457-467.
- [J-118] **Chen W@, Simonetti A** (2015). Isotopic (Pb, Sr, Nd, C, O) evidence for plume-related sampling of an ancient, depleted mantle reservoir. *Lithos*, **216-217**: 81-92.
- [J-117] Moroskat M, Gleeson SA, Sharp RJ, **Simonetti A**, Gallagher CJ (2015). The geology of the carbonate-hosted Blende Ag–Pb–Zn deposit, Wernecke Mountains, Yukon, Canada. *Mineralium Deposita*, **50**: 83-104.
- [J-116] Mirnejad H, **Simonetti A**, Molasalehi F (2015). Origin and formational history of some Pb-Zn deposits from Alborz and Central Iran: Pb isotope constraints. *International Geology Review*, **57**: 463-471.
- [J-115] **Chen W@, Simonetti A** (2014). Evidence for the multi-stage petrogenetic history of the Oka carbonatite complex (Quebec, Canada) as recorded by perovskite and apatite. *Minerals*, **4**: 437-476.
- [J-114] Pirajno F, González-Álvarez I, **Chen W@, Simonetti A**, leGrass M (2014). The Gifford Creek Ferrocarnatite Complex, Gascoyne Province, Western Australia: Associated fenitic alteration and a putative link with the ~1075 Ma Warakurna LIP. *Lithos*, **202-203**: 100-119.
- [J-113] **Bellucci JJ⁺, Simonetti A, Koeman EC@, Wallace C@**, Burns PC (2014). A Detailed Geochemical Investigation of Post Nuclear Detonation Trinitite Glass at High Spatial Resolution: Delineating Anthropogenic vs. Natural Components. *Chemical Geology*, **365**: 69-86.
- [J-112] Smart KA, Chacko T, **Simonetti A**, Sharp ZD, Heaman LM (2014). A record of - Paleoproterozoic subduction preserved in the northern Slave cratonic mantle: Sr-Pb-O isotope and trace-element investigations of eclogite xenoliths from the Jericho and Muscox kimberlites. *Journal of Petrology*, **55**: 549-583.
- [J-111] Waldron J, Schofield D, DuFrane SA, Floyd J, Crowley Q, **Simonetti A**, Dokken R, Pothier H (2014). Ganderia-Laurentia collision in the Caledonides of Great Britain and Ireland. *Journal of the Geological Society*, **168**: 83-98.
- [J-110] **Chen W@, Simonetti A**, Burns PC (2013). A combined geochemical and geochronological investigation of niocalite from the Oka carbonatite complex, Canada. *The Canadian Mineralogist*, **51**: 785-800.
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8. OTHER PUBLICATIONS – GOVERNMENT REPORTS

Eccles DR, **Simonetti A** (2008). A study of peridotitic garnet xenocryst compositions from selected ultramafic bodies in the northern Alberta kimberlite province: implications for mantle stratigraphy and garnet classification. Alberta Energy and Utilities Board, ERCB/AGS Earth Science Report No. 2008-01, 40 p.

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Moroskat M, Erdmer P, **Simonetti A**, Jackson VA (2007). In-situ LA-MC-ICP-MS study of ‘Mattberry’ granite, Mattberry Lake, southern Wopmay Orogen, NWT. NWT Geoscience Office, NWT Open Report 2007-003, 13 p.

9. INVITED LECTURES AND ADDRESSES

- [IV-18] December 4th-5th, 2021- **Invited Speaker**, presented lectured entitled, “*Assessing the Impact of Holocene Climate Change on Bioavailable Elements, Nile River Valley: A Trace and Isotope Geochemistry Perspective*”. Conference on Coping with Changing Climates in Early Antiquities: Comparative Approaches Between Empiricism and Theory, December 4-5th, 2021, University of Chicago, IL.
- [IV-17] August 17th- 24th, 2019 – **Keynote Speaker** in session 04f entitled: “*The Geochemistry of Nuclear Materials: Insights from High Spatial Resolution and High Precision Analysis*”. 2019 VM Goldschmidt Conference, August 18th- 23rd, 2019, Barcelona, Spain.
https://goldschmidt.info/2019/program/programViewThemes#session_453_3959
- [IV-16] December 8th -9th , 2017 – **Vadodara, India**, International Seminar on Carbonatites, organized by Gujarat Mineral Development Corporation (GMDC) in association with the Physical Research Laboratory (PRL), a unit of Dept. of Space, Govt. of India. Seminar entitled, “*Nd, Sr, Pb and B isotopic investigation of carbonatite/alkaline centers in west-central India: Insights into plume-driven vs. lithospheric-controlled magmatism*”.
- [IV-15] November 3, 2017 – **Miami University, Oxford (OH)**, Department of Geology & Environmental Earth Science, Fall Seminar Series, “*Isotopic evidence for subducted crustal components into carbonatite melts*”
- [IV-14] October 16th -24th, 2015 – **China University of Geosciences, Wuhan, China** and **Nanjing University**, Department of Earth Sciences and Environmental Engineering, **Nanjing, China** – **presented 3 lectures** in total (2 at Wuhan and 1 in Nanjing) – lectures were entitled, 1-“*Kimberlites and associated mantle xenoliths*”, 2- “*Carbonatites: chemical and isotopic messengers of the upper mantle*” (presented twice).
- [IV-13] July 2nd, 2015 – Nuclear and Radiochemistry Summer School (NCSS), **Brookhaven National Laboratory, Long Island, NY**. I presented a seminar entitled, “*Developing Spatially Resolved Chemical and Isotopic Capabilities for Forensic Source Attribution*”.
- [IV-12] December 10th -15th, 2013 – **Masaryk University, Brno, Czech Republic**, Department of Analytical Chemistry – **presented 4 lectures** as part of the “Innovative Lecture Series in Analytical Chemistry” – lectures were entitled, 1-“*Combined chemical, isotopic and geochronological analysis of accessory minerals at high spatial resolution- insights into mantle sources and melt crystallization history*”; 2- “*Elemental and Sr isotope investigations of human tooth enamel by laser ablation-(MC)-ICP-MS: Successes and pitfalls & anthropological applications*”; 3- “*Data reduction protocols- isotope ratio measurement*”; and 4- “*Non-proliferation and nuclear forensics: detailed, multi-analytical investigation of Trinitite post-detonation materials*”.
- [IV-11] September 29th – October 14th, 2012 – **University of Sao Paulo, Sao Paulo, Brazil**, Department of Geosciences – presented **8 hours of lectures** during a week-long workshop that I led and was focused on “*Laser ablation- and solution mode-MC-ICP-MS applications*”

- [IV-10] March 30th, 2012 - Department of Geological Sciences, **Ball State University, Indiana, USA** – seminar entitled, “*Carbonatites – isotopic and chemical messengers of the lithosphere or convecting asthenosphere?*”
- [IV-9] November 16th – 19th, 2011 – **University of British Columbia, Vancouver, Canada** – I presented **2 seminars**, which were entitled – 1- “*Carbonatites - chemical and isotopic messengers of the convecting (asthenospheric) mantle?*”, and 2- “*In-situ U-Pb dating of (biogenic and inorganic) apatite by LA-ICP-MS: successes and pitfalls*”.
- [IV-8] March 2008 – **University of Calgary, Alberta, Canada** – “*Unraveling the chemical and isotopic code of minerals: examples of innovative research at the micron-scale using laser ablation-MC-ICP-MS*”
- [IV-7] July 2005 – **Centre de Recherches Pétrographiques et Géochimiques (CRPGP), Nancy, France** - “*Eclogite mantle xenolith occurrences within diamondiferous kimberlites, Slave Province (Canada)*”
- [IV-6] June 2005 – **Dept. Mineralogy, Paris 6 University, France** – “*Eclogite mantle xenolith occurrences within diamondiferous kimberlites, Slave Province (Canada)*”
- [IV-5] July 1998 – **Centre de Recherches Pétrographiques et Géochimiques (CRPGP), Nancy, France** – “*Tracing long-range atmospheric pollution within northeastern North America*”
- [IV-4] October 1996 - Dept. Earth Sciences, **Carleton University, Ottawa, Canada** - “*Pb-Hf isotope systematics of Fe-Mn deposits within the North Atlantic Ocean: implications for deep water circulation*”
- [IV-3] October 1996 - GEOTOP – UQAM, **Montréal, Canada** – “*Pb-Hf isotope systematics of Fe-Mn deposits within the North Atlantic Ocean: implications for deep water circulation*”
- [IV-2] February 1996 - Dept. Geology, **Stony Brook University, NY** – “*Isotope systematics of carbonatite/alkaline centers of India*”
- [IV-1] November 1995 - Dept. Mineralogy, **Hamburg University, Germany** – “*Alkaline magmatism associated with the Deccan igneous province*”

10. GRANTS AND SPONSORED PROGRAM

[G-12] NASA – Emerging Worlds C.2 (NNH23ZDA001N-EW) – PENDING

Period: June 2024 – May 2028

Topic: Late-stage lunar magma ocean heterogeneity: Understanding variations in the geochemical signature of KREEP

Role: co-Principal Investigator

Lead-PI: Dr. Clive Neal

Award: \$3,709,217; UND component ~\$2,000,000.

[G-11] Beijing Global Gateway – Asia Research Collaboration Grant, University of Notre Dame

Period: September 2021 – August 2022

Topic: Investigating REE Mineralization within Fenite Alteration Zones

Role: Lead Principal Investigator

Co-PIs: Dr. Cheng Xu (School of Earth and Space Sciences, Peking University, Beijing),

Dr. Wei Chen (State Key Laboratory of Geological Processes and Mineral Resources, China University Geosciences, Wuhan)

Award: \$9977.00

[G-10] National Science Foundation – BCS Archaeometry PD 98-1391

Period: July 2019 – June 2023 (1-year no cost extension)

Topic: Collaborative Research: Assessing the Impact of Holocene Climate Change on Bioavailable Strontium Within the Nile River Valley

Role: Lead Principal Investigator

Co-PI: Dr. Michele R. Buzon (Purdue University)

Award: \$88,381.00

[G-9] Luksic Family Foundation Grant ND/Open Seed Fund PUC

Period: January 2019 – January 2020

Topic: Rare Metal Ore Formation Processes Associated with Carbonatites

Role: Lead Principal Investigator

Co-PI: Dr. Pedro Cordeiro, Dept. Mining Engineering, Pontificia Universidad Católica de Chile

Award: \$19,000.00

[G-8] Department of Homeland Security 2014-DN-077-ARI082-01

Period: October 2014 – September 2019 (no cost extension until August 2021)

Topic: Advancement of Nuclear Forensic Science

Role: Lead Principal Investigator

Co-PIs: Drs. A. Hixon, P.C. Burns (UND)

Award: \$1,555,187.00

[G-7] National Science Foundation Archaeology (Division of Behavioral and Cognitive Science 1359210)

Period: August 2014 – July 2018

Topic: Collaborative Research: Impact and Accommodation through Cultural Contact
Role: Co-Principal Investigator with Dr. Michele R. Buzon (Purdue University)
Award: \$135,272.00

[G-6] Department of Energy/National Nuclear Security Agency (DOE-NA0001112)
Period: July 2011 – June 2015
Topic: Multi-Scale Separation and Analysis of Heterogeneous Trinitite Phases Proliferation Detection Research
Role: Lead Principal Investigator
Co-PIs: Drs. P.C. Burns (UND) and B. McNamara (Pacific Northwest National Laboratory)
Award: \$885,471.00

[G-5] National Science Foundation (EAR-0923249)
Period: July 2009 – June 2010
Topic: Major Research Instrumentation: “Acquisition: Establishment of the Midwest Isotope and Trace Element Research Analytical Center (MITERAC)”
Role: Co-Principal Investigator with Dr. C. Neal (UND)
Award: \$1,159,219.00

[G-4] Natural Sciences and Engineering Research Council of Canada
Period: July 2007 – June 2011
Topic: Major Resources Support Infrastructure Grant Radiogenic Isotope Facility
Role: Co-Principal Investigator with 9 other faculty members at the University of Alberta
Award: \$450,000.00

[G-3] Stollery Children’s Hospital Foundation
Period: 2006 (4-month pilot study)
Topic: *Is lead a concern in Autistic Children?*
Role: Co-Principal Investigator with Brenda Clark et al. (and 4 other researchers)
Award: \$30,000.00

[G-2] NATEQ Infrastructure for Research Centers Program
Period: 2002-2005
Topic: GEOTOP Infrastructure Grant
Role: Co-Principal Investigator (along with ~20 researchers; J.C. Mareschal lead investigator)
Award: \$1,360,000.00

[G-1] Toxic Substance Research Initiative (Health and Environment Canada)
Period: 1999-2001
Topic: *Physical & Chemical Evolution of Aerosols in Smelter and Power Plant Plumes*
Role: Co-Principal Investigator with C. Gariépy
Award: \$30,000.00

Collaborative Research Grants (since 2012)

The following are funds received through **collaborative research** endeavors with external colleagues that required use of the sophisticated and state-of-the-art ICP-MS instrumentation housed within MITERAC. Since these are deemed collaborative research projects, all work produced **have resulted in peer-reviewed publications subsequent discussion and my scientific input and interpretations** (these are listed in peer-reviewed publications list).

***Award total includes 54.5% F&A charge by The Office of Research.*

[CRG-16] Investigation of industrial raw materials for Central Anatolian Magmatics

Period: 02/2019 – 12/2019

Topic: Research work involves conducting trace element and isotopic analyses within MITERAC

Funding: General Directorate of Mineral Research and Exploration, Government of Turkey

Award: \$5033.61

[CRG-15] Geochemical, isotopic and geochronological investigation of the Magnet Cove Carbonatite Complex, Arkansas

Period: 01/2019 – 07/2020

Topic: Research work involves conducting trace element and isotopic analyses within MITERAC

Funding: Ministry of National Education, Government of Turkey

Award: \$4802.00

[CRG-14] Geochemical and isotopic investigation of Gortdrum and Tullacondra Terranes, Ireland

Period: 01/2019 – 12/2019

Topic: Research work involves conducting trace element and isotopic analyses within MITERAC

Funding: Collaboration with Dr. Pedro Cordeiro, Dept. of Mining Engineering, Pontifica University of Chile (PUC)

Award: \$1606.00

[CRG-13] In-situ Pb isotopic compositions of mantle xenoliths

Period: 2017

Topic: Conducting in-situ Pb isotope analyses by LA-MC-ICP-MS on clinopyroxene mineral separates from mantle xenoliths

Role: Co-investigator with Dr. Katie Smart, University of Witwatersrand, South Africa

Award: \$784.86

[CRG-12] In-situ U-Pb dating of zircons: Determining the age of the Shietian Gneissose Granite, Egypt

Period: 2017

Topic: Conducting in-situ U-Pb isotope analyses by LA-MC-ICP-MS on zircons from the Shietian Gneissose Granite, Egypt

Role: Co-investigator with Dr. Kirsten Nicholson from Ball State University

Award: \$1177.29

[CRG-11] Impact and Accommodation through Cultural Contact

Period: 2017

Topic: Conducting Sr isotope analyses by solution mode-MC-ICP-MS on tooth enamel from fossilized human teeth.

Role: Co-investigator with Dr. Michele Buzon from Purdue University

Award: \$2,190.00

[CRG-10] Impact and Accommodation through Cultural Contact

Period: 2017

Topic: Conducting Sr isotope analyses by solution mode-MC-ICP-MS on tooth enamel from fossilized human teeth.

Role: Co-investigator with Dr. Sarah Schrader, Dept. Anthropology, Leiden University, The Netherlands

Award: \$2,790.00

[CRG-9] Provenance and metamorphic overprint of the Neoproterozoic metasedimentary sequences of the Central Ribeira belt, SE Brazil: tectonic implications for Western Gondwana amalgamation

Period: 2017

Topic: Conducting in-situ U-Pb and Hf isotope analyses by LA-MC-ICP-MS on zircon.

Role: Co-investigator with Drs. Monica Heilbron and Claudio Valeriano, Rio de Janeiro State University, Rio de Janeiro, Brazil

Award: \$3,924.30

[CRG-8] The Parana-Etendeka Magmatic Province in Brazil: Temporal and Petrologic Relationships Between the Tholeiitic and Alkaline Magmatism and Geodynamic Implications

Period: 2017

Topic: Conducting in-situ Sr and Hf isotope analyses by LA-MC-ICP-MS on clinopyroxene and zircon, respectively.

Role: Co-investigator with Dr. Sylvio Vlach from Sao Paulo University, Sao Paulo, Brazil

Award: \$6,952.50

[CRG-7] The U-Pb Geochronology of the Meta-Magmatic Rocks within the Cangalda, Complex (Kastamonu-Turkey)

Period: 2015

Topic: Conducting in-situ U-Pb and Hf isotope analyses by LA-MC-ICP-MS on zircon.

Role: Co-investigator with Okay Çimen from Middle Eastern Technical University (METU), Turkey

Award: \$9,196.00

[CRG-6] Impact and Accommodation through Cultural Contact

Period: 2015

Topic: Conducting Sr isotope analyses by solution mode-MC-ICP-MS on tooth enamel from fossilized human teeth.

Role: Co-investigator with Dr. Michele Buzon from Purdue University

Award: \$2,460.00

[CRG-5] Origin and Evolution of Magmatism Associated with the Sorocaba Granite Massif, Sao Paolo, Brazil

Period: 2014

Topic: Conducting in-situ U-Pb and Hf isotope analyses by LA-MC-ICP-MS on zircon.

Role: Co-investigator with Dr. Sylvio Vlach from Sao Paolo University, Sao Paolo, Brazil

Award: \$2,580.50

[CRG-4] Multi-element and Pb isotope characterization of early nineteenth century pottery sherds

from Native American and Euro-American sites

Period: 2014

Topic: Conducting in-situ trace element and Pb isotope analyses by LA-MC-ICP-MS on pottery sherds.

Role: Co-investigator with Dr. Mark Schurr, Dept. Anthropology, UND

Award: \$750.00

[CRG-3] A Preliminary ICP-MS Analysis of Geological and Archaeological Materials from Southeast Utah

Period: 2014

Topic: Conducting trace element analyses of bulk samples of sediments and pottery samples

Role: Co-investigator with Dr. Steve Di Naso from Eastern Illinois University

Award: \$1,084.00

[CRG-2] The Parana-Etendeka Magmatic Province in Brazil: Temporal and Petrologic Relationships Between the Tholeiitic and Alkaline Magmatism and Geodynamic Implications

Period: 2013

Topic: Conducting in-situ trace element and Sr and Pb isotope analyses by LA-MC-ICP-MS on clinopyroxenes.

Role: Co-investigator with Dr. Cristina de Ignacio from Complutense University, Madrid, Spain

Award: \$6,127.50

[CRG-1] A Preliminary ICP-MS Analysis of Geological and Archaeological Materials from Southeast Utah, National Park Service

Period: 2013

Topic: Conducting trace element analyses of bulk samples of sediments and pottery samples

Role: Co-investigator with Dr. Steve Di Naso from Eastern Illinois University

Award: \$464.00

11. MASTER'S THESES DIRECTED

Graduated students at Notre Dame:

[SM-3] Ömer Özkaya, MS (August 2018 – December 2020)

Awards: Ministry of National Education, Republic of Turkey, 2-year postgraduate award.

Funding: This postgraduate award covers his stipend and tuition fees along with ancillary costs.

Thesis: Geochemical, Isotopic and Geochronological Investigation of the Magnet Cove Carbonatite Complex, Arkansas, USA

Placement: Geological Engineer, General Directorate of Mineral Research and Exploration (Feb. 2021- present)

[SM-2] Stefanie R. Lewis, MS (August 2016 - September 2018)

Thesis: Geochemical and isotopic constraints for uraninite formation: implications for nuclear forensic analyses

[SM-1] Samuel Hulett, MS (August 2013- January 2016)

Thesis: Boron abundances and isotope systematics of carbonatites from worldwide sources

Placement: Geochemist Consultant

12. DOCTORAL DISSERTATIONS – DIRECTED

Current graduate students at Notre Dame:

- [SD-15] Stu Webb, PhD, co-supervised (as of 01/2023) with Dr. Clive Neal
Thesis: Textural and Geochemical Evaluation of Lunar and Martian Rock Samples

Graduated students at Notre Dame:

- [SD-14] Eoghan Corbett, PhD (Completed August 2021), co-supervised with Dr. Quentin Crowley, Trinity College Dublin, Ireland
Awards: Naughton Graduate Fellowship, TCD-ND
Funding: Naughton Fellowship Award- \$70,000 dollars for 2 years for tenure at Notre Dame; TCD is responsible for support for the remaining years
Thesis: Refinement of high-spatial resolution U-Pb geochronological methodologies
- [SD-13] Corinne Kuebler, PhD (Completed April 2021)
Awards: 2020 Harriet Evelyn Wallace Scholarship by the American Geosciences Institute (AGI).
Thesis: Boron isotope signatures of carbonatites: novel insights into magmatic carbonate processes and deep mantle flux.
Placement: Recipient of NNSA Postdoctoral Fellowship position at Sandia National Laboratory, Albuquerque, NM.
- [SD-12] Corinne Dorais, PhD (Completed April 2019), co-supervised with Dr. Amy Hixon
Awards: National Nuclear Security Administration (NNSA) Graduate Fellowship (\$60,000 award); Corinne spent year 3 of her thesis at Lawrence Livermore National Laboratory conducting nuclear forensics research.
Thesis: Development of matrix-matched standards for in-situ, high spatial resolution analyses of nuclear materials for forensic signatures
Placement: Since July 2019, Postdoctoral Research Associate, Center for Accelerator Mass Spectrometry, Lawrence Livermore National Laboratory, Livermore, CA
- [SD-11] Tyler Spano-Franco, PhD (August 2012 - September 2017), co-supervised with Dr. Peter Burns
Thesis: Uranyl Vanadate Mineralogy and Nuclear Forensic Analysis of Uranium Rich Materials
Placement: Since Dec. 2018, Research Scientist, Oakridge National Laboratory, Oakridge, TN
- [SD-10] Elizabeth C. Koeman, PhD (July 2011- Completed June 2015)
Thesis: A multi-analytical approach for developing nuclear forensic methods for source attribution using Trinitite post-detonation material
Placement: Assistant Professor, Dept. Physics & Geosciences, Angelo State University (TX)

- [SD-9] Wei Chen, PhD (August 2010 – Completed June 2014)
Thesis: Deciphering mantle sources and petrogenetic history of the Oka carbonatite complex, Quebec, Canada
Placement: Associate Professor, Department of Geosciences, China University, Wuhan, China
- [SD-8] Christine M. Wallace, PhD (Completed May 2013), co-supervised with Dr. Peter Burns
Thesis: Nanoscale control of actinides and post-detonation nuclear forensics analysis of Trinitite
Placement: US State Department, Washington DC

Graduated doctoral students supervised at Notre Dame from other institutions:

- [SD-7] Hao Zhao, PhD (September 2019 – expected completion: 2022), co-supervised with Dr. Li Sanzhong, College of Marine Geosciences, Ocean University of China
Funding: Ocean University of China Joint PhD Program
Thesis: Geochemistry and isotopic investigation of kamafugites and alkaline rocks from the APiP, central Brazil
- [SD-6] Marcela de Carvalho Lobato, PhD, Faculdade de Geologia, Universidade do Estado do Rio de Janeiro, Brazil
Period of supervision at Notre Dame: July 2017 – December 2017 (5 months)
Thesis: Provenance and metamorphic overprint of the Neoproterozoic metasedimentary sequences of the Central Ribeira belt, SE Brazil: Tectonic implications for Western Gondwana amalgamation
- [SD-5] Maria Isabel Giraldo Arroyave, PhD, Departamento de Mineralogia e Geotectônica, Instituto de Geociências, Universidade de São Paulo, Brazil
Period of supervision at Notre Dame: September 2017 – November, 2017 (3 months)
Thesis: Mineralogy and Petrology of Layered Alkaline and Mafic-Ultramafic and Associated Rocks from the Southern Region of the Sao Sebastiao Island, Brazil
- [SD-4] Okay Çimen, PhD (Completed August 2016), Middle Eastern Technical University, Ankara, Turkey
Period of supervision at Notre Dame: May 2015 – December 2015 (7 months)
Thesis: The Petrology and Geochronology of the Igneous Rocks from the Çangaldağ Metamorphic Complex and the Çangaldağ Pluton (Central Pontides-Turkey)
Placement: September 2016 to present, Assistant Professor, Department of Geological Engineering, Munzur University, Turkey
- [SD-3] Angela Clara Moreno, PhD (Completed January 2016) Complutense University, Madrid, Spain
Period of supervision at Notre Dame: March 2013 – July 2013 (4 months)

Thesis: Petrogenetic Investigation of Breccias and Intrusives Suites, Los Molinos, Canary Islands

Placement: not known

[SD-2] Tabata Hoeger, PhD (Completed July 2015) University of Sao Paolo, Sao Paolo, Brazil

Period of supervision at Notre Dame: October 2014- November 2014 (2 months)

Thesis: Origin and Evolution of Magmatism Associated with the Sorocaba Granitic Massif, Sao Paolo, Brazil: Geochemical and Isotopic Perspectives

Placement: Assistant Professor, Universidad de Los Andes, Venezuela

[SD-1] Frederico C.J. Vilalva, PhD (Completed July 2012) University of Sao Paolo, Sao Paolo, Brazil

Period of supervision at Notre Dame: February 2011- August 2011 (7 months)

Thesis: Geochronological investigation of the Redondo Morro Plutonic Complex

Placement: Since April 2013, Assistant Professor, Geology Department at the Federal University Do Rio Grande Do Norte (Natal, Brazil)

POSTDOCTORAL RESEARCH ASSOCIATES MENTORED

- [PD-7] Dr. Loretta Corcoran, October 2016 – October 2021
Research Topic: Dr. Corcoran conducted detailed chemical and isotopic (Sr, Pb, U) analyses of natural uraninites from worldwide deposits, and using multi-variant (PCA) treatment of the data to identify significant signatures for provenance assessment in nuclear forensics analysis
Placement: Avantor-VWR Chief Scientific Officer, London, UK
- [PD-6] Dr. Okay Çimen, February 2018 – September 2018
Research Topic: Boron isotope investigation of carbonatite complexes within Turkey: Evaluation of mantle sources.
Placement: Dr. Çimen is an Associate Professor, Dept. of Geological Engineering, Munzur University, Turkey
- [PD-5] Dr. Tyler L. Spano, December 2017 – November 2018
Research Topic: Dr. Spano conducted detailed chemical and isotopic analysis of nuclear fuel pellets, and investigating the boron isotope characteristics of uraninites from deposits worldwide.
Placement: Nuclear Security Scientist- Chemistry Division, Oak Ridge National Laboratory, Oak Ridge, TN
- [PD-4] Dr. Enrica Balboni, December 2014 – February 2015
Research Topic: Chemical and Sr isotope analyses of natural uraninites from deposits worldwide. This research work is in relation to the DHS sponsored research.
Placement: Staff Scientist Nuclear - Chemical Sciences Division, Lawrence Livermore National Laboratory, Livermore, CA
- [PD-3] Dr. Patrick Donohue, January 2014 – December 2014
Research Topic: Detailed, high spatial resolution investigation of Trinitite post-detonation materials using petrographic thin sections, and applying CSD analysis to vesicle size distribution within Trinitite blast melt. This research work was conducted in relation to NA22-sponsored research.
Placement: Since January 2015 to present: Postdoctoral Research Fellow, Hawaii Institute of Geophysics and Planetology, University of Hawaii; advisor: Dr. Gary Huss
- [PD-2] Dr. Sara Mana, October 2013 – August 2014, co-advised with Dr. Peter Burns
Research Topic: High spatial resolution investigation of Pu isotope signatures within Trinitite blast melt. This research work was conducted in relation to NA22-sponsored research.
Placement: September 2015- present: Associate Professor, Department of Geological Sciences, Salem State University, MA
- [PD-1] Dr. Jeremy Bellucci, August 2011 – July 2013
Research Topic: Chemical and isotopic characterization of Trinitite blast melt. This research work was conducted in relation to NA22-sponsored research.

Placement: Since August 2013 to present: Staff Researcher, Department of Geological Sciences, Swedish Museum of Natural History, Stockholm, Sweden

UNDERGRADUATE STUDENTS - DIRECTED

- [UGS-30] Bennett Schmitt, Environmental Sciences, College of Science, UND
Period of Supervision: January 2023 - present
Topic: Investigating REE potential of fenite deposits associated with carbonatite complexes
- [UGS-29] Sophia Frisbie, Environmental Engineering Major, CEEES, UND
Period of supervision: August 2023 – December 2023
Topic: Investigating quality of groundwater within Notre Dame campus and surrounding areas.
- [UGS-28] Liz Chen, Civil Engineering, College of Engineering, UND
Period of Supervision: January 2023 – May 2023
Topic: Nuclear forensics investigation of uraninites worldwide
- [UGS-27] Monika Nokes, Environmental Sciences, College of Science, UND
Period of Supervision: January 2023 – May 2023
Topic: Monitoring regional chemical and isotopic signatures of atmospheric pollution via precipitation samples
- [UGS-26] Sydney Higgins, Environmental Sciences, College of Science, UND
Period of Supervision: January 2022 – August 2022
Topic: Determining high precision in-situ U-Pb ages of uraninites worldwide
- [UGS-25] Sophia Frisbie, Environmental Engineering Major, CEEES, UND
Period of supervision: November 2021 – May 2022
Topic: Investigating quality of groundwater within Notre Dame campus and surrounding areas.
- [UGS-24] Claire King, Environmental Sciences, College of Science, UND
Period of Supervision: January 2021 – May 2021
Topic: Mapping out of the US geothermal industry, identifying themes, structure, and potentially, differences in regional practices. Research is being conducted in conjunction with BlackRock Financial Management.
Placement: Senior Analyst, Accenture, Chicago IL
- [UGS-23] Patricia Dirlam, Civil Engineering Major, CEEES, UND
Period of supervision: January 2019 – May 2021
Topic: Food safety investigation of ceramic glazes. Project has received funds (\$2000) from the Center of Undergraduate Scholarly Engagement (CUSE), UND.
- [UGS-22] Annalena Bellm, Civil Engineering Major, CEEES, UND
Period of supervision: January 2019 – May 2019
Topic: Investigation of drinking water quality on Notre Dame Campus.
Placement: Structural Engineering, Master's Student, Stanford University

- [UGS-21] Gabriella Marines-Chio, Environmental Sciences Major, Biological Sciences, UND
Period of supervision: January 2019 – May 2019
Topic: Investigation of drinking water quality on Notre Dame Campus and surrounding neighborhoods.
- [UGS-20] Elijah Barstis, Chemistry major (junior), Hamilton College, NY
Period of supervision: June 2018 – August 2018
Topic: Development of Ca and Fe isotope protocols and measurements in relation to uraninite and nuclear forensic applications. This research work is being conducted in relation to DHS-sponsored research.
Placement: PhD graduate student at Colorado State University
- [UGS-19] Maloney Foster, Environmental Engineering major, UND
Period of supervision: June 2017 – May 2017
Topic: Mastery of nuclear forensic methods and analyses of natural uraninite. Produced undergraduate thesis entitled, “Elemental and Isotopic Characterization of Four Uraninite Ores for Nuclear Forensic Applications”. This research work was conducted in relation to DHS-sponsored research.
Placement: June 2018 – Nuclear Engineer, submarine division for US Navy
- [UGS-18] Paola Rivera Gonzalez, Geology major, Dept. Geology, University of Puerto Rico at Mayaguez, Puerto Rico
Period of supervision: May 2017 – July 2017
Topic: Paola held a NSF REU to conduct research at Notre Dame. Geochemical and isotopic investigation of the Magnet Cove Carbonatite Complex, Arkansas
Placement: MS graduate student at Michigan Institute of Technology, Aug. 2020-
- [UGS-17] Bianca Monaco, Environmental Engineering major, UND
Period of supervision: January 2015 – May 2017
Topic: Ion exchange chemistry for Sr and U isotope analysis of uraninites
Placement: June 2017 to present – Employed at Walt Disney Corporation, Florida
- [UGS-16] Thomas Wheeler, Environmental Earth Sciences major, UND
Period of supervision: January 2015 – May 2017
Topic: Laboratory research assistant working on several projects conducting geochemical analysis
Placement: Since June 2017 to present - Camp Covecrest Catholic Missionary, Tiger GA
- [UGS-15] Nina Jones, Environmental Engineering major, UND
Period of supervision: January 2015 – May 2016
Topic: Chemical and isotopic characterization of natural uraninite. Nina research work was recognized as a co-author on a journal publication (Balboni et al., 2016, Applied Geochemistry).
Placement: High School Science Instructor, Brooklyn, NY

- [UGS-14] Paul Hurley, Environmental Engineering major, UND
Period of supervision: May 2014 – May 2016
Topic: Chemical and isotopic characterization of Trinitite
Placement: Greely and Hansen Environmental Consulting, Chicago IL
- [UGS-13] Nathanial Cook, Environmental Earth Sciences major, UND
Period of supervision: January 2015 – December 2015
Topic: ICP-MS analysis of natural U-bearing minerals; Nate's research work was recognized as a co-author on a peer-reviewed, journal publication (Balboni et al., 2017; Applied Geochemistry).
Placement: June 2016 to present: Staff Geologist, SCST Engineering, Chicago, IL
- [UGS-12] Maddie Braman, Environmental Engineering major, UND
Period of supervision: January 2014 - May 2014
Topic: Detailed analysis of Trinitite at the micron scale
Placement: May 2016 – May 2017: MS in Management, UND; September 2017 to present: Consulting Analyst, Accenture, Chicago IL
- [UGS-11] Megan Dustin, Environmental Earth Sciences major, UND
Period of supervision: August 2013 – May 2014
Topic: Detailed analysis of Trinitite at the micron scale. Megan's research work is contained within a peer-reviewed journal publication in which she is the senior co-author (Dustin et al., 2016, Applied Spectroscopy). Subsequent her graduation from Notre Dame, she went to complete a MS degree at Stanford University.
Placement: September 2014 – January 2017: MS degree at Stanford University; January 2017 to present: Analyst at Nathan Associates Inc., Palo Alto, CA
- [UGS-10] Maria Krug, Environmental Engineering major, UND
Period of supervision: June 2013 – November 2013
Topic: Detailed analysis of Trinitite at the micron scale
Placement: October 2014 – July 2016: Civil Engineer at Whitman, Requardt, & Associates, Baltimore MD; August 2016 to present: MSCE graduate student, UND (advisors: Drs. A. Hamlet & J. Brockman)
- [UGS-9] Zachary Torrano, Environmental Earth Sciences major, UND
Period of supervision: June 2013 - May 2014
Topic: Detailed analysis of Trinitite at the micron scale; Zach's research work is contained within a peer-reviewed journal publication in which she is the senior co-author (Dustin et al., 2016, Applied Spectroscopy).
Placement: August 2014 to present: PhD graduate student, School of Earth and Space Exploration, Arizona State University, Tempe AZ
- [UGS-8] Savannah Wunderlich, Environmental Engineering major, UND
Period of supervision: Jan. 2014- May 2014
Topic: Detailed analysis of Trinitite at the micron scale
Placement: June 2016 to present: Engineer at CB&I, The Woodlands, TX

- [UGS-7] Timothy Hainley, Environmental Earth Sciences major, UND
Period of supervision: May 2012 - May 2013
Topic: Detailed analysis of Trinitite at the micron scale
Placement: March 2014 – January 2016: US Peace Corps, Malawi; March 2016 – present: Geotechnical Engineer, GeoDesign Inc., Portland, OR
- [UGS-6] Colleen Pelletier, Environmental Engineering major, UND
Period of supervision: January 2013 - May 2014
Topic: Detailed analysis of Trinitite at the micron scale
Placement: November 2014 – May 2016: Field Engineer, Schlumberger; April 2016 – March 2017: Environmental Field Officer, Eastern Metropolitan Regional Council; March 2017 to present: Waste Consultant, Talis Consultants, Leederville, Australia
- [UGS-5] Madeleine Smierciak, Environmental Earth Sciences major, UND
Period of supervision: May 2012 - January 2013
Topic: Detailed analysis of Trinitite at the micron scale
Placement: August 2015 – March 2016: Field Engineer, Schlumberger, Cheyenne WY; June 2016 to present: Commodity Risk Analyst, BP Oil & Energy, Chicago IL
- [UGS-4] Nolan Welsh, Environmental Earth Sciences major, UND
Period of supervision: May 2012 - May 2013
Topic: Detailed analysis of Trinitite at the micron scale
Placement: January 2014 – April 2015: Field Engineer, Schlumberger, Fort Morgan CO; February 2016 – January 2017: Laboratory Technician; February 2017 to present: Geophysical Engineer, COLOG Inc, NV
- [UGS-3] Allan Jones, Environmental Earth Sciences major UND
Period of supervision: May 2011 – May 2012
Topic: Undergraduate research assistant in MITERAC ICP-MS facility
Placement: August 2012 to December 2017: PhD, Jackson School of Geosciences, University of Texas at Austin; January 2018 to present: Postdoctoral Researcher, Moffet Research Group, Washington State University, WA
- [UGS-2] Mary Kate Fidler, Environmental Earth Sciences major, UND
Period of supervision: August 2010 - May 2012
Topic: Geochemical research laboratory assistant
Placement: August 2012 to December 2018, PhD Geological Sciences, University of California Santa Barbara; January 2018 to present, Lecturer, Department of Environmental Engineering & Earth Sciences, Clemson University
- [UGS-1] Nick Civetta, Civil Engineering major, UND
Period of supervision: September 2010 - May 2011
Topic: U-Pb dating of zircon megacrysts, South Africa
Placement: August 2011 to June 2012: MS in Geotechnical Engineering, University of California, Berkeley; 2012 to present: professional rugby player for various teams in US

and abroad, including Italian and English rugby teams. Currently a member of the Doncaster Knights, UK

13. PROFESSIONAL MEMBERSHIPS

Professional Memberships

Geochemical Society (GS)

International Association of Geoanalysts (IAG)

14. OTHER NOTABLE CONTRIBUTIONS

Professional Services within Notre Dame Community and CEEES

[NC-28] CEEES Committee Chair & Director of Inclusive Excellence and Engagement, (July 1, 2024 – present)

- Met monthly with committee members to discuss DEI-related issues pertaining to CEEES and those for CoE and university-wide.

[NC-27] CEEES Representative on CoE's Committee on Inclusive Excellence and Engagement (July 1st, 2024 – present)

- Participated in monthly meetings involving staff representatives from the CoE's administrative offices and Office of Inclusive Excellence and Engagement, Directors of Inclusive Excellence and Engagement, and Associate Dean for Faculty Advancement and Inclusion to discuss initiatives, developments, and concerns in relation to DEI-related issues.
- July-August 2024 - Participated in interviewing three candidates for the position of CoE's Coordinator for Inclusive Excellence and Academic Conferences.

[NC-26] CEEES Representative on CoE's Committee for Directors of Inclusive Excellence and Engagement - DIEEs (July 1st – present)

- Participated in monthly meetings involving other CoEs DIEEs and Associate Dean for Faculty Advancement and Inclusion to discuss initiatives, developments, and concerns in relation to DEI-related issues.

[NC-25] Member of CEEES Teaching Assignments Committee (August 2023 – present)

- Participated in 2 annual meetings to discuss and review departmental teaching loads/assignments

[NC-24] CEEES Faculty member of COE Council (August 2023 – September 2024)

[NC-23] Member of CEEES Graduate Studies Committee (August 2019- June 2024)

[NC-22] Faculty Manager and Co-Director of the MITERAC ICP-MS CORES Facility

I do not receive any technical laboratory support for the CORES MITERAC ICP-MS Facility; hence I conduct the following tasks on either daily/monthly/annual basis:

- Preventative maintenance and repairs of all ICP-MS and laser ablation instruments
- Ordering of all laboratory supplies
- Training and scheduling of users and sometimes helping to prepare samples for analysis

[NC-21] Faculty mentor for 3 undergraduates (Richard Montoya, Veronica Rivera, Camden Saks) in The Mary E. Galvin Science & Engineering Scholars (STEM) Program, Faculty of Science, August 2020 – May 2021.

[NC-20] Member of the CEEES Communications Committee

- Participated in meetings with regards to revamping the CEEES departmental website, in particular web pages dealing with our graduate studies program.

[NC-19] Director of Graduate Studies (DGS) and Chair/Member of Graduate Studies Committee (July 1st, 2015 to July 31st, 2019; Graduate Studies Committee – August 2019 - present)

As CEEES DGS, I have performed the following duties and responsibilities on a yearly basis:

- With the assistance of the Graduate School, instituted the use of Academic iNDEX for producing the yearly graduate student performance reports
- Help conduct and execute yearly review reports of all CEEES graduate students
- I oversee the admission of all new graduate students
- Help and steer recruitment of new graduate students, which typically entails meeting with prospective students during recruitment visits, sending out initial and follow-up emails to prospective students, and replying to email requests
- I began the monthly CEEES graduate students' newsletter in December 2015 and was its first editor-in-chief for its first year. The responsibilities and duties relating to the newsletter were handed off to graduate students on the editorial board, and it continues to be published/issued on a monthly basis
- Steer the graduate studies committee in the yearly exercise of ranking and awarding of ND internal fellowships
- Lead and conduct the assignment of teaching assistantships for CEEES courses (for Fall and Spring semesters each year)

[NC-18] CEEES Faculty Representative, College of Engineering Council (Sept. 2013- May 2016)

[NC-17] Member of Doctoral and Masters Theses and Oral Candidacy Evaluation Committees at University of Notre Dame

Member of MS or PhD Defense Evaluation Committee for the following CEEES graduate students (since 2012 when I received tenure):

Student	Year	Degree	Advisor(s)
37- Patrick Cho	2023	PhD	Drs. Müller & Bolster
36- Jessika Valenciano	2023	PhD	Dr. Clive Neal
35- Stu Webb	2022	PhD	Dr. Clive Neal/ A. Simonetti
34- Corinne Kuebler	2021	PhD	Dr. A. Simonetti
33- Eoghan Corbett	2021	PhD	Dr. A. Simonetti & Q. Crowley (TCD, Dublin)
32- Michael Torcivia	2021	PhD	Dr. Clive Neal
31- Ömer Ozkaya	2020	MS	Dr. A. Simonetti
30- David Burney	2020	PhD	Dr. Clive Neal
29- Mengyu Xu	2020	PhD	Dr. Peter Burns

28- Rebecca Carter	2020	PhD	Dr. Amy Hixon
27- Karl Cronberger	2019	PhD	Dr. Clive Neal
26- Corinne Dorais	2019	PhD	Drs. A. Simonetti & A. Hixon
25- Luke Sadergaski	2019	PhD	Dr. Amy Hixon
24- Haylie Lobeck	2019	PhD	Dr. Peter Burns
23- Sarah Hickam	2019	PhD	Dr. Peter Burns
22- Stefanie Lewis	2018	MS	Dr. A. Simonetti
21- Teresa Baumer	2018	PhD	Dr. A. Hixon
20- Ewa Dzik	2017	PhD	Dr. Peter Burns
19- Hanyu Ma	2017	PhD	Dr. Peter Burns
18- Travis Olds	2017	PhD	Dr. Peter Burns
17- Tyler Spano	2017	PhD	Drs. Simonetti & Burns
16- Ryan Nell	2016	PhD	Dr. Jeremy Fein
15- Shannon Flynn	2015	PhD	Dr. Jeremy Fein
14- Elizabeth Koeman	2015	PhD	Dr. Antonio Simonetti
13- Samuel Hulett	2015	MS	Dr. Antonio Simonetti
12- Kristi Pelligrini	2015	PhD	Dr. Peter Burns
11- Sarah Roberts	2015	MS	Dr. Clive Neal
10- Qiang Yu	2015	PhD	Dr. Jeremy Fein
9- Enrica Balboni	2014	PhD	Dr. Peter Burns
8- Wei Chen	2014	PhD	Dr. Antonio Simonetti
7- E. Miller Wyllie	2014	PhD	Dr. Peter Burns
6- Jesse Davenport	2013	MS	Dr. Clive Neal
5- Patrick H. Donohue	2013	PhD	Dr. Clive Neal
4- Jessica Morrison	2013	PhD	Dr. Peter Burns
3- Katie M. O'Sullivan	2013	PhD	Dr. Clive Neal
2- Christine Wallace	2013	PhD	Drs. Burns & Simonetti
1- Amy Fagan	2012	PhD	Dr. Clive Neal

****Please note that I was also a faculty committee member for the PhD Oral Candidacy exams for all of the students listed in the above table.**

Professional Services within National and International Geosciences Community

[NC-16] NSF Review Panel – EAR Instrumentation & Facilities (Nov. 12 -14, 2024)

- Participated in daily remote meetings for 4 days (9:00 am to 6:00 pm) as a panelist reviewing and providing detailed feedback/rankings on 13 proposals from a total of 44 handled by the Earth Sciences Proposal Review Panel – please see accompanying letter from NSF program manager.

[NC-15] Chair of the Conference Organization Committee for the North American Laser Ablation Workshop (NAWLA) 2023, University of Notre Dame, June 5-9th, 2023. The workshop hosted in total 140 attendees from countries worldwide.

As chair of the conference organization committee, I conducted the following activities:

- Development of scientific program and coordinating collection and review of all abstracts submitted and inviting of keynote speakers
- Securing participation and solicitation of financial contributions from industry partners in support of our meeting
- Maintaining and updating of workshop meeting website: <https://nawla2023.nd.edu/>
- Setting up and maintaining X and LinkedIn social media accounts for workshop
- Design of conference bag and several workshop logos

[NC-14] Served as **external, expert reviewer for independent review of research project entitled, “*ALGE Contaminant Transport Model for Emergency Response*” (2nd review) that is being carried out at Savannah River National Laboratory and funded by U.S. Department of Energy's Office of Defense Nuclear Nonproliferation R&D (NA-22 Program). Review was conducted remotely on June 2nd, 2022.**

[NC-13] Served as **external, expert reviewer for independent review of research project entitled, “*OR21-ML Uranium Forensics Testbed*” that is being carried out at Oak Ridge National Laboratory and funded by U.S. Department of Energy's Office of Defense Nuclear Nonproliferation R&D (NA-22 Program). Review was conducted remotely on November 9th, 2020.**

[NC-12] Served as **external, expert reviewer for independent review of research project entitled, “*ALGE Contaminant Transport Model for Emergency Response*” (Kickoff Meeting) that is being carried out at Savannah River National Laboratory and funded by U.S. Department of Energy's Office of Defense Nuclear Nonproliferation R&D (NA-22 Program). Review was conducted remotely on October 14th, 2020.**

[NC-11] Served as **external, expert reviewer for independent review of research project entitled, “*Molecular and Microstructural Provenance of Uranium and Plutonium Oxides*” that is being carried out at SLAC National Accelerator Laboratory and funded by U.S. Department of Energy's Office of Defense Nuclear Nonproliferation R&D (NA-22 Program). Review was conducted remotely on July 29 and 30th, 2020.**

[NC-10] Served as **external, expert reviewer for independent review of research project entitled, “*Water-Surface-Burst (WSB) Fallout Model*” that is being carried out at Oak**

Ridge National Laboratory and funded by U.S. Department of Energy's Office of Defense Nuclear Nonproliferation R&D. Review was conducted remotely on June 3rd, 2020.

[NC-9] Served as **external, expert reviewer** for independent review of research project entitled, “*Morphological Provenance Signatures*” that is being carried out at Lawrence Livermore National Laboratory and funded by U.S. Department of Energy's Office of Defense Nuclear Nonproliferation R&D. Review was conducted remotely on March 26-27th, 2019.

[NC-8] Served as a **guest editor** for a special issue entitled, “*Nuclear Forensic Applications in Geoscience and Radiochemistry*” (May 2020)
weblink: https://www.mdpi.com/journal/minerals/special_issues/Forensic-Geoscience

[NC-7] **Member of Scientific Committee for the 3rd North American Laser Ablation Workshop, May 28th – 31, 2019, Austin, TX**

- Invited to serve on the scientific committee (3 other members) for the upcoming international meeting in May 2019 in Austin, TX. The primary role of the Committee is to identify important developments (hardware, software, application of methods) and trends in laser ablation-ICP-MS methods, and suggest invited speakers. Moreover, I have agreed to host the 2021 NAWLA Conference at the University of Notre Dame. Past NAWLA Conferences have typically lasted ~3 days and were host to >100 scientists from >10 countries.

[NC-6] **Editorial board for journals *Frontiers in Earth Science*, *Minerals*, and *Lithos***
- **October 2022** - New member of Associate Editor Board for ***Frontiers in Earth Science*** (Geochemistry section)

Conduct reviews and/or render final decisions on suitability of peer-reviewed journal articles

- **March 2021** - Appointed as one of **Associate Editors** for the journal ***Minerals***
<https://www.mdpi.com/journal/minerals/editors>

- Served on Editorial board of *Lithos* in July 2013 to August 2019

[NC-5] **External Peer Reviewer for Various Top-rated, Earth Sciences-Related Journals**

- Within the last 6 years, I’ve conducted multiple reviews for the following journals:

- *American Mineralogist*
- *Applied Geochemistry*
- *Chemical Geology*
- *Geochimica et Cosmochimica Acta*
- *Minerals*

[NC-4] **Elected as Councilor to serve on the Council of the Mineralogical Association of Canada (MAC)**

- Elected to 3-year term in June 2016 to serve as a Councilor on the MAC Council
- Responsibilities and duties have included serving on the Research/Travel Grants

Awards Committee, Peacock Medal Award Committee, Young Scientist Award Committee, MAC representative on Short Courses Committee offered at upcoming Resources for Future Generations (RFG) 2018 meeting in Vancouver (Canada), and attending yearly Council meetings

[NC-3] Appointed as an Academic Advisor for *Nature*'s special issue entitled, *Nature Milestones: Mass Spectrometry*, published Sept. 10th, 2015

- My contribution as an international expert adviser consisted of helping to write review article that presents a historical look back at the key technical developments in mass spectrometry and the chemical and biological applications that stemmed from these advances.

[NC-2] Invited Guest Editor for special volume of journal '*Minerals*' entitled, '*Advances in Mineral Geochronology*'; August 2014

- As Issue Editor, the aim of this special volume was to gather studies focused on recent scientific and technical advances in mineral geochronology, using either spatially resolved acquisition methods, or at the mineral scale (e.g., ID-TIMS), and geochronological investigations presenting novel data reduction and processing schemes.

[NC-1] External Peer Reviewer, review on average 1-2 grants/year from National Science Foundation (NSF)

15. TEACHING

Undergraduate/Graduate Courses Taught at the University of Notre Dame

The table below lists all the courses I have instructed at Notre Dame since the SP2009 semester.

SEMESTER	COURSE	Enrollment	Credit Hrs.
SP2009	Engineering Geology	59	3
F2009	ICP-MS Analytical Methods	6	3
SP2010	Engineering Geology	48	3
F2010	ICP-MS Analytical Methods	15	3
F2011	ICP-MS Analytical Methods	7	3
SP2012	Engineering Geology	43	3
SP2012	Field Trip	13	1
F2012	ICP-MS Analytical Methods	7	3
SP2013	Engineering Geology	60	3
SP2013	Field Trip	16	1
F2013	ICP-MS Analytical Methods	5	3
SP2014	Field Trip	14	1
SP2014*	Petrology/Earth Materials	2	3
SP2014*	Petrology/Earth Materials -Lab	2	1
F2014	Planet Earth Lab	23	1
F2014	Planet Earth Lab	29	1
F2014	ICP-MS Analytical Methods	6	3
SP2015	Field Trip	14	1
SP2015*	Petrology/Earth Materials	1	3
SP2015*	Petrology/Earth Materials -Lab	1	1
F2015	ICP-MS Analytical Methods	4	3
SP2016	Petrology/Earth Materials	8	3
SP2016	Petrology/Earth Materials -Lab	8	1
SP2016	Field Trip	6	1
F2016	ICP-MS Analytical Methods	6	3
F2016	Moreau 1 st Year Studies	18	1
SP2017	Petrology/Earth Materials	5	3
SP2017	Petrology/Earth Materials -Lab	5	1
SP2017	Field Trip	7	1
SP2017	Moreau 1 st Year Studies	16	1
F2017	ICP-MS Analytical Methods	6	3
F2017	Moreau 1 st Year Studies	19	1
SP2018	Petrology/Earth Materials	8	3
SP2018	Petrology/Earth Materials -Lab	8	1
SP2018	Field Trip	5	1
SP2018	Moreau 1 st Year Studies	18	1
F2018	Planet Earth	103	3
F2018	Planet Earth Laboratory	62	1
SP2019	Earth Materials (CE30540)	4	3
SP2019	Earth Materials -Lab (CE31540)	4	1

SP2019	Field Trip (CE45200)	14	1
F2019	Planet Earth (CE20110)	102	3
F2019	Planet Earth Laboratory (CE21110)	55	1
SP2020	Field Trip (CE45200)	14	1
SP2020	ICP-MS Analytical Methods (CE60342)	3	3
SP2020	Special Studies (CE47600)	1	3
F2020	Planet Earth (CE20110)	104	3
F2020	Planet Earth Laboratory (CE21110)	71	1
SP2021	Earth Materials (CE30540)	4	3
F2021	Planet Earth (CE20110)	113	3
F2021	Planet Earth Laboratory (CE21110)	78	1
SP2022	Earth Materials (CE30540)	7	3
SP2022	Field Trip (CE45200)	14	1
F2022	Planet Earth (CE20110)	105	3
F2022	Planet Earth Laboratory (CE21110)	68	1
SP2023	Earth Materials (CE30540)	13	3
SP2023	Field Trip (CE45200)	11	1
F2023	Planet Earth (CE20110)	113	3
F2023	Planet Earth Laboratory (CE21110)	73	1
SP2024	Earth Materials (CE30540)	10	3
SP2024	Field Trip (CE45200)	14	1
F2024	Planet Earth (CE20110)	100	3
F2024	Planet Earth Laboratory (CE21110)	58	1

*: Course given as directed study and thus no CIF score available.