Annual Report
2021-2022
Chemistry Department

IA. Peer-Reviewed Faculty Publications

Maria Hepel

1. "Advances in Micro-Supercapacitors (MSCs) with High Energy Density and Fast Charge-Discharge Capabilities for Flexible Bioelectronic Devices - A review"; HEPEL M.**,** ***Electrochem. Sci. Adv.*** **2022**, *2, 1 -33*
   Invited paper for the Special Issue on *Electrochemical Advances*
   http:// doi.org/ 10.1002/elsa.202100222.

2. "Advances in Design Strategies of Multiplex Electrochemical Aptasensors" GRABOWSKA I., HEPEL M., KURZATKOWSKA-ADASZYNSKA K, ***Sensors, MDPI*** **2022**, *22* (1), 1-21, 161; ***https://doi.org/***10.3390/s22010161
   Invited paper for the Special Issue.

Fadi Bou-Abdallah

1- Milán, A.F., Rincón, O.A., Arango, L.B., Reutovich, A.A.*****, Smith, G.L.*****, Giraldo, M.A., Bou-Abdallah, F., Calderón, J.C. "*Calibration of Mammalian Skeletal Muscle Ca^{2+} Transients Recorded with the Fast Ca^{2+} Dye Mag-Fluo-4*". ***Biochim. Biophys. Acta (BBA)*** **2021**, 1865, 129939.
https://www.sciencedirect.com/science/article/abs/pii/S0304416521000970

2- Smith, G.L*****, Reutovich, A.A.*****, Srivastava, A.K.*****, Reichard, R.E.*****, Welsh, C.H.*****, Wilkinson, T., Melman, A., Bou-Abdallah, F, "*Complexation of Ferrous Ions by Ferrozine, 2,2'-Bipyridine and 1,10-Phenanthroline: Implication for the Quantification of Iron in Biological Systems*". ***J. Inorg. Biochem.*** **2021**, 220, 111460.
https://www.sciencedirect.com/science/article/pii/S0162013421001070

3- Sharpe, E.[#], Farragher-Gnadt, A.P.[#], Igbanugo, M.[#], Huber, T., Michelotti, J.C., Milenkowic. A., Ludlam. S., Walker. M., Hanes. D., Bradley, R., Bou-Abdallah, F, "*Comparison of antioxidant activity and extraction techniques for commercially and laboratory prepared extracts from six mushroom species*". ***J. Agr. Food Res.*** **2021**, 4, 100130. https://www.sciencedirect.com/science/article/pii/S2666154321000326

4- Srivastava, A K.*****, Poli, M., Arosio, P., Bou-Abdallah, F. "*A Novel Approach for the Synthesis of Human Heteropolymer Ferritins of Different H to L Subunit Ratios*". ***J. Mol. Biol.*** **2021**, 433, 167198.
https://www.sciencedirect.com/science/article/pii/S0022283621004319

5- Gideon L. Smith[#], Ayush K. Srivastava[*], Aliaksandra A. Reutovich[*], Nathan J. Hunter[#], Paolo Arosio, Artem Melman, Fadi Bou-Abdallah, "*Iron Mobilization from Ferritin in Yeast Cell Lysate and Physiological Implications*", ***Int. J. Mol. Sci.*** **(MDPI) 2022**, 23, 6100. https://www.mdpi.com/1422-0067/23/11/6100

6- Reutovich Aliaksandra[*]; Srivastava Ayush[*]; Smith Gideon[#]; Foucher Alexandre; Yates Douglas; Stach Eric; Papaefthymiou Georgia; Arosio paolo; Bou-Abdallah, Fadi. "*Effect of Phosphate and Ferritin Subunit Composition on the Kinetics, Structure, and Reactivity of the Iron Core in Human Homo- and Hetero-polymer Ferritins*". ***Biochemistry*** **2022**, 61, 19, 2106–2117. https://pubs.acs.org/doi/10.1021/acs.biochem.2c00354

7- Thomas Longo, Steve Kim, Ayush K. Srivastava[*], Lauren Hurley, Kaixuan Ji, Arthur Viescas, Nicholas Flint[#], Alexandre C. Foucher, Douglas Yates, Eric Stach, Fadi Bou Abdallah, Georgia C. Papaefthymiou. "*Micromagnetic and morphological characterization of heteropolymer human ferritin cores*". ***Nanoscale Advances 2022***. Accepted.

* **SUNY Potsdam Undergraduate Students Co-authors;**
 # SUNY Potsdam Students Alumni

IB. Other Faculty Publications (including WEB news, discussions, reviews, editorials, etc.)

Fadi Bou-Abdallah

* Filed a full patent with the office of Innovation and Entrepreneurship, The Research Foundation for SUNY; the patent is entitled: "Expression and Purification of Human Isoferritins Using a Novel Expression System"- 2021

* Featured on the Council on Undergraduate Research (CUR) webpage, Chemistry Division, 2021 Outstanding Mentorship: https://www.cur.org/2021ChemCURmentorship_awdees/
https://www.potsdam.edu/news/dr-fadi-bou-abdallah-honored-council-undergraduate-research

Martin Walker

1. Andrea Jacobs, Dustin Williams, Katherine Hickey, Nathan Patrick, Antony J. Williams, Stuart Chalk, Leah McEwen, Egon Willighagen, Martin Walker, Evan Bolton, Gabriel Sinclair, and Adam Sanford, "CAS Common Chemistry in 2021: Expanding Access to Trusted Chemical Information for the Scientific Community", J. Chem. Inf. Model. 2022, 62, 11, 2737–2743, https://doi.org/10.1021/acs.jcim.2c00268

II. Papers Delivered by Faculty and Students at Conferences and Conference Attendance. Faculty Presenter and Students Presenter names underlined

IIA. Professional Meetings

Fadi Bou-Abdallah

Conferences 2021

Conference #1: Spring 2021 National ACS meeting (Virtual, April 5-16, 2021)

1) **Dr. Fadi Bou-Abdallah.** Talk at the Spring 2021 National ACS meeting "Macromolecular Chemistry: the 2nd Century". Session: Understanding and Treating Disease, April 9, 2021. Title of talk: Iron Metabolism in Biological Systems: The Story of Transferrin and Ferritin and Why We Do Not Rust". **(Oral Talk)**

2) **Gideon Smith**, and Fadi Bou-Abdallah. Characterization of Mutant L-Chain ferritins Responsible for Neuroferritinopathy. **(Poster presentation)**

3) **Aliaksandra Reutovich**, and Fadi Bou-Abdallah The Effect of Physiological Phosphate Concentrations on Iron Mineralization and Mobilization in Ferritin. **(Poster presentation)**

4) **Ruth Reichard, Cass Welch**, and Fadi Bou-Abdallah. Complexation of Ferrous Ions by Ferrozine, 2,2'-Bipyridine and 1,10-Phenanthroline: Implication for the Quantification of Iron in Biological Systems. **(Poster presentation)**

5) **Ayush Srivastava** and Fadi Bou-Abdallah. Thermodynamic and Kinetic Studies of the Interaction of Nuclear Receptor Coactivator-4 (NCOA4) with Human Ferritin. **(Poster presentation)**

Conference #2: 2021 Protein Society Conference - The 35th Anniversary Symposium (PS35 Virtual Symposium, July 7 – 9, 2021)

1) **Ayush Srivastava**, Fadi Bou-Abdallah. A Novel Approach for the Synthesis of Human Heteropolymer Ferritins of Different H to L Subunit Ratios. **(Oral Presentation)**

<u>Conference #3:</u> National Council on Undergraduate Research Conference (NCUR 2021, April 12 - 14, Virtual)

1) **<u>Gideon Smith</u>**, and Fadi Bou-Abdallah. Characterization of Mutant L-Chain ferritins Responsible for Neuroferritinopathy. Poster presentation. **(Oral presentation)**

2) **<u>Ruth Reichard</u>**, and Fadi Bou-Abdallah. A Rapid and Sensitive Colorimetric Method for the Detection of Several Toxic Heavy Metal. **(Poster presentation)**

3) **<u>Aliaksandra Reutovich</u>**, and Fadi Bou-Abdallah The Effect of Physiological Phosphate Concentrations on Iron Mineralization and Mobilization in Ferritin. **(Poster presentation)**

4) **<u>Cass Welch</u>**, and Fadi Bou-Abdallah. Dependence of Ferrozine and Iron Concentration on the Kinetics of Ferrozine-Fe 2+ complexation Reaction. **(Poster presentation)**

<u>Conference #4:</u> SUNY Undergraduate Research Conference (SURC) 2021-SUNY Old Westbury

1) **<u>Ruth Reichard</u>,** and Fadi Bou-Abdallah. A Rapid and Sensitive Colorimetric Method for the Detection of Several Toxic Heavy Metal. **(Poster presentation)**

2) **<u>Gideon Smith</u>**, and Fadi Bou-Abdallah. Characterization of Mutant L-Chain ferritins Responsible for Neuroferritinopathy. Poster presentation. **(Poster presentation)**

3) **<u>Aliaksandra Reutovich</u>**, and Fadi Bou-Abdallah The Effect of Physiological Phosphate Concentrations on Iron Mineralization and Mobilization in Ferritin. **(Poster presentation)**

4) **<u>Cass Welch</u>**, and Fadi Bou-Abdallah. Dependence of Ferrozine and Iron Concentration on the Kinetics of Ferrozine-Fe 2+ complexation Reaction. **(Poster presentation)**

<u>Conferences 2022</u>

1) H-Rich and L-Rich Heteropolymer Ferritins Reconstituted at 1000 ^{57}Fe/protein for Mössbauer Investigations. **<u>Georgia C. Papaefthymiou</u>**, Fadi Bou-Abdalllah**,** Paolo Arosio**.** *19th International Conference on Nanosciences & Nanotechnologies (NN22), 5-8 July 2022, Thessaloniki, Greece.*

<u>David Gingrich</u>

Attended American Society for Biochemistry and Molecular Biology (ASBMB) 2022 Annual Meeting in conjunction with Experimental Biology, April 2-4, 2022, Philadelphia, PA.

Fathima Nazeer

"DNA damage and mRNA maturation. What's the connection?", Science Café organized by Clarkson University (2022).

Maria Hepel

1. "Novel Approaches to the Controlled Targeted Delivery of Anticancer Drugs Based on Recent Advances in Bionanotechnology", invited 90 minutes seminar presentation for Medical University, Lublin, Poland, February 25, 2022 (ZOOM).

2. Invited to present two lectures during workshop for graduate students at the Medical University, Lublin, Poland, September 8, 2022.
   - "Nanoparticles for Targeted Drug Delivery and Synergistic Chemo-Photothermal Therapy"
   - "Biomedical Applications of Cerium Oxide Nanoparticles""

IIB. Presentations at the Learning & Research Fair, SUNY Potsdam

Fathima Nazeer

1. Aisha Laguda and Fathima Nazeer. "Is the proteasome involved in ELc1 mediated degradation of polyadenylation factors?" (Poster Presentation).

Maria Hepel

1. Lawrence Tucker , Daniel Russotti and Maria Hepel. "Assembly of Gold Nanoparticles Induced by Metal Ions", May 11, 2022 (Poster Presentation).

Fadi Bou Abdallah

1) **Aliaksandra Reutovich**, and Fadi Bou-Abdallah The Effect of Physiological Phosphate Concentrations on Iron Mineralization and Mobilization in Ferritin. **(Poster presentation) (Winner of the Provost's Award for Excellence in Student Research)**

2) **Ruth Reichard**, and Fadi Bou-Abdallah. A Rapid and Sensitive Colorimetric Method for the Detection of Several Toxic Heavy Metal. **(Poster presentation) (First Place Winner of the Frederick B. Kilmer Research Award)**

3) **Gideon Smith**, and Fadi Bou-Abdallah. Characterization of Mutant L-Chain ferritins Responsible for Neuroferritinopathy. **(Poster presentation)**

4) **Cass Welch**, and Fadi Bou-Abdallah. Dependence of Ferrozine and Iron Concentration on the Kinetics of Ferrozine-Fe^{2+} complexation Reaction. **(Poster presentation)**

5) Lucas J. Scalcione, Ayush K. Srivastava, Fadi Bou-Abdallah, "Thermostability of Heteropolymer Ferritin with Different H to L Subunit Ratios Studied by Differential Scanning Calorimetry", Learning and Research Fair – SUNY Potsdam, May 10-13, 2022 (Virtual and In Person). **(2nd Place Winner of the Frederick B. Kilmer Research Award).**

IIC. Presentations at the ACS Undergraduate and Graduate Chemistry and Biology Symposium

Fadi Bou-Abdallah

Conference: 11th NNY ACS Annual Research Symposium (April 17, 2021-Virtual)

1) **Ayush Srivastava**, and Fadi Bou-Abdallah. A Novel Engineered Plasmid for the Synthesis of Human Heteropolymer Ferritins that Mimic Native Ferritins. **(Poster Presentation) Winner of the Graduate Poster Competition (2nd Place)**

2) **Aliaksandra Reutovich**, and Fadi Bou-Abdallah The Effect of Physiological Phosphate Concentrations on Iron Mineralization and Mobilization in Ferritin. **(Oral presentation) (Best Undergraduate Oral Presentation - 1st Place Winner of the Oral Presentations)**

3) **Cass Welch**, and Fadi Bou-Abdallah. Dependence of Ferrozine and Iron Concentration on the Kinetics of Ferrozine-Fe^{2+} complexation Reaction. **(Poster presentation) (Winner of the Undergraduate Poster Competition (2nd Place)**

4) **Ruth Reichard**, and Fadi Bou-Abdallah. A Rapid and Sensitive Colorimetric Method for the Detection of Several Toxic Heavy Metal. **(Poster presentation)**

5) **Gideon Smith**, and Fadi Bou-Abdallah. Characterization of Mutant L-Chain ferritins Responsible for Neuroferritinopathy. **(Poster presentation)**

Conference: 12th NNY ACS Annual Research Symposium (April 2, 2022-In Person)

1) **Lucas J. Scalcione**, Ayush K. Srivastava, Fadi Bou-Abdallah. Thermostability of Heteropolymer Ferritin with Different H to L subunit Ratios Studied by Differential Scanning Calorimetry. NNY Local ACS Research Symposium. April 2, 2022, SUNY Potsdam.

2) Nathan J. Hunter, Ayush Kr. Srivastava, Fadi Bou-Abdallah. Ferritin Nanocage Structure for Drug Delivery and Vaccine Development. NNY Local ACS Research Symposium. April 2, 2022, SUNY Potsdam.

1. Aisha Laguda and Fathima Nazeer. "Is the proteasome involved in ELc1 mediated degradation of polyadenylation factors?" Research Symposium. American Chemical Society of Northern New York, Potsdam, NY (Poster Presentation).
2. Hunter Jones and Fathima Nazeer. "Does the protein degradation factor Elc 1 bind to mRNA processing factors?", Research Symposium. American Chemical Society of Northern New York, Potsdam. (Poster Presentation).
3. Lucas J. Scalcione, Ayush K. Srivastava, Fadi Bou-Abdalla, "Thermostability of Heteropolymer Ferritin with Different H to L subunit Ratios Studied by Differential Scanning Calorimetry", 11th NNY Local ACS Research Symposium. April 2, 2022, SUNY Potsdam. (In-person)
4. Nathan J. Hunter, Ayush Kr. Srivastava, Fadi Bou-Abdallah, "Ferritin Nanocage Structure for Drug Delivery and Vaccine Development", 11th NNY Local ACS Research Symposium. April 2, 2022, SUNY Potsdam. (In-person)

III. Receipt of Grants/Awards and Grants Applied For

Fadi Bou-Abdallah

External Grants (Awarded)

1) National Institute of Health (NIH-R15) **(PI) ($414,047.00)** (**2019-2022**). *Effect of ferritin subunit composition on iron core formation, morphology, and iron mobilization: physical characterization and physiological relevance.* **Awarded.**

2) NSF RUI (MCB Molecular Biophysics Program) Grant **(PI) ($387,030.00) (2020-2023**). *RUI: Structural and Functional Investigations of Ferritin Heteropolymers Using a Novel Expression System.* **Awarded.**

3) NSF REPS Grant Award (Molecular & Cellular Biophysics Program) **(PI) (64,016.00) (2021-2022**). *DCL-Research Experience for Post-Baccalaureate Students (REPS) in the Biological Sciences.* **Awarded.**

4) Research Corporation for Science Advancement, Cottrell Instrumentation Supplements Award (RCSA grant ID #27452) **(PI) ($18,500) (2020-2021). Awarded.**

5) The Eppley's Foundation for Research **(PI) ($22,651.00) (2019-2021)**. *Gold Nanoparticles for Lead Detection in Drinking Water.* **Awarded.**

6) The Henry Dreyfus Teacher-Scholar Award **(PI) ($60,000.00) – (2016-2021)** Grant proposal title: *Iron Oxidation and Deposition Mechanisms in WT Heteropolymer Ferritins and Ferritin Variants Causing Neuroferritinopathy.* **Awarded.**

Other Internal Research Awards

1- Professional Development Funds for Students Research Mentoring (Kilmer) ($700) - 2021
2- Professional Development Funds for Students Research Mentoring (Kilmer) ($600) - 2022
2- Gilchrist summer 2021 research stipends in support of Aliaksandra Reutovich ($1,800)
3- Gilchrist summer 2021 research stipends in support of Cassidy Welch ($850)
4- Frederick B. Kilmer Student Research grant - Spring 2022 (Lucas Scalcione - $600.37)
5- Frederick B. Kilmer Student Research grant -Summer 2022 (Lucas Scalcione - $996.18)
6- Frederick B. Kilmer Student Research grant -Summer 2022 (Kolby Hladun - $1108.76)
7- Frederick B. Kilmer Student Research grant -Summer 2022 (Maximilian Beyer - $658.79)

Submitted/Under Review

- NSF RUI Grant application (Submitted, June 2021) - **$1.1 Million dollars** - Under Review. Grant title: "NSF-BSF: The Roles of PCBP1 and NCOA4 in Determining the Fate of Intracellular Ferritin".

David Gingrich

1. Lougheed Applied Learning grant (co-lead with Fathima Nazeer), SUNY Potsdam. "Spectrophotometers for Biochemistry Lab" Awarded ($6622).
2. Training Support Program, Promega Corp, towards lab supplies for CHEM 425/426 - Awarded $605

Maria Hepel with Martin Walker

1. Lougheed Applied Learning Grant, SUNY Potsdam. "Restoring Raman Spectroscopy Equipment Use in Science Departments by replacing broken part of the equipment." to help expand and support Learning and Research at SUN Potsdam"

Fathima Nazeer

Clifford Rossiter

IV. New Programs; Courses and/or Laboratories Proposed or Revised

Fadi Bou-Abdallah

1) Created a new research webpage: https://www.bouabdallahlab.com/
2) Created Several Brightspace websites for my courses (CHEM101 - Chemistry and Human Health, CHEM451-Physical Chemistry I, and CHEM452-Physical Chemistry II)
3) Received a "SUNY DLE Brightspace Fundamentals Certificate" in 2022.
4) Developed and continued to update a new online introductory Chemistry course LAB for non-Majors (CHEM101 - Chemistry and Human Health-LAB). The course carries the new SUNY Potsdam Pathways Curriculum designation - Thinking Scientifically: Natural World. The course is OSCQR certified and was taught twice during winterim and summer 2021/2022.

David Gingrich

1. Lectures rearranged and slides redone to match new textbook for General Chemistry 1 and 2 lectures.

Maria Hepel

1. **Nanobiotechnology CHEM 495** (**new course**)
   - Prepared 25 new PowerPoint lectures based on recent publications (2020-2021) published in the International Journal of Nanobiotechnology, Biosensors & Bioelectronics and ACS Nanoletters

2. Developed a new syllabus and applied for the approval of a new course to be offered "**Nanomedicine**" as an elective for the new major Biomedical Science"

Fathima Nazeer

Clifford Rossiter

Martin Walker

V. Service

VA. Administrative/Committee Assignments

Fadi Bou-Abdallah

1. Member of the SUNY Potsdam Arts and Sciences Council (2020-2023)
2. Member of the Research and Creative Endeavors Committee (2019-2022)
3. Campus Representative of "The Barry Goldwater Scholarship and Excellence in Education Foundation" (2019-present).
4. Chair of the Goldwater Scholarship Committee (2019-present).
5. Member of the Employee Awards Committee (2020-2023)

David Gingrich

1. College Radiation Safety Officer
2. College Radiation Safety Committee
3. Chemistry Safety Committee (Chair)
4. Health Professions Advisory Committee (HPAC)

Maria Hepel

1. Member of the Distinguished Academy Board" SUNY, Albany
2. Participated in the Honors Convocation, School of Arts & Science, May 11, 2022
3. Invited by ACS Society & Media Manger to become member of the ACS Experts Program

Fathima Nazeer

1. Member, Health Professions Advisory Committee (HPAC)

Clifford Rossiter

1. Elected member of faculty senate business affairs committee.
2. Alternate delegate to faculty senate.

Martin Walker

1. Department Chair (and re-elected for another three-year term)
2. Potsdam Pathways Curriculum Committee member and TS-Natural World Liaison/Reviewer
3. Departmental Safety Committee
4. Health Professions Advisory Committee
5. Worked on STEM outreach materials
6. Conducted external review (with Prof. Cheri Boyd) of the Mathematics Department
7. Served on review committee for Linghong Li (promotion) and Ananta Adhikari (reappointment), both in Physics.

VB. College-Related Public Service

Fadi Bou-Abdallah

1. Taught two online courses(CHEM101 Lecture) during Winterim 2022 (enrollment 12 students) and Summer 2022 (enrollment 13 students).
2. Performed research with 3 students (Aliaksandra Reutovich, Gideon Smith, Lucas Scalcione), over Winterim break 2021/2022 and summer 2022. In addition, I have been the mentor and research advisor of one postbac student (Nathan Hunter, since August 2021) and one postdoc (Ayush Srivastava, since October of 2020).
3. Potsdam Spotlight: Chemistry & Biochemistry. Friday, April 29, 2022 – Met with Isabel George, a prospective student interested in a Biochemistry major at SUNY Potsdam.
4. Served as a Judge for the 2021 and 2022 Learning and Research Fair, May 10-13, 2022

David Gingrich

1. Faculty advisor for the SUNY Potsdam American Society for Biochemistry and Molecular Biology ASBMB Student Chapter, (SGA Biochemistry Club)
2. Faculty advisor for SGA Pre-Health Club.
3. Academic Coordinator for Men's Hockey.
4. Participated in STEM Open House.

Maria Hepel

1. Served as a reviewer of two proposals submitted to Department of Energy (DOE), USA
2. Served as a Marshal for the 2022 Commencement, SUNY Potsdam

Fathima Nazeer

1. Participated in STEM openhouse

Clifford Rossiter

1. Participated in STEM openhouse

Martin Walker

1. Organizer for several "Spotlight" and Open House events to promote Chemistry and Pre-Health programs.
2. Faculty Advisor for Intervarsity Christian Fellowship.
3. Faculty Advisor for Gamma Sigma Epsilon, Chemistry Honor Society.

VC. Professional Service

Fadi Bou-Abdallah

1. Associate Editor of the Elsevier journal "Biochemistry and Biophysics Reports/Elsevier" (2020-Present)
2. Editorial Board of Biochimica Biophysica Acta (BBA) (2011-Present)
3. Member of the following professional organizations:
a) Council on Undergraduate Research (CUR)
b) American Chemical Society (ACS)
c) Protein Society
d) Royal Society of Chemistry

4. Served on an NSF Panel (Oct 2021): Improving Undergraduate STEM Education: Hispanic-Serving Institutions (HSI Program) NSF 20-599 (Track 2: Implementation and Evaluative Project-IEP)
5. Served on an NSF Panel (Feb 2022): Postdoctoral Research Fellowships in Biology Area 1: Broadening Participation
6. Member of the Search committee to Hire a HS principal for Potsdam Central School-2021.
7. Chair of two Oral Sessions at the NCUR 2021 National Conference on Undergraduate Research
8. Reviewed several papers submitted to Inorganic Chemistry, International Journal of Biological Macromolecules IJBIOMAC, Biochimica Biophysica Acta, and Metallomics (2021-2022).
9. Proposal reviewer to the Israeli Science Foundation-2022
10. Prepared annual research and progress reports to NSF and NIH for my research grants (Fall 21 and Spring 22).

David Gingrich

1. Judge for Undergraduate Poster Session for the American Society for Biochemistry and Molecular Biology (ASBMB) 2022 Annual Meeting in conjunction with Experimental Biology, Philadelphia Pa, April 2-4, 2022.

Maria Hepel

1. Accepted invitation to serve as a reviewer of papers submitted to the following journals: Analytical Chemistry, Analytical & Bioanalytical Chemistry, Academic Letters, Biosensors & Bioelectronics, Electrochimica Acta, Frontiers in Chemistry, Microchemical Journal, Nanomaterials, Molecules
2. Invited to serve as Review Editor in "Frontiers in Analytical Chemistry-Forensic Chemistry".
3. Member of the Editorial Boards for the following journals:
   - "Polish Journal of Environmental Studies"
   - "Open Electrochemistry Journal"
   - "Journal of Molecular Imaging & Dynamics"
   - "Journal of Nanomedicine & Nanotechnology"

- "Mediterranean Journal of Chemistry"
- "International Journal of Nano Studies and Technology"
- "Frontiers in Physical Chemistry and Chemical Physics"
- "Journal of Nanotechnology: Nanomedicine & Nanobiotechnology"
- "Austin Journal of Biosensors & Bioelectronics"
- "Analytical & Bioanalytical Techniques"
- "Journal of Molecular Science"

4. Invited to serve as an Organizing Committee Member for several international conferences in 2021-2022.

5. New research collaboration with Dr. Marta Fiolka from University of Marie Curie-Sklodowska, Lublin , Poland to test a new class of anticancer drugs.
6. Continue research collaborations with SUNY Albany; SUNY Binghamton; Technical University, Bratislava, Slovakia; Masaryk University, Brno, Czech Republic; and Polish Academy of Science, Olsztyn , Poland.

Fathima Nazeer

1. Judge, poster session, IRACDA conference

Martin Walker

1. Alternate Councilor, Webmaster and Regional Delegate for the Northern New York section of the American Chemical Society

2. Member of the outreach task force of the Polymer Division, also assisted the chemical data standards task force, for the International Union of Pure & Applied Chemistry (IUPAC). Worked with the IUPAC leadership to facilitate dissemination of IUPAC content into Wikipedia through CC licensed images.

3. Editorial boards for two journals:
   - Journal of Cheminformatics (impact factor 5.326)
   - ARKIVOC or "Archive of Organic Chemistry" (impact factor 1.003)

4. Reviewed one paper for the *Journal of Chemical Education*.

VD. Community Service

Fadi Bou-Abdallah

1. Served on 3 thesis defense committees:

Lara Varden: Clarkson Univ. April 15, 2022; Tyler Wilkinson: Clarkson Univ. April 27, 2022; and Matthew Mehlenbackler: Dartmouth College May 24, 2022.

2. Advised and mentored a Clarkson PhD student and edited his thesis-Spring 2022.

David Gingrich

1. Sound/Media Technician, Potsdam Church of the Nazarene.

Maria Hepel

1. Serving as an advisor for students who are members of the Newman Club.

Clifford S. Rossiter

1. Member of the American Chemical Society.

Martin Walker

1. Deacon, worship team bassist, and organizer of a "Coffee House" social evening, at New Hope Community Church, Potsdam, NY. Gave a sermon on August 1, 2021.

VE. Other Service not mentioned above.

Fadi Bou-Abdallah

1. Attended several workshops/symposia/seminars by professional organizations such as the American Chemical Society, ACS, the Biophysical Society, BPS, The Protein Society, Dreyfus Foundation, and Research Corporation for the Advancement of Sciences), and by national funding agencies like NSF and NIH.
2. Faculty academic research advisor to five undergraduate students: Aliaksandra Reutovich, Gideon Smith, Colby Hladum, Lucas Scalcione, and Maximilian Beyer. These students have also conducted undergraduate summer research under my guidance and have been paid summer salaries from my research grants.
3. Research advisor for one postdoc (Ayush Srivastava) and one postbaccalaureate student (Nathan Hunter) – September 2021 to August 2022.
4. Continued research collaboration with 5 research groups (4 groups in the USA and 1 group in Italy).
5. Established four new research collaboration with (1) Prof. Joseph Mancias (MD/Ph.D., Harvard Medical School), (2) Prof. Joey Davis (Ph.D., Massachusetts Institute of Technology), (3) Prof. Daisuke Kihara (Ph.D., Purdue University), and (4) University of Alabama at Birmingham, Department of Medicine.

David Gingrich

1. Supervised one undergraduate Research Project CHEM 497.
2. Supervised two students in Chemistry Topics and Chemistry Seminar
3. Chair of search for Chemistry Stockroom position.

Maria Hepel

4. Supervised undergraduate Research Projects CHEM 497 of four students:
   Veronica Borracci, "Functionalization and Preparation of Iron Oxide Nanoparticles"

Casey Mahoney "Binding of Anticancer Drugs Through Hydrazone Bond to Nanoparticles",
Lawrence Tucker "Assembly of Gold Nanoparticles Induced by Lead Ions"and
Daniel Russotti " Assembly of Gold Nanoparticles Induced by Cadmium Ions and GSH"

5. Supervised projects (written papers and oral presentations) of two students for CHEM 406 Chemistry Topics and CHEM 407 Chemistry Seminar:
   Yadriel Bracero "Detection of SARS Covid 19 using SERS Aptasensors" and
   Coralys Valenzuela Caraballo " Detection of Mycotoxins in Food using SERS and Fluorescences Spectroscopy Methods"

VI. Chemistry Seminar Program

The Chemistry Department Seminar program consists, in part, of invited speakers and student seminars. The visitors from graduate schools are a crucial part of our seminar program and very beneficial to our students. Time is provided for our students to meet with each visitor and to discuss graduate school opportunities. The list of visitors and their seminar topics are listed below along with our student seminars.

SEMINAR SPEAKERS FOR FALL 2021

Assistant Professor Andrea Lee, Department of Microbilogy & Molecular Genetics, Larner School of Medicine, University of Vermont.
"Molecular Mechanisms of Lesion Detection by Base Excision Repair Enzymes"

Ty Santiago, Ph.D. Candidate. Department of Chemistry, University at Buffalo.
"Synergistic combination of Sum Frequency Generation Spectroscopic Techniques for the Surface Selective Investigation of Soft Material Interfaces."

Professor Brindusa Alina Petre, Department of Chemistry & Biochemistry, University of Iasi, Romania.
"Fluorimetric & Mass spectrometric assays for Lysosomal storage disorders diagnostic in newborns."

Assistant Professor Ting Wang, Department of Chemistry, University of Albany.
"New Synthetic Opportunities through Organic Photcatalsys"

Professor Julien Panetier, Department of Chemistry, SUNY Binghamton.
"Understanding the Electronic Structure and Reactivity of Carbon Monoxide Dehydrogenase Model Systems for CO2 Reduction"

Dr. Joby Varghese, Institute for a Sustainable Environment, Center for Air and Aquatic Resources Engineering and Sciences, Clarkson University.
"The Versatility of Metal-Organic Frameworks and the Remediation of Per- and

Polyfluoroalkyl Substance-Contaminated Soils"

Associate Professor Kathleen Dunn, College of Nanoscale Science and Engineering, SUNY Poly.
"From the Bronze Age to your Smartphone: The Curious Case of Copper"

SEMINAR SPEAKERS FOR SPRING 2022

Assistant Professor Guy Leem, SUNY College of Environmental Science and Forestry
"Visible Light-Driven Chemical Transformation in Lignin at Room Temperature"

Assistant Professor C.Rose Kennedy, University of Rochester.
"Controlling Reactivity through Mechanism- Informed Catalyst Design"

Associate Professor Wenyi Feng, Department of Biochemistry and Molecular Biology, SUNY Upstate Medical University.
"Replication stress-induced chromosome fragility"

STUDENT SEMINARS FOR SPRING 2022

VII. 2022 Chemistry Major Graduates – graduates

B/S: Gideon Smith

B/A:

Biochemistry Major Graduates – graduate

Yadriel Bracero
Alis Hart
Danielle McPherson
Raymond Monette
Aliaksandra Reutovich

2022 Chemistry Minor Graduates – graduates

Courtney Riley