CURRICULUM VITAE (2025)

Peter Carman Burns

Dorini Family Professor of Energy Studies
Department of Civil and Environmental Engineering and Earth Sciences
Concurrent Professor, Department of Chemistry and Biochemistry
Fellow, American Association for the Advancement of Science (AAAS)
Fellow, Mineralogical Society of America
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PERSONAL

Born	Fredericton, New Brunswick, Canada, 1966
Citizenship	Canada, United States

EDUCATION

Ph.D. (Geology, 1994) University of Manitoba
Ph.D. Thesis: *The Stereochemistry of Cu^{2+} Oxysalt Minerals: An Ab Initio Molecular-Orbital Approach*

M.Sc. (Geology, 1990) University of Western Ontario
M.Sc. Thesis: *Tetrahedral-Site Ordering in Synthetic Gallium Albite*

B.Sc. (Honours, 1988) University of New Brunswick
B.Sc. Thesis: *Hexaborates From the Cassidy Lake Formation, Sussex, New Brunswick*

PROFESSIONAL EXPERIENCE

2025-current	Dorini Family Professor of Energy Studies
2014-2024	Director, Center for Sustainable Energy at Notre Dame (a university center)
2017-2020	Director, Actinide Center of Excellence
2019-current	Faculty Fellow, Pulte Institute for Global Development
2014-current	Fellow, John J. Reilly Center for Science, Technology, and Values
2009-2018	Director, Energy Frontier Research Center *Materials Science of Actinides* (DOE)
2009-2024	The Henry Massman Professor of Civil & Environmental Engineering & Earth Sciences, University of Notre Dame.
2002-2009	Massman Chair of the Department of Civil Engineering and Geological Sciences, University of Notre Dame.

2007-current	Concurrent Professor of Chemistry and Biochemistry, University of Notre Dame
2002-2009	Professor of Civil Engineering and Geological Sciences, University of Notre Dame.
2002-2008	Special Term Appointment, Chemistry Division, Argonne National Laboratory
2000-2002	Massman Associate Professor of Civil Engineering and Geological Sciences, Department of Civil Engineering and Geological Sciences, University of Notre Dame.
1999-2002	Director of Graduate Studies, Department of Civil Engineering and Geological Sciences, University of Notre Dame.
1999-2002	Associate Professor of Civil Engineering and Geological Sciences, University of Notre Dame.
1997-1999	Assistant Professor of Civil Engineering and Geological Sciences, University of Notre Dame.
1996-1997	Visiting Assistant Professor, Department of Geology, University of Illinois in Urbana-Champaign.
1995-1996	NSERC Post-Doctoral Fellow, Department of Earth and Planetary Sciences, University of New Mexico Topic: *Structural hierarchy of U^{6+} phases: applications to the disposal of nuclear Waste*.
1994-1995	NSERC Post-Doctoral Fellow, Department of Earth Sciences, University of Cambridge Topic: *Phase transitions and microstructures of minerals.*
1994-1995	Research Fellow, Clare Hall College, University of Cambridge
1990-1994	Lecturer and Teaching Assistant, Department of Geological Sciences, University of Manitoba
1988-1989	Teaching Assistant, Department of Geology, University of Western Ontario
1986-1988	Teaching Assistant, Department of Geology, University of New Brunswick
1986	Research Assistant, Department of Geology, University of New Brunswick

COMMITTEES TO RENDER SCIENTIFIC JUDGEMENT

2020-2022	Financial Advisory and Audit Committee, Mineralogical Society of America
2018-2020	Past President, International Mineralogical Association
2014-2020	Member, Commission on Inorganic and Mineral Structures, International Union of Crystallography
2017	Panel Lead, U.S. DOE Basic Research Needs workshop concerning advanced nuclear reactors
2016-2018	President, International Mineralogical Association (IMA)
2014-2016	Vice President, International Mineralogical Association (IMA)
2013	Editor, Mineralogical Association of Canada Short Course volume “Uranium: Cradle to Grave”
2013-2015	Peacock Medal Committee, Mineralogical Association of Canada

2011-2018	Special Section Editor, American Mineralogist
2009-2010	National Academy of Science Nuclear Waste Form Committee
2010-2011	Chair, Officer Nomination Committee, Mineralogical Society of America
2008-2009	Chair, Roebling Medal Committee, Mineralogical Society of America
2010-2012	Past-President, Mineralogical Association of Canada
2008-2010	President, Mineralogical Association of Canada
2007	Panelist, DOE Basic Research Needs workshop concerning advanced geology
2006	Panelist, DOE Basic Research Needs workshop concerning advanced nuclear systems
2006-2008	Vice President, Mineralogical Association of Canada
2008-2010	Member of Council, Mineralogical Society of America
2005-current	College of Reviewers for the Canada Research Chairs program
2005-2008	Advanced Photon Source General Proposal Review Panel
2005-2006	Editorial Advisory Board, Elements, An International Magazine of Mineralogy, Geochemistry and Petrology
2001-2006	Associate Editor, American Mineralogist
1998-2004	Associate Editor, Canadian Mineralogist
1998-2006	Member of Council, Mineralogical Association of Canada
1999-2000	Lecture Program Committee, Mineralogical Society of America
2001	Chair, Lecture Program Committee, Mineralogical Society of America
2007-2008	Chair, Crystallography Award Committee, Mineralogical Society of America
2001-2003	Public Service Committee, Mineralogical Society of America
1999	Editor, Mineralogical Society of America *Reviews in Mineralogy* "Uranium: Mineralogy, Geochemistry and the Environment"

HONORS/AWARDS

2023	• Fellow, American Association for the Advancement of Science (AAAS).
2018	• Honorary Professor (life) Xi'an Jiaotong University, China
2017	• Honorary Member of the Mineralogical Society of Russia
2016	• Peacock Medal of the Mineralogical Association of Canada
2003	• Mineral *burnsite* named by a group of Russian and Canadian scientists
2001	• MSA Award and Life Fellow of the Mineralogical Society of America
1999	• Donath Medal of the Geological Society of America
1998	• Young Scientist Medal of the Mineralogical Association of Canada
1997	• Hawley Medal (best paper award) of the Mineralogical Association of Canada
1995	• Life Member of Clare Hall College, University of Cambridge
1994	• Winthrop Spencer Gold Medal for Outstanding Achievement in Geological Sciences
1994	• Natural Sciences and Engineering Research Council of Canada Post Doctoral Fellowship.
1994	• International Centre for Diffraction Data Crystallography Scholarship 1994
1994	• Mineralogical Society of America Biennial Grant for Research in Crystallography
1994	• Research Fellow of Clare Hall, University of Cambridge
1993	• International Centre for Diffraction Data Crystallography Scholarship 1993
1992	• The J.L. Lightcap Award for Highest Standing in U. of M. Ph.D. Program
1992	• University of Manitoba Graduate Fellowship

1988-92 • Natural Sciences and Engineering Research Council of Canada Graduate Scholarship.
1991 • Dr. George Brownell Memorial Prize for Highest Standing in Geological Sciences.
1991 • Geological Association Graduate Seminar Prize
1991 • Sigma Xi Student Award for Excellence in Research
1988 • U. W. O. Special Entrance Scholarship
1987 • Canadian Institute of Mining and Metallurgy Earth Science Scholarship
1987 • Tom and Parker Hickey Memorial Scholarship
1987 • Natural Sciences and Engineering Research Council of Canada Student Research Assist.
1987 • The Wood Scholarship
1986 • Fredericton MAC-GAC 1985 Scholarship
1986 • U. N. B. Alumni Undergraduate Scholarship
1986 • Natural Sciences and Engineering Research Council of Canada Student Research Assist.
1986 • Tom and Parker Hickey Memorial Scholarship

RESEARCH FUNDING SUMMARY

2023-2025 U.S. Department of Energy. Early Engagement with Communities to Enable Procedural Justice and Capacity-Building for the Siting of Federal Interim Nuclear Waste Storage Facilities. Good Energy Collective is the lead, Burns is a consortium partner. Burns portion is $445,318.

2019-2022 Basic Energy Sciences, U.S. Department of Energy, sole PI: Neptunyl and uranyl peroxide chemistry in molten salts, uranyl structures from Nature, and thermodynamic studies extending into the transuranium elements. $274,000.

2018-2022 U.S. National Nuclear Security Agency (NNSA), A novel technique for the production of robust actinide targets. (Co-PI), $953,998.

2017-2020 U.S. National Nuclear Security Agency (NNSA), Center of Excellence (PI and Director) *Actinide Center of Excellence*. $12,553,547.

2014-2019 U.S. Department of Homeland Security (DHS). With Simonetti (PI) and Hixon (co-PI). Advancement of Nuclear Forensic Science. $1,748,112.

2014-2018 Energy Frontier Research Center, Department of Energy, Basic Energy Sciences. *Materials Science of Actinides*. $11,600,000. Burns is the PI and Director.

2012-2014 Nuclear Energy University Program. With Na (PI). Microscopic fuel particles produced by self-assembly of actinide nanoclusters on carbon nanomaterials. $440,000.

2011-2014 National Science Foundation. With Lieberman (PI) and three others. MRI: Acquisition of an X-Ray Photoelectron Spectrometer (XPS). $533,761.

2011-2014 National Nuclear Security Administration. With Simonetti (PI, UND), McNamara (PNNL) $885,471.

2010-2014 Environmental Remediation Science Program, U.S. Department of Energy, Inorganic Controls of Neptunium Mobility in the Subsurface. Burns is the sole PI. $627,000.

2009-2014 Energy Frontier Research Center, Department of Energy, Basic Energy Sciences. *Materials Science of Actinides*. $18,500,000. Burns is the PI and Director.

2007-2019 Basic Energy Sciences, U.S. Department of Energy, sole PI: Topological Structural Relationships, Properties, and Nano-Structures of U(VI), Np(V), Pu(V) and Pu(IV) Materials. $1,736,000.

2004-2008 Science and Technology Program, U.S. Department of Energy, sole PI: Impact of Uranyl Alteration Phases of Spent Fuel on Mobility of Np and Pu in Yucca Mountain. $910,000.

2003-2005 Environmental Management Science Program, U.S. Department of Energy: sole PI: Quantifying and Predicting Reactive Transport of Uranium in Waste Plumes: Are Colloids and Nanoparticles Important? $75,000.

2002-2009 Environmental Molecular Science Institute, National Science Foundation. Co-PI (together with Fein, PI, and Maurice). Actinides and Heavy Metals in the Environment – The Formation, Stability, and Impact of Nano- and Micro-Particles. $5,500,000.

2003-2004 Pacific Northwest National Laboratory. Sole PI. Subsurface Chemistry in Hanford's Tank Farms. $80,000.

2002-2005 Environmental Management Science Program, U.S. Department of Energy: sole PI: Phosphate Barriers for Immobilization of Uranium Plumes. $270,000.

2000-2004 Environmental Management Science Program, U.S. Department of Energy: sole PI: Direct Investigations of the Immobilization of Radionuclides in the Alteration Products of Spent Nuclear Fuel. $871,000.

2002-2003 National Science Foundation – NATO: sole PI: Crystal Structure Analysis of Uranyl Selenites and New (Rare) Minerals Using CCD-based X-ray Area Detector. $42,600.

2001-2002 University of Notre Dame Equipment Restoration Fund: Co-PI (together with McGinn and Varma): Acquisition of an Electron Microprobe. $200,000.

2001-2002 North Atlantic Treaty Organization: Coordinating PI: Collaborative Linkage Grant: Investigations of Incorporation of Toxic Metals and Radionuclides into Structures of Secondary Minerals. 528,000 Belgium Francs (approx. $17,000).

2001-2003 Georgia Pacific Corporation: Co-PI (together with Irvine): Investigations of the occurrences of natural dioxins. $225,000.

1999-2001 National Science Foundation: Co-PI (together with Blackburn and McGinn): Acquisition of a Travelling Solvent Floating Zone Furnace for Research and Education. $131,500.

1999-2001 REU Supplement, National Science Foundation: sole PI: Investigations of the Crystal Chemistry of Pb Uranyl Oxide Hydrate Minerals Using a CCD-based X-Ray Area Detector. $6125

1999-2001 National Science Foundation – NATO: sole PI: CCD X-Ray Detectors Applied to Mineral Structure Analysis. $49,800

1999-2001 National Science Foundation: sole PI: Investigations of the Crystal Chemistry of Pb Uranyl Oxide Hydrate Minerals Using a CCD-based X-Ray Area Detector. $92,000

1997-2000 Environmental Management Science Program, U.S. Department of Energy: sole PI: Direct Investigations of the Immobilization of Radionuclides in the Alteration Products of Spent Nuclear Fuel. $632,487.

1997 Capitalization, University of Notre Dame. $300,000

PROFESSIONAL SOCIETY MEMBERSHIPS

- Life Fellow of Mineralogical Society of America
- Mineralogical Association of Canada
- American Chemical Society
- Honorary Member of Russian Mineralogical Society
- Mineralogical Society of Great Briton and Ireland

- Geological Society of America

Published, Accepted, In Press

541. Cabanas, N., Manukyan, K., Bauer, K., Burns, P.C. & Aprahamian, A. (2024): ThO_2 and $Th_{1-x}U_xO_2$ nanoscale materials and thin films for nuclear science applications. *ACS Applied Nano Materials.*

540. Chamberlain, C.E., Szymanowksi, J.E.S. & Burns, P.C. (2024): High pressure single crystal X-ray diffraction and Raman spectroscopy of boltwoodite, $K_{0.63}Na_{0.37}[(UO_2)(SiO_3OH)](H_2O)_{1.5}$. *American Mineralogist.*

539. Hazen, R.M., Burns, P.C., Cleaves, H.J. II, Downs, R.T., Krivovichev, S.V. & Wong, M.L. (2024): Reply to "Experimental measurement of assembly indices are required to determine the threshold for life". *Journal of the Royal Society Interface* 21, 20240622.

538. Zhang, L., Wang. Y., Xu, M., Kokot, A.M., Qiu, J. & Burns, P.C. (2024): Hydrothermal synthesis and structure of organically templated layered neptunyl(VI) phosphate $(NpO_2)_3(PO_4)_2$(Terpy). *CrystEngComm* 26, 5991-5995.

537. Benjamin, S.E., Martin, D.C., LaVerne, J.A., Smith, K.R., Go, D.B. & Burns, P.C. (2024): In-situ uranium extraction through the synthesis of the uranyl peroxide studtite using a non-thermal plasma. *Inorganic Chemistry* 63, 21092-21098.

536. Emory, Z.C., LaVerne, J.A., Burns, P.C. (2024): Activation of uranyl peroxides by ionizing radiation for direct CO_2 capture. *Dalton Transactions.* 53, 17169-17178.

535. Gaster, C.B., Felton, D.E., Sweet, T.F.M., Oliver, A.G., Latuda, A.J., Rogers, J.M. & Burns, P.C. (2024): Formation of uranyl peroxide compounds via dissolution of studtite, $[(UO_2)(O_2)(H_2O)_2](H_2O)_2$, in ionic liquids. *Inorganic Chemistry* 63, 17502-17512.

534. Xiao, K., Zhou, Y., Xu, A., Szymanowski, J.E.S., Yang, Y., Afsari, B., Burns, P.C. & Liu, T. (2024): A two-step intermolecular interaction of uranyl peroxide molecular cluster U_{60} macroions with multivalent counterions. *Chemistry A European Journal* e202402359.

533. Xiao, K., Yang, Y., Xu, X., Szymanowski, J.E.S., Zhou, Y., Chen, J., Sigmon, G.E., Burns, P.C. & Liu, T. (2024): Coacervate formation in dilute aqueous solutions of inorganic molecular clusters with simple divalent countercations. *Inorganic Chemistry* 63, 15331-15339.

532. Rodriguez, V.G., Majumdar, A., Meza, I., Corcoran, L., Pierson, A., Gagnon, K., Cano, C., Ali, A.-M., Shuey, C.M., Jojola, G., Tan, W., Aprahamian, A., Cerrato, J.M. & Burns, P.C. (2024): Radiological analyses of ^{226}Ra and ^{238}U in surface water and sediments from the Jackpile Member of the Morrison Formation, Pueblo of Laguna, New Mexico. *Environmental Science and Technology* 58, 15138-15146.

531. Sweet, T.F.M., Sockwell, A.K., Hixon, A.E. & Burns, P.C. (2024): Actinide sulfate structures from caustic solvents. *Inorganic Chemistry* 63, 13431-13438.

530. Aksenov, A.M., Chukanov, N.V., Tarasov, V.P., Banaru, D.A., Mackley, S.A., Banaru, A.M., Krivovichev, S.V. & Burns, P.C. (2024): The local state of hydrogen atoms and proton transfer in the crystal structure of natural berborite, $Be_2(BO_3)(OH).H_2O$: low-temperature single crystal X-

ray analysis, IR and ^{1}H NMR spectroscopy, and crystal chemistry and structural complexity of beryllium borates. *Journal of Physics and Chemistry of Solids* 189, 111944.

529. Felton, D.E., Smith, K.R., Poole, N.A., Cronberger, K. & Burns, P.C. (2024): A new molybdenum blue structure type: How uranium expands this family of polyoxometalates. *Chemistry A European Journal* 30, e202400678.

528. Clark, A.M., Nelson, A.D., Bailey, T.L., Blankstein, D., Boomershine, C., Brown, G., Burns, P.C., Carmichael, S., Callahan, L.K., Koros, J., Lee, K., Matney, M., Miller, T., Olivas-Gomez, O., Paul, M., Pardo, R., Rivero, F., Robertson, D., Sigmon, G.E., von Seeger, W., Stech, E., Zite, R. & Collon, P. (2024): Multi-isotope determination of uranium-rich material using accelerator mass spectrometry. *Nuclear Instruments and Methods in Physics Research B* 548, 165253.

527. Sordyl, J., Chamberlain, C.E., Sweet, T.F.M., Burns, P.C., Cronberger, K. & Manecki, M. (2024): Immobilization of uranium from aqueous solutions by room-temperature precipitation of pyromorphite [$Pb_5(PO_4)_3Cl$]. *Polyhedron* 252, 116891.

526. Hazen, R.M., Burns, P.C., Cleaves, H.J. II, Downs, R.T., Krivovichev, S.V. & Wong, M.L. (2024): Molecular assembly indices of minerals: Some mineral structures are as complex as large biomolecules. *Journal of the Royal Society Interface* 21, 20230632.

525. Xu, X., Yang, Y., Zhou, Y., Xiao, K., Szymanowski, J.E.S., Sigmon, G.E., Burns, P.C. & Liu, T. (2024): Critical conditions regulating the gelation in macroionic cluster solutions. *Advanced Science* 11, 202308902.

524. Perry, S.N., Kurama, A., Martin, M. & Burns, P.C. (2024): Calorimetry and structural analysis of uranyl sulfates with unique topologies. *American Mineralogist* 109, 1554-1558.

523. Sockwell, A.K., Sweet, T.F.M., Barth, B., Burns, P.C. & Hixon, A.E. (2024): Pu(VI) oxalate crystal structure and evidence of photoreduction to Pu(IV) oxalate. *Inorganic Chemistry* 63, 56-60.

522. Olds, T.A., Plasil, J., Kampf, A.R., Burns, P.C., Marty, J. & McCloy, J.S. (2024): Bobfinchite, $Na[(UO_2)_8O_3(OH)_{11}].10H_2O$, a new Na-bearing member of the schoepite family. *American Mineralogist* 109, 1266-1274.

521. Meza, I., Hua, H., Gagnon, K., Mulchandani, A., Gonzalez-Estrella, J., Burns P.C., Lezama-Pacheco, J.S., Ali, A-M. S., Spilde, M., Peterson, E. & Cerrato, J.M. (2023): Removal of aqueous uranyl and arsenate mixtures after reaction of limestone, PO_4^{3-}, and Ca^{2+}. *Environmental Science & Technology* 57, 20881-20892.

520. Felton, D.E., Kohlgruber, T.A., Tucker, Z.D., Gulotty, E.M., Ashfeld, B.L. & Burns, P.C. (2023): Utilizing ionic liquids as bifunctional reagents for the ionothermal synthesis of uranyl compounds. *Crystal Growth and Design* 23, 8311-8318.

519. Perry, S.N., Rodriguez, V.G. & Burns, P.C. (2023): Nanoscale calcium uranyl carbonate clusters in water. *Chemical Geology* V641, 121766.

518. Olds, T.A., Kampf, A.R., Perry, S.L., Guo, X., Marty, J., Rose, T.P. & Burns, P.C. (2023): Navrotskyite, a new sodium and potassium uranyl-sulfate mineral from the Blue Lizard mine, Red Canyon, White Canyon District, San Juan County, Utah. *Journal of Geosciences* 68, 249-259.

517. Roach, J.M., Manukyan, K.V., Dede, S., Burns, P.C. & Aprahamian, A. (2023): Combustion synthesis of Eu_2O_3 nanomaterials with tunable phase composition and morphology. *Journal of Solid State Chemistry* 326, 124235.

516. Meza, I., Jemison, N., Gonzalez-Estrella, J., Burns, P.C., Rodriguez, V., Sigmon, G.E., Szymanowski, J.E.S., Ali, A.-M., Gagnon, K., Cerrato, J.M. & Lichtner, P. (2023): Kinetics of Na- and K-uranyl arsenate dissolution. *Chemical Geology* 636, 121642.

515. Benjamin, S.E., LaVerne, J.A., Sigmon, G.E. & Burns, P.C. (2023): Investigation of radiation effects in the uranyl mineral metaschoepite. *Inorganic Chemistry* 62, 22601-22610.

514. Dede, S., Essenmacher, S.D., Gastis, P., Manukyan, K.V., Kuvin, S.A., Lee, H.Y., Roach, J.M., Burns, P.C. & Aprahamian, A. (2023): Electrospraying deposition and characterization of potassium chloride targets for nuclear science measurements. *Nuclear Instruments and Methods in Physics Research, A* 1055, 168472.

513. Sockwell, A.K., Sweet, T.F.M., Barth, B., Isbill, S.B., DiBlasi, N.A., Szymanowski, J.E.S., Sigmon, G.E., Oliver, A.G., Miskowiec, A.J., Burns, P.C. & Hixon, A.E. (2023): Insight into the structural ambiguity of actinide(IV) oxalate sheet structures: a case for alternate coordination geometries. *Chemistry – A European Journal* 29, e202301164.

512. Rodriguez, V.G. & Burns, P.C. (2023): Electrospray ionization tandem mass spectrometry with collision-induced dissociation of uranyl peroxide nanoclusters containing various uranyl bridging ligands. *Chemistry a European Journal* 29, e202300794.

511. Dede, S., Manukyan, K.V., Roach, J.M., Robertson, D., Burns, P.C. & Aprahamian, A. (2023): Irradiation-enhanced interactions at UO_2/Al_2O_3/Al interfaces. *Journal of Physical Chemistry C.* 127, 9850-9857.

510. Morrison, S.M., Prabhu, A., Eleish, A., Hazen, R.M., Golden, J.J., Downs, R.T., Perry, S., Burns, P.C., Ralph, J. & Fox, P. (2023): Predicting new mineral occurrences and planetary analog environments via mineral association analysis. *PNAS Nexus* 2, 1-13.

509. Felton, D.E., Galeas, B.E. & Burns, P.C. (2023): Cation directed formation of uranyl phosphonoacetate frameworks comprised of cross-linked chains. *Journal of Solid State Chemistry* 323, 124023.

508. Rodriguez, V.G., Culbertson, H.J., Sigmon, G.E. & Burns, P.C. (2023): Electrochemistry of uranyl peroxide solutions during electrospray ionization. *Inorganic Chemistry* 62, 4456-4466.

507. Olds, T.A., Lussier, A.J., Petricek, V., Plasil, J., Kampf, A.R., Oliver, A.G., Burns, P.C., Dembowski, M. & Stelle, I.M. (2023): Shinkolobweite, from the Shinkolobwe mine, Demoncratic Republic of Congo: A new mineral containing uranium in the rare pentavalent oxidation state. *The Canadian Journal of Mineralogy and Petrology* 61, 999-1020.

506. Sordyl, J. Rakovan, J., Burns, P.C., Topolska, J., Wlodek, A., Szymanowski, J.E.S., Sigmon, G.E., Majka, J. & Manecki, M. (2023): Single crystal analysis of La-doped pyromorphite $Pb_5(PO_4)_3Cl$. *American Mineralogist.* https://doi.org/10.2138/am-2022-8664.

505. Meza, I., Gonzalez-Estrella, J., Burns, P.C., Rodriguez, V., Velasco, C.A., Sigmon, G., Szymanowski, J., Forbes, T.Z., Applegate, L.M., Ali, A.-M. S., Lichtner, P. & Cerrato, J.M. (2023): Solubility and

thermodynamic investigation of meta-autunite group uranyl arsenate solids with monovalent cations sodium and potassium. *Environmental Science and Technology* 57, 255-265.

504. Majumdar, A., Manukyan, K., Tan, W., Dede, S., Roach, J.M., Couture, A., Burns, P.C. & Aprahamian, A. (2023): Neutron capture of UO_2 targets prepared by spin-coating-assisted combustion synthesis. *Nuclear Instruments and Methods in Physics Research A* 1045, 167551.

503. Benjamin, S.E., LaVerne, J.A., Sigmon, G.E. & Burns, P.C. (2022): Ozone-facilitated formation of uranyl peroxide in humid conditions. *Inorganic Chemistry* 61**,** 20977-20985.

502. Tyumentseva, O.S., Kornyakov, I.V., Kasatkin, A.V., Plasil, J., Krzhizhanovskaya, M.G., Krivovichev, S.V., Burns, P.C., & Gurzhiy, V.V. (2022): One of Nature's puzzles is assembled: analog of the Earth's most complex mineral, ewingite, synthesized in a laboratory. *Materials* 15, 6643.

501. Hastings, A.M., Fairley, M., Wasson, M.C., Campisi, D., Sarkar, A., Emory, Z.C., Gilson, S.E., Brunson, K., Fast, D.B., Nyman, M., Burns, P.C., Gagliardi, L., Islamoglu, T., Farha, O.K., Hixon, A.E., LaVerne, J.A. (2022): The role of metal selection in the radiation stability of isostructural M-UiO-66 metal-organic frameworks. *Chemistry of Materials* 34, 8403-8417.

500. Sweet, T.F.M., Felton, D.E., Szymanowski, J.E.S. & Burns, P.C. (2022): Targeting diverse bridging motifs with actinide borosulfates and establishing an unconventional structural hierarchy. *Inorganic Chemistry.* 61, 15953-15960. Selected as ACS Editor's Choice Article and featured on the cover of the journal.

499. Felton, D.E., Fairley, M., Arteaga, A., Nyman, M., LaVerne, J.A. & Burns, P.C. (2022): Gamma ray induced formation of uranyl peroxide cage clusters. *Inorganic Chemistry* 61, 11916-11922.

498. Dede, S., Manukyan, K.V., Roach, J.M., Majumdar, A., Burns, P.C. & Aprahamian, A. (2022): Irradiation-induced amorphization of UO_2 films prepared by spraying-assisted combustion synthesis. *Applied Surface Science* 603, 154437.

497. Julien, P.A., Castle, G., Theriault, J., Kohlgruber, T.A., Oliver, A.G. & Burns, P.C. (2022): Assembly of uranyl-peroxides from ball milled solids. *Inorganic Chemistry* 61, 11319-11324.

496. Kohlgruber, T.A., Felton, D.E., Traustason, H. & Burns, P.C. (2022): Exploring the role of organic functional groups in the ionothermal synthesis of uranyl phosphate materials. *Zeitschrift fur Anorganische and Allgemeine Chemie* https://doi.org/10.1002/zaac.202200162.

495. Pizio, B., Zhang, L., Burns, P.C. & Manecki, M. (2022): Thermodynamic characterization of synthetic lead-arsenate apatites with different halogen substitutions. *American Mineralogist* 108, 675-685.

494. Spano, T.L., Olds, T.A., Hall, S.M., Kampf, A.R., Burns, P.C. & Marty, J. (2023): Finchite, $Sr(UO_2)_2(V_2O_8).5H_2O$, a new uranyl sorovanadate with the francevillite anion topology. *American Mineralogist.* 108, 383-388.

493. Kampf, A.R., Olds, T.A., Plasil, J., Burns, P.C., Skoda, R. & Marty, J. (2022): Paramarkeyite, a new calcium uranyl carbonate mineral from the Markey mine, San Juan County, Utah, USA. *Mineralogical Magazine* 86, 27-36.

492. Kohlgruber, T.A., Perry, S.N., Sigmon, G.E., Oliver, A.E. & Burns, P.C. (2022): Hydrogen bond network and bond valence analysis on uranyl sulfate compounds with organic-based interstitial cations. *Journal of Solid State Chemistry* 307, 122871.

491. Fairley, M., Felton, D., Sigmon, G.E., Szymanowski, J.E.S., Poole, N., Nyman, M., Burns, P.C. & LaVerne, J.A. (2022): Radiation induced solid state transformations of uranyl peroxides. *Inorganic Chemistry* 61, 882-889.

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14. Burns, P.C. & Hawthorne, F.C. (1993): Hydrogen positions in colemanite: an X-ray and structure energy study. *Canadian Mineralogist 31*, 297-304.

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12. Burns, P.C. & Hawthorne, F.C. (1993): Tolbachite, $CuCl_2$, the first example of Cu^{2+} octahedrally coordinated by Cl^-. *American Mineralogist 78*, 187-189.

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10. Burns, P.C., Hawthorne, F.C., MacDonald, D.J., Della Ventura, G. & Parodi, G.C. (1993): The crystal structure of stillwellite. *Canadian Mineralgist 31*, 147-152.

9. Burns, P.C. & Hawthorne, F.C. (1993): Rietveld refinement of the crystal structure of α-$CoSO_4$. *Powder Diffraction 8*, 54-56.

8. Hawthorne, F.C., MacDonald, D.J. & Burns, P.C. (1993): Reassignment of cation site-occupancies in tourmaline: Al/Mg disorder in the crystal structure of dravite. *American Mineralogist 78*, 265-270.

7. Roberts, A.C., Stirling, J.A.R., Grice, J.D., Burns, P.C., Roulston, B.V. & Jambor, J.L. (1993): Pringleite and ruitenbergite, two new polymorphs of $Ca_9B_{36}O_{34}(OH)_{24}Cl_4.13H_2O$, from Sussex, New Brunswick. *Canadian Mineralogist 31*, 795-800.

6. Burns, P.C., Hawthorne, F.C. & Stirling, J.A.R. (1992): Trembathite, $(Mg,Fe)_3B_7O_{13}Cl$, a new borate mineral from the Salt Springs potash deposit, Sussex, New Brunswick. *Canadian Mineralogist. 30*, 445-448.

5. Burns, P.C., Eby, R.K. & Hawthorne, F.C. (1991): Liroconite, $Cu_2Al(AsO_4)(OH)_4(H_2O)_4$, a heteropolyhedral framework oxysalt mineral. *Acta Crystallographica C47*, 916-919.

4. Burns, P.C. & Hawthorne, F.C. (1991): Rietveld refinement of the crystal structure of CuF_2. *Powder Diffraction 6*, 156-158.

3. Sherriff, B.L., Fleet, M.E., & Burns, P.C. (1991): Tetrahedral site ordering in synthetic gallium albite; a ^{29}Si MAS NMR Study. *Journal of Solid State Chemistry 94*, 52-58.

2. Burns, P.C. & Fleet, M.E. (1990): Unit-cell dimensions and tetrahedral-site ordering in synthetic gallium albite ($NaGaSi_3O_8$). *Physics and Chemistry of Minerals 17*, 108-116.

1. Fleet, M.E. & Burns, P.C. (1990): Structure and twinning of cobaltite. *Canadian Mineralogist 28*, 719-724.

Selected Invited University, National Laboratory, and Institute Lectures

1. Pacific Northwest National Laboratory, Distinguished Lecture Series
2. Los Alamos National Laboratory, Geoscience Distinguished Lecturer
3. Argonne National Laboratory, Division of Chemistry
4. Sandia National Laboratory, Geoscience Distinguished Lecturer
5. Lawrence Berkeley National Laboratory
6. Brookhaven National Laboratory
7. Idaho National Laboratory

8. Savannah River National Laboratory
9. Lawrence Livermore National Laboratory
10. Arizona State University, Department of Geology
11. Aarhus University, Department of Geology (Denmark)
12. University of Alberta, Department of Geology (Canada)
13. Duke University, Department of Geology
14. University of Saskatchewan, Department of Geology (Canada)
15. Auburn University, Department of Chemistry
16. National Academy of Sciences of the USA
17. Institute for Transuranium Elements (ITU) (Germany)
18. Brown University, Department of Geology
19. McGill University, Department of Chemistry (Canada)
20. Northwestern University, Department of Chemistry
21. University of Missouri – Columbia, Department of Chemistry
22. Juniata College, Department of Chemistry
23. Lehigh University, Department of Chemistry
24. University of Minnesota, Department of Chemistry
25. American Nuclear Society, Carlsbad Chapter
26. University of Manitoba, Department of Chemistry
27. Miami University of Ohio, Department of Geology
28. Indiana University, Department of Geology
29. University of Illinois-Chicago, Department of Geology
30. Indiana State University, Department of Chemistry
31. Indiana University Purdue University Indianapolis, Department of Geology
32. Western Michigan University, Department of Geology
33. Washington University in St. Louis, Department of Geology
34. Stuttgart University, Department of Chemistry (Germany)
35. Peking University, Department of Chemistry (China)
36. Tsinghua University, Department of Chemistry (China)
37. Xi'an Jiaotong University (China, on two occasions)
38. University of Michigan, Department of Geology
39. Centro de Investigacion en Materiales Avanzados, S.C. (Mexico)
40. University of Illinois-Urbana, Department of Geology
41. University of Akron, Department of Chemistry
42. University of California, Davis
43. Saint Petersburg State University (Russia)
44. Russian Academy of Science (Moscow, Russia, multiple)
45. Pierre and Marie Currie University (Paris, France)
46. University of Lille (France)

47. Imperial College, London, Department of Geology (United Kingdom)
48. Shanghai Institute for Physics, Shanghai (China)
49. Suchow University (China)
50. Changzhou University (China)
51. Kunming University (China)
52. Yunnan Minzu University (China)
53. Institute for High Energy Physics (Beijing, China, multiple times)
54. Institute for Crystallography (Moscow, Russia)
55. Air Force Academy, Wright-Patterson Air Force Base (Ohio)
56. Northern China Electric Power University (China)
57. Geophysical Laboratory, Carnegie Institute (Washington, DC)
58. University of South Dakota, Department of Chemistry
59. Helmholtz-Zentrum Dresden-Rossendorf (Germany)
60. University of South Carolina, Department of Chemistry
61. University of New Mexico, Department of Earth and Planetary Sciences
62. Washington State University, Department of Chemistry
63. Saint Michael's College, Department of Chemistry (Vermont)
64. AHG University of Science and Technology (Poland)
65. University of Innsbruck (Austria)

Plenary, Keynote, and Invited Conference Lectures (multiple in many cases)

American Chemical Society
Materials Research Society
Geological Association of Canada – Mineralogical Association of Canada
Frontiers in Mineralogy (Cambridge, UK)
Goldschmidt
Radiochem 2014 and 2018 (Czech Republic)
International Mineralogical Association (Canada, Hungary, South Africa, Australia)
Geological Society of America
American Geophysical Union
American Crystallographers Association
Actinides 2013 (Germany)
Pacifichem
Plutonium Futures
Migrations
Advanced Techniques in Actinide Spectroscopy
Russian Mineralogical Society

Post-Doctoral Fellows Advised

1. Frances Hill, USA, working in private sector

2. Sergey Krivovichev, Russia, Professor at St. Petersburg State University and Chair of Crystallography, Directory of Kola Science Center in Apatity, Corresponding Member of the Russian Academy of Science
3. Christopher Cahill, USA, Professor and Department Chair of Chemistry at George Washington University
4. Paul W. O. Hoskin, Australia, Professor at Sunway University, Malaysia
5. Robert Shuvalov, Russia, employed in private sector
6. Oxana Kurnakova, Russia, Research associate in Russian Academy of Sciences
7. Philip Almond, USA, staff scientist at Savannah River National Lab
8. Jie Ling, China, associate professor of chemistry, Claflin University
9. Christian Lipp, Germany, research scientist with Swarovski
10. Andrew Quicksall, USA, associate professor at Southern Methodist University
11. Zuolei Liao, China, employed with U.S. Army
12. Jie Qui, China, Professor of chemistry at Xi'an Jiaotong University, China (Winner of 1000 Talents)
13. Laurent Jouffret, France, French Alternative Energies and Atomic Energy Commission (CEA), France
14. Pius Adelani, Nigeria, Associate professor of inorganic chemistry, St. Mary's University.
15. George Oh, USA, unknown.
16. Zhehui Weng, China, Professor of Chemistry at Kunming University, China
17. Aaron Lussier, Canada, Curator and Research Scientist, Canadian Museum of Nature
18. Jean-Marie Babo, Cameroon, unknown.
19. Matt Ward
20. Sara Mana, USA, Assistant professor at Salem University
21. Hulya Kacmaz, Turkey, Professor, Dokuz Eylul University, Turkey
22. Zhi-Hui Zhang, Professor of chemistry at Chongzhou University, China
23. Lei Zhang, Professor in China
24. Fabrice DalBo, Belgium as a post-doc.
25. Sergey Aksenov, Russia, scientist at Kola Science Center, Russia.
26. Patrick Julien, Canada (current)
27. Danielle Hutchison, USA, scientist at Argonne National Laboratory

Graduate Students Advised

1. Jennifer Jackson. M.S. 2000, Professor at California Institute of Technology
2. Yaping Li. Ph.D. 2002, chemist in the private sector
3. Andrew Locock. Ph.D. 2004, research faculty member at the University of Alberta
4. Karrie-Ann Hughes. M.S. 2004; Ph.D. 2005, investment specialist
5. Bridget McCollam. M.S., 2005, research scientist at Los Alamos National Laboratory
6. Paul Geisting. Ph.D. 2006, faculty at University of Southern Illinois
7. Tori Forbes. Ph.D. 2007, Associate professor of chemistry, University of Iowa
8. Amanda Klingensmith. Ph.D. 2008, U.S. Department of Energy, National Nuclear Security Administration

9. Valerie Goss. M.S. 2009, assistant professor of chemistry, Chicago State University
10. Nancy Roback. M.S. 2009
11. Daniel Unruh. Ph.D. 2011, department crystallographer at Texas Tech University
12. Ginger Sigmon, Ph.D. 2009, Managing Director Center for Sustainable Energy at Notre Dame
13. Amanda Albrecht. M.S. 2016
14. Christine Wallace. Ph.D. 2013, U.S. State Department
15. Jessica Beard. Ph.D. 2013, Freelance science journalist, Product Manager, Chemical and Engineering news (American Chemical Society weekly magazine)
16. Kristi Pellegrini. Ph.D. 2015, Senior scientist, Knolls Atomic Power Laboratory
17. Enrica Balboni. Ph.D. 2014, post-doc and now staff scientist at Lawrence Livermore National Laboratory
18. Miller Wylie. Ph.D. 2015, Actinide Chemist at Los Alamos National Laboratory
19. Brendan McGrail. Ph.D. 2014
20. Nathan Meredeth. Ph.D. 2016, assistant professor of chemistry, University of Central Arkansas
21. Yi Liu. Ph.D. 2017, PTD Module and Integration Device Yield Engineer at Intel, Portland
22. Ewa Dzik. Ph.D. 2017, assistant professor, Gdansk University of Technology (Poland)
23. Travis Olds. Ph.D. 2017, Mineral Curator, Carnegie Museum
24. Tyler Spano. Ph.D. 2017, post-doc and now staff scientist at Oak Ridge National Laboratory
25. Philip Smith. Ph.D. 2018, staff scientist at Los Alamos National Laboratory
26. Mateusz Dembrowski. Ph.D. 2017, post-doc at Los Alamos National Laboratory
27. Melika Sharifironizi. Ph.D. 2017, assistant research professor, Penn State
28. Haylie Lobeck. Ph.D. 2019, NNSA Albuquerque
29. Sarah Hickam. Ph.D. 2019, Los Alamos National Laboratory
30. Mengyu Xu. Ph.D. 2020, currently post-doc at Cornell
31. Hrafn Traustason. Ph.D. 2021, consultant at ZS
32. Samuel Perry. Ph.D. 2023, post-doc at NNSA
33. Foteini Dimakopoulou. M.S. 2020
34. Stephanie Mackley. M.S. 2022
35. Tsuyoshi Kohlgruber. Ph.D. 2022, post-doc at Pacific Northwest National Laboratory
36. Sara Gilson. Ph.D. 2021, post-doc at HZDR (Germany), post-doc at Oak Ridge National Laboratory
37. Savannah Benjamin. Ph.D. 2023, post-doc at NNSA
38. Aliya Whitehill. M.S. 2021, staff at Pacific Northwest National Laboratory
39. Daniel Felton. Ph.D. 2023, post-doc at Oak Ridge National Laboratory
40. Jordan Roach. Ph.D. 2023, post-doc at Oak Ridge National Laboratory
41. Justin Daniels. Ph.D. expected 2024
42. Cale Gaster. Ph.D. expected 2024
43. Virginia Rodriguez. Ph.D. 2024. NSF Graduate Fellowship
44. Yongyi Liu. M.S. 2023
45. Teagan Sweet. Ph.D. expected 2025
46. Grace Arntz. Ph.D. expected 2025
47. Brodie Barth. Ph.D. expected 2025
48. Carmen Chamberlain. Ph.D. expected 2025
49. Zoe Emory. Ph.D. expected 2025

Undergraduate Research Students Advised

1. Erin Keppel (REU, summer 1998)
2. Alex Garza (REU, summer 1998)
3. Rebecca Glatz, Goldwater Fellowship, NSF Graduate Fellowship (REU, spring 1999, summer 1999, spring 2000, fall 2000, spring 2001) MS Stanford
4. Kara Tholen (REU fall 1999, spring 2000, fall 2000, spring 2001)
5. Andrew Irvine (REU, spring 2000)
6. Aaron Martin (REU, summer 2000)
7. Kathryn Deely (REU, spring 2001, spring 2002, summer 2002, fall 2002, spring 2003)
8. Leslie Hayden (REU, summer 2001, fall 2001, summer 2002, fall 2002, spring 2003). PhD RPI
9. Lauren Sturm (REU, summer 2002, fall 2002, spring 2003, now in law school)
10. Jessica Callahan (REU, summer 2003)
11. Theodore Flynn (REU, summer 2003) PhD U. Illinois
12. Peter Hotchkiss (REU, summer 2003) PhD from Georgia Tech, Now Principal Member of Technical Staff, Sandia National Laboratory.
13. Virginia Kelly (REU, fall 2003, spring 2004)
14. Nathan Porter (REU, summer 2004)
15. Patrick Horan (REU, summer 2004, fall 2004) MS Univ. Southern California
16. Karen Carlaccini (REU, summer 2004, 2005)
17. Ginger Sigmon (REU, summer 2004) PhD Notre Dame.
18. Meha Jain (REU, summer 2003, 2004, 2005) PhD from Columbia U., Now Assistant Professor, University of Michigan.
19. Jinalee Almes (REU, summer 2004, fall 2004, summer 2005)
20. Daniel Unruh (REU, summer 2005) PhD Notre Dame, Now crystallographer at Texas Tech U.
21. Katie Gunderson (REU, summer 2005) PhD U. Cambridge
22. Liz Grob (REU, summer 2005)
23. Laura Adams (REU, summer 2005)
24. Kate Skog (REU, summer 2006)
25. Alex Burum (REU, summer 2006, now PhD student at Ohio State)
26. Meghan Crowley (REU, summer 2006)
27. Melissa Baranay (REU, summer 2007)
28. Kelsey Jones (REU, summer 2007)
29. Amanda Albrecht (REU, summer 2007) MS Notre Dame
30. Jessica Beard (REU, summer 2007) PhD Notre Dame
31. Brittney Weaver (REU summer 2008)
32. Jacob Vervynckt (REU, summer 2007)
33. Alicia Burtner (REU, academic year 2007-2008) MS Duke
34. Rachel Murphy (REU academic year 2007-2008) PhD U. Wisconsin

35. Adam Marsh (REU summer 2009, Academic year 2009-2011) PhD U.T. Austin.
36. Laura Moore-Shay (REU 2008-2010)
37. Christine Wallace (REU summer 2008) PhD Notre Dame, Now at U.S. State Department.
38. Matthew Ward (REU 2007-2009) PhD Northwestern
39. Emily Colin (REU summer 2009)
40. Colleen Dawes (REU summer 2009, academic year 2009-2011)
41. Hayley Coffing (REU academic year 2009-2011)
42. Leanne Tschirhart (REU academic year 2009-2010)
43. Meehan Lenzen (REU academic year 2009-2010)
44. Megan Stoffer (REU, academic year 2009-2011)
45. William Tintor (REU, academic year 2009-2011)
46. Amanda Siemann (REU, academic year 2010-2011) PhD Princeton.
47. Angela Schad (REU, academic year 2010)
48. Kelly Nickodem (REU, academic year 2009-2011)
49. Kevin Burke (REU, academic year 2010)
50. Laura Reinke (REU, academic year 2011)
51. Kate Turner (REU, summer 2010, academic year 2010-2011) PhD Stanford
52. Claire George (REU, academic year 2011)
53. Audrey Sui (REU, academic year 2010-2011)
54. Christopher Schreyer (REU, summer 2010, academic year 2010-2011)
55. Joan Gary (REU, academic year 2010-2011)
56. Serge Mardini (REU, academic year 2010-2011)
57. Steven Prendergast (REU, academic year 2010-2011)
58. Michelle Baranay (REU, 2010)
59. Steven Walsh (REU, 2010)
60. Franklin Hobbs (REU, 2010)
61. Claire Sieradzki (REU, 2010, academic year 2012-2013)
62. Tyler Evans (academic year 2010-2011)
63. Bryce Burton (REU summer 2011, 2012)
64. Michael Ozga (REU Summer 2011, 2012, academic year 2011-2012)
65. Nicolas Martinez (REU summer 2011, academic year 2011-2012, 2012-2013)
66. Maya Reimi (REU summer 2011) PhD Texas A&M
67. Haylie Lobeck (REU summer 2011, 2012, 2013) PhD Notre Dame
68. Melanie Johnston (REU summer 2011, 2012)
69. Kevin Nguyen (academic year 2011-2012, 2012-2013, 2013-2014, summer 2012)
70. Megan Dustin (academic year 2011-2012, 2012-2013, 2013-2014, summer 2013) MS Stanford
71. Rebecca Thomas (academic year 2011-2012)
72. Hannah Miller (academic year 2011-2012) PhD U. Colorado

73. Christopher Andrews (academic year 2011-2012, 2012-2013, 2013-2014, 2014-2015) PhD U. Tennessee
74. Ryann Sypniewski (academic year 2011-2012, 2012-2013)
75. Alexa Sieracki (REU Summer 2012)
76. Laura Pianowski (REU summer 2012)
77. Alexis Guzman (REU summer 2012, 2013)
78. Jeremy Smith (REU summer 2012)
79. Alex Johnson (REU summer 2012)
80. Victoria DiStefano (academic year 2012-2013), PhD U. Tennessee 2018.
81. Kathryn Peruski (academic year 2012-2013, 2013-2014, 2014-2015, summer 2013), PhD student at Clemson.
82. Nathaniel Cook (academic year 2012-2013)
83. Isaac Evans (summer 2013, academic year 2013-2014)
84. Paul Hurley (academic year 2013-2014, 2014-2015, summer 2013)
85. Alicia Czarnecki (summer 2013, academic year 2013-2014, 2014-2015, 2015-2016)
86. Megan Petti (academic year 2013-2014)
87. Sarah Prizio (academic year 2013-2014, 2014-2015)
88. Zoe Simms (academic year 2013-2014, 2014-2015, 2015-2016)
89. Alejandra Cartagena (REU summer 2013)
90. Sally Steuterman (REU summer 2013)
91. Thelmar Manyika (REU summer 2014)
92. Ben Moeller (REU summer 2014, academic year 2014-2015)
93. Michael Ok Ji (REU Summer 2014)
94. Madison Turner (REU summer 2014, 2015)
95. Stacie Skwarcan (REU Summer 2014)
96. Grant Kippenbrock (academic year 2014-2015)
97. Sara Boukdad (academic year 2014-2015, 2015-2016, summer 2015)
98. Wen Cong Toh (academic year 2014-2015, 2015-2016, 2016-2017, summer 2015)
99. Dallas Hamlin (REU summer 2015)
100. Gabriel Gasper (academic year 2015-2016)
101. Connor Parker (academic year 2015-2016, 2016-2017), PhD student at Clemson.
102. John Fitzpatrick (academic year 2015-2016, 2016-2017)
103. Matthew Chamberlain (academic year 2015-2016)
104. Brandon Burdine (academic year 2015-2016)
105. Erica Cole (REU summer 2016)
106. Sarah Castillo (academic year 2016-2017)
107. Jordan Isner (academic year 2016-2017)
108. Wen Cong Toh (academic year 2016-2017)
109. Kiana Caranto (academic year 2017-2018)

110. Jackie Breier (academic year 2017-2018)
111. Matthew Winkler (academic year 2017-2018)
112. Peter Eckard (academic year 2017-2018)
113. Henry Ridder (academic year 2017-2018)
114. Aleksandra Gawronksa (academic year 2017-2018)
115. Holly Miller (academic year 2017-2018)
116. Arianna Latuda (2020-2022)
117. Madison Brooks (2020-2022)
118. Yamile Cornejo Carrillo (2020-2021)
119. Haizhen Zhang (2020-2021)
120. Grace Castle (2020-2022)
121. Jordan Theriault (2020-2021)
122. Nickolas Poore (2019-2022)
123. Abigail Martin (2018-2021)
124. Amanda Patterson (2020-2021)
125. Caitlyn Cano (2021-2022)
126. Gabe Goertz (2021-2022)
127. Anna Zielinski (2021-2022)
128. Chloe Behringer (2021-2022)
129. Eva Homberger (2021-2023)
130. Kaysie Ratliff (2022-2023)
131. Jessica Wysocki (2022-2023)
132. Grace Hsu (2022-2023)

Administrative and University Activities

Director, Center for Sustainable Energy at Notre Dame (ND Energy) (2014-present):

Directed a university center representing approximately 90 faculty members, with eight staff members and a Core instrument facility. Annual operating budget is ~$900,000. This center emphasizes multidisciplinary studies of sustainable energy from scientific, engineering, and policy perspectives.

Director, Actinide Center of Excellence (2017-2020):

Directed the research of eight senior investigators in a multi-investigator center. Responsible for all budgetary and reporting obligations of this NNSA-funded center. The research was focused on basic aspects of actinide chemistry and actinide environmental chemistry with an emphasis on training PhD students in fields relevant to nuclear stockpile stewardship.

Director, Materials Science of Actinides (2009-2018):

Directed the research of sixteen senior investigators in a multi-investigator Energy Frontier Research Center. Responsible for all budgetary and reporting obligations of this DOE-funded center. This EFRC involved several institutions (universities and national laboratories) over the course of its duration.

Chair of the Department of Civil Engineering and Geological Sciences (2002-2009):

August 22, 2002 to December 31, 2009. Chair of Department of about 20 faculty, ten staff, approximately 120 undergraduates, approximately 55 graduate students.

My duties as Department Chair included the following:

- Determining the annual budget in consultation with the Dean of Engineering
- Assigning faculty salary raises based upon assessment of performance
- Chair of the Committee on Appointments and Promotions (CAP)
- Teaching assignments at the undergraduate and graduate levels
- Budget management including cost sharing for research grant applications
- Providing the Chair's recommendation in writing concerning all faculty appointments and promotions, and defending this position at the College of Engineering level
- Mentoring all faculty of the Department, with emphasis on untenured faculty
- Performance assessment for all untenured faculty annually
- Maintaining the Department's undergraduate civil engineering program accreditation by ABET (Accreditation Board for Engineering and Technology), including overseeing assessment of program objectives and outcomes
- Recruitment of graduate students and graduate admissions (with the assistance of the Director of Graduate Studies)
- Curriculum planning for programs at the undergraduate level, including curriculum revision and providing exceptions to the curriculum
- Developing and executing, in cooperation with the faculty, a strategic plan for education and research
- Overseeing and guiding the faculty recruitment process
- Working with the Development Office in fund raising ventures
- Serving on the College Executive Committee and the College Council, both of which chart the direction of the College of Engineering
- Interfacing with the College and Department Advisory Councils

Director of Graduate Studies

I was Director of Graduate Studies from July 1999 to August 2002 (at which time I became Department Chair). In this capacity I was responsible for coordinating all graduate student recruitment activities, graduate admissions, distribution of graduate assistantships and tuition waivers, evaluation of progress of graduate students, assignment of advisory committees, coordinating and overseeing Ph.D. candidacy examinations, and graduate student problem resolution.

University, College and Department Committees

Instructional Continuity Task Force (COVID-related) (2020)
College of Engineering Dean Search Committee (elected)
Department Chair Search Committee (elected)
Department Graduate Studies Committee (chaired)
University Graduate Council (two terms)
University Academic Council

University Radiation Control Committee (Chair for past 12 years)
Multiple Departmental Search Committees, two Keough School search committees
Department Committee on Appointments and Promotions
Endowed Chair promotion committee
College of Engineering Council
Dean Review Committee (twice)
College of Engineering Executive Committee (8 years)
Vice President for Research Review Committee
University Committee on Appeals (three terms)
University Committee on Libraries