Curriculum Vitae

GREG M. SWAIN

PERSONAL

Department of Chemistry
Neuroscience Program Member
Chemistry Building
587 S. Shaw Lane
Michigan State University
East Lansing, MI 48824

Tel: (517) 353-1090
Fax: (517) 353-1793
Cell: (517) 449-2376
Email: swain@chemistry.msu.edu

EDUCATION

JSPS/National Science Foundation Postdoctoral Fellow, Tohoku University (Sendai, Japan)
Specialty: Electrochemistry and Surface Science
Advisor: Kingo Itaya (1992-93)

Postdoctoral Fellow, Department of Chemical Engineering and the Space Power Institute
Auburn University, Auburn, Alabama
Specialty: Electrochemistry and Energy Storage Devices
Advisor: Bruce Tatarchuk (1991-92)

Ph.D., University of Kansas, Lawrence, Kansas – Analytical Chemistry
Advisor: Theodore Kuwana (1991)

B.A., University of Texas, Dallas, Texas – Chemistry
Advisor: Wayne E. Britton (1985)

Spring Hill College (1980-1983)

PROFESSIONAL POSITIONS

Director of the Responsible Conduct of Research Education Program, ORI, MSU (Aug. 2023-present)

RECR Education Coordinator, The Graduate School, MSU (2019-present)

Graduate Program Director, Neuroscience Program, MSU (2017–2021)

Adjunct Professor, Department of Chemical Engineering and Materials Science, MSU (2010 – 2018)

Faculty Member, Neuroscience Program, MSU (2008 – present)

Faculty Member, Fraunhofer Center for Coatings and Diamond Technology, MSU (2005-2020)

Professor, Department of Chemistry, Michigan State University (2003-present)

Associate Professor, Department of Chemistry, Michigan State University (2000-2003)

Associate Professor, Department of Chemistry and Biochemistry, Utah State University, Logan, Utah (1998-2000)

Associate Department Head, Department of Chemistry and Biochemistry, Utah State University (1998-2000)

Assistant Professor, Department of Chemistry and Biochemistry, Utah State University (1994-1998)

Reservoir Chemist, Atlantic Richfield Oil and Gas Co. (Plano, Texas) (1985-1987)
Research Chemist, Polytronix, Inc. (Richardson, Texas) (1983-1985)

RESEARCH INTERESTS

Professor Swain and his group are recognized leaders in the study of electrochemical reaction kinetics and mechanisms at conductive diamond and diamond-like carbon thin-film electrodes, and application of these unique electrodes in electroanalysis, spectroelectrochemistry, neuroanalytical chemistry and biomedical diagnostic devices. Professor Swain's research is interdisciplinary and spans the fields of analytical chemistry, physical and analytical electrochemistry, carbon material science, electrosynthesis, neuroanalytical chemistry, and corrosion science and coatings technology.

The Swain group pioneered the use of boron-doped diamond and optically transparent diamond thin-film electrodes in electroanalysis and spectroelectrochemistry. Their work introduced these materials to the electrochemical community and spawned a new field of electrochemical research. These studies demonstrated that these new electrode materials possess unprecedented sensitivity, reproducibility and stability in electrochemical measurements, especially in complex environments. The group also pioneered the application of boron-doped microcrystalline and ultrananocrystalline diamond thin-film electrodes, and other carbon materials, in electrochemical detection schemes coupled with flow injection analysis, high-performance liquid chromatography and capillary zone electrophoresis. These studies demonstrated that conducting diamond is superior to other carbon electrodes for the detection of important biological and environmental analytes. Finally, the group pioneered the use of diamond microelectrodes with *in vitro* electrochemical methods to investigate neuroeffector signaling processes in the vasculature (norepinephrine) and in the gastrointestinal tract (serotonin (5-HT) and nitric oxide). Together with their collaborators (Pharm/Tox MSU), the group has used these tools to identify differences in neuroeffector transmission to arteries and veins, and how these signaling processes are altered in salt-sensitive and obesity-linked hypertension. Their work has also shown that serotonin and nitric oxide signaling in the enteric nervous system, and the associated motor reflexes, can change with age, gut microbiota, and obesity in animal models.

Boron-doped diamond and tetrahedral amorphous carbon thin-film electrodes are being used as anodes and cathodes to electrochemically synthesize value-added products from environmental pollutants (nitrate reduction and carbon dioxide reduction) and sustainable materials (glycerol oxidation and water oxidation to produce pure hydrogen peroxide). Electrochemical methods are being used to study electrochemical reaction kinetics in terms of microstructure and solution composition effects. Product analysis is being performed by spectrophotometric assays, GC and HPLC methods.

The group is investigating the electrochemical properties and physical structure of boron-doped diamond and metal/diamond composite powders prepared by overcoating substrate powders with a thin layer of boron-doped ultrananocrystalline diamond. The specific surface area of these materials can range from 50-250 m^2/g and could find application in electrochemical sensors, fuel cells and stationary phase media for separations.

The group is developing surface treatments of carbon fiber reinforced composite materials (exposed edges) using aryl diazonium adlayer formation achieved using electrochemically assisted

and spontaneously formed processes. The adlayers form a stable surface layer that inhibits electrochemical reactions. In modern aircraft, carbon fiber composites are being used more and more together with metal alloys, like aluminum. The region of the aluminum alloy where these two dissimilar materials are joined can be highly susceptible to galvanic corrosion. This is oxidation or corrosion of the nearby aluminum alloy driven by electrochemical reactions on the exposed edges of the carbon composite. The goal of the research is to develop diazonium surface modifications for surface treatment of the exposed carbon fiber surfaces in the composite. These treatments form stable surface layers that inhibit electrochemical reactions, specifically oxygen reduction, thereby reducing the rate of nearby aluminum alloy corrosion.

In recent years, the group has become active investigating how the surface texture, microstructure, and surface chemistry of aluminum and titanium alloys prepared by selective laser melt (SLM) additive manufacturing affect the mechanical (hardness and tensile strength) and electrochemical properties (i.e., corrosion susceptibility) of the alloys. These are alloys commonly used in aerospace applications. This work is collaborative with faculty in the College of Engineering.

Finally, the group has become a leader in the study of environmentally sustainable, non-chromate surface coatings for aluminum alloys and anodized alloys, and the corrosion resistance they provide. These coatings are potential replacements for legacy chromate-based coatings presently used in the aerospace industry. These surface treatments are part of a multilayer coating system that protects these alloys from corrosion in service. The group is also focused on understanding how laser cleaning and hyperpassivation affect the electrochemical properties of aerospace aluminum alloys, and on understanding the electrochemical properties of aluminum and titanium alloys prepared by selective laser melting advanced manufacturing (3D printed materials).

The Swain research group regularly provides graduate-level research experience to high school students (High School Honors Science Program, MSU and ACS SEED Program) and undergraduate students (Professorial Assistants, MSU SROP and REU Program). He and his group are committed to the education and training of the next-generation workforce and broadening representation in STEM.

COMMITMENT TO GRADUATE EDUCATION

Professor Swain has devoted his 32-year academic career to graduate student education, mentoring and research training. He has established international partnerships and training programs for undergraduate and graduate students from Brazil, Chile, Czech Rep., Ecuador and Poland. He has served as primary advisor/mentor for 40 M.S. and Ph.D. students and 15 postdoctoral researchers. He presently serves as primary advisor for 7 Ph.D. graduate student trainees. He also presently serves on the graduate advisory committees of 28 additional Ph.D. students in Chemistry, Chemical Engineering, Material Science, Electrical and Computer Engineering, and Neuroscience at MSU. Finally, he serves as a regular mentor and training faculty on multiple REUs and training grants across the MSU campus. These include (i) T32 (NIH/PHS), *Interdisciplinary Training Program in Neuroscience*, 2008-2016 (renewal application in progress), (ii) R25 (NIH/GMS), *MSU PREP: Increasing Underrepresented Minority Representation in Biomedical Sciences*, 2016-2021, PI = William Atchison (Pharm/Tox), (iii) R25 (NIH-HLBI), *Biomedical Research for University Students in the Health Sciences*, 2018-2022, PIs = Susan Ewart and Vilma Yuzbasiyan-Gurkan (College of Veterinary Medicine), (iv) *MSU Summer Research Opportunity Program*

(SROP) (2010-present) and (v) (NSF) *REU Site: Cross-disciplinary Training in Sustainable Chemistry and Chemical Processes*, 2014-2025, PI = Greg Swain (Department of Chemistry).

ACADEMIC GOVERNANCE AND RECENT DEPARTMENT AND UNIVERSITY SERVICE (2016-present)

- Department of Chemistry Awards Committee (2021-present, Chair 2023-2025)
- Department of Chemistry, Faculty Advisory Committee (2024-2025)
- Department of Chemistry Reappointment and Promotion Committee (2020-2023), Chair 2020
- CNS Center for Advanced Microscopy Search Committee (2023-2024)
- MSU Steering Committee, At-Large Member (2016-2019)
- MSU Faculty Senate, *ex officio*, At-Large Member (2016-2019)
- MSU University Council, *ex officio*, At-Large Member (2016-2019)
- MSU Chemical Hygiene Committee (2018–present)
- Search Committee, Faculty Athletic Representative, MSU (2017-2018)
- Search Committee, Dept. Chem. Engr. and Mater. Science, MSU (Polymer Science) (2017-2018)
- Graduate Affairs Committee, Neuroscience Program, MSU (2017-2021)
- Faculty Advisory Committee, *Vice-Chair*, Department of Chemistry, MSU (2018-2019)
- Safety Committee, Department of Chemistry, MSU (2018-2020)
- Secured donation of a PHI-5600 Surface Analysis System from Dow Chemical Co. (2018)
- Reviewer University Fellowship Committee (2017-2019)

AWARDS

- Visiting Guest Professorship, Gdansk University of Technology, Poland (2025)
- Visiting Guest Professorship, Keio University, Japan (2023)
- Academic Advancement Network Leadership Fellow, MSU (2018-2019)
- CNS Outstanding Faculty Award, MSU (2018-2019)
- Fulbright Scholar Award – Ecuador (2018-2020) (awarded but unable to accept)
- Fulbright Specialist Award – Czech Rep. (2018)
- 2015 *Corrosion* Best Paper Award (Award presented at NACE CORROSION 2015)
- CAPES Visiting Scholar, Federal University of São Carlos, Brazil (2013-2016)
- Summer Research Fellow, Université Joseph Fourier, Grenoble, France (2001)
- Society for Electroanalytical Chemistry, Young Investigator Award (1998)

PROFESSIONAL SOCIETIES AND SERVICE

- American Chemical Society (1989-present)
- Electrochemical Society (1992-2024)
- Society for Electroanalytical Chemistry (1994-2022)
- Materials Research Society (2009-2018)
- International Society of Electrochemistry (2012-2020)
- National Association of Corrosion Engineers (NACE) (2015-present)
- Editor-in-Chief, *Electroanalysis* (Wiley) (2021-present)
- Editor, *Electroanalysis* (Wiley) (2018-2020)
- Editorial Board: *Electroanalysis* (2017-2018)
- Editorial Board: *Advanced Engineering Materials* (2014-2021)

- Editorial Advisory Board: *Critical Reviews in Analytical Chemistry* (Taylor & Francis) (2014-present)
- REU Program Director, Department of Chemistry, Michigan State University (2014-2025)
- Member – Committee on Professional Training (American Chemical Society) (2015-2019)
- Associate Editor, *Diamond and Related Materials* (Elsevier) (2004-2008)
- Editor, *Diamond and Related Materials* (2009-2011)
- Editor-in-Chief, *Diamond and Related Materials* (2011-2014)

LEADERSHIP AND ADMINISTRATIVE EXPERIENCE

Director of Responsible and Ethical Conduct of Research (RECR) Education Director, Office of Research and Innovation, MSU (2023-present). The current responsibilities of this position are: (i) contributing to the functioning of the Research Integrity Office, (ii) organizing and administering RECR education programs for all stakeholders (Faculty, Research Associates/Postdoctoral Researchers, and Research Assistants/Technicians) across campus (Graduate Students are covered by the program through TGS), (iii) working with the ORI Communications group (Melanie Kauffman and John Furcean), ORRS Training Compliance Team, the Research Security Team (Krista Campeau), and OSP to implement best practices for effective communication, documentation, and tracking, (iv) developing and delivering selected discussion-based workshops, and (v) serving a resource for the campus about matters pertaining to research integrity and RECR education.

RECR Education Coordinator, The Graduate School, MSU (2019-present). In this position, Professor Swain coordinates The Graduate School's education program for graduate and graduate-professional students on ethical conduct of research and scholarship. His primary responsibilities are organizing and conducting the Graduate School's workshop series related to RECR; offering RECR-related workshops to summer SROP, REU and related constituents; working with and across colleges on needs-assessment regarding their responsibilities in meeting university requirements related to RECR including proper tracking and reporting requirements; and collaborating with graduate school staff in working with and across colleges to implement RECR requirements in conjunction with other goals from the strategic plan. A special focus is being placed on ethics training, broadening the topical coverage, making the program more relevant for non-STEM students, mentoring and promoting greater appreciation of the importance of ethical conduct.

Graduate Program Director, Neuroscience Program, MSU (2017-2022). As Graduate Program Director (GPD), Professor Swain was responsible for overseeing all aspects of the Neuroscience graduate program – currently 34 Ph.D. students. These responsibilities include teaching, curriculum development and innovation, managing and overseeing the standardized component of the comprehensive exam, engaging in recruiting and professional development activities for graduate students, and communicating admissions recommendations to the Program Director. He also provided mentoring, support for fellowship applications, career advice and annual written performance reviews for graduate students. Prior to becoming GPD, he chaired the committee and prepared the final report for an internal program review (2014-15) and played a key role in the external review conducted the year following.

Member of the American Chemical Society Committee on Professional Training (2015-2019). The Committee on Professional Training (CPT) promotes excellence in post-secondary education and provides leadership to the ACS in the professional training of chemists. The goals of the committee are to conduct and enhance an approval procedure for certified bachelor's degree programs in chemistry, promote effective practices and innovations in chemistry education and promote broad participation in chemistry to enrich the profession with the talents of a diverse group of individuals. Professor Swain's primary responsibilities were for overall program review, specifically the analytical chemistry course and laboratory curriculum, and assessment of the quality of the professional skills development and the independent research experience. He stepped down from service on this committee in 2019.

REU Program Director, Department of Chemistry, MSU (2014-2025). Professor Swain spearheaded the effort to attain the NSF-funded site, *Cross-Disciplinary Training in Sustainable Chemistry and Chemical Processes*. He directs this program (ended in 2025) that is focused on providing graduate-level research experience to a diverse cohort of undergraduate students from the region, the nation, and the territory of Puerto Rico. In addition to research training, he leads efforts to improve the professional skills of the student participants and to educate them on responsible conduct of research, proper mentoring practices, and the value of diversity. To date, the program has provided graduate-level research experiences to over 110 participants (9 were virtual in the summer of 2020) with just under 50% of these being non-white students from underrepresented groups.

Editor and Editor-in-Chief of *Diamond and Related Materials* (Elsevier) (2009-2014). Professor Swain took over management and leadership of the journal making some sweeping changes that produced significant improvements in the Impact Factor in a short period of time. These changes included hiring four new editors regionally from around the world who had the expertise needed for the types of research the journal was seeking to publish, reducing times from submission for first review and submission to print, improving the quality of the peer reviews, starting regular topical reviews, and improving lines of communication between the authors and the journal.

Editor and Editor-in-Chief of *Electroanalysis* (Wiley) (2019-present). Professor Swain assumed the role of EIC in 2021. He is working with four editors to implement a strategic plan to broaden the scope of the journal and to enhance its stature in the field of electrochemistry.

Associate Head, Department of Chemistry and Biochemistry, Utah State University (1998-2000). Professor Swain assisted the Department Head in the leadership and management of the department. His primary responsibilities were personnel, international student recruitment and fundraising activities. During his time in this leadership role, (i) he continued international recruiting efforts and faculty exchanges between the Silesian Technical University (Gliwice, Poland) and Charles University (Prague, Czech Rep), (ii) began the first fundraising activities in the department including the creation of a graduate database, a fall "letter from the Department Head" and an annual summer newsletter, (iii) partnering with Shimadzu Scientific Instruments USA to create the Shimadzu-USU Analytical Sciences Laboratory and (iv) instituted practices to improve the quality of student mentoring.

PUBLICATIONS

(H-Index = 67 (Google Scholar), Published Items = 269, Total Citations = 15,843)

ORCID: http://orcid.org/0000-0001-6498-8351
Google Scholar: http://scholar.google.com/citations?user=WI4v_OoAAAAJ&hl=en

205. *Electrochemical Determination of Ibuprofen by Batch-injection Analysis Using a Boron-Doped Ultrananocrystalline Diamond Electrode*. MC Prete, LR da Rocha, MG Segatelli, RA Medeiros, GM Swain, and CR Teixeira Tarley, ELECTROANALYSIS 37 (2025) e202400121.

204. *Detection of Diclofenac and Carbamazepine using Voltammetry and Flow Injection Analysis at Boron-Doped Diamond Thin-Film Electrodes*. AI Jacobs, S Zwane, R Jarošová, MD Zamora, AT Kuvarega, and G Swain, ELECTROANALYSIS 36 (2024) e202400157.

203. *Measurement of Human and Bovine Exhaled Breath Condensate pH Using Polyaniline-Modified Flexible Inkjet-Printed Nanocarbon Electrodes*. AI Jacobs, MC Prete, A Lesch, AA Sebio, CR Teixeira Tarley, and GM Swain, ACS OMEGA 9 (2024) 40841-40856.

202. *Material Characterization and Electrochemical Properties of Titanium Alloy 5553 Prepared by Selective Laser Melting as Processed and After Abrading and Polishing*. IN Dammulla, R Weston, ZU Mahmud, S Saha, S McFall-Boegeman, L Rice, J H Dwyer, T Kmetz, CJ Boehlert, and GM Swain. ACS OMEGA 9 (2024) 34021-34035.

201. *The Effect of Sulfuric Acid Anodization on the Electrochemical Properties of Aluminum Alloy $AlSi_{10}Mg$ Prepared by Selective Laser Melting*, Walton J; Dwyer JH; Rice L; Rueger Z; Swain GM. JOURNAL: OF THE ELECTROCHEMICAL SOCIETY 171 (2024) 051503.

200. G M Swain (2024), "Independent Research Experiences in Sustainable Chemistry", Open Access Government April 2024, pp.410-411. doi.org/10.56367/OAG-042-11051.

199. G M Swain (2023), "Responsible and Ethical Conduct of Research: Principles to Uphold", Open Access Government January 2024, pp.388-389. doi.org/10.56367/OAG-041-11051.

198. G M Swain (2023), "The Research Experiences for Undergraduates (REU) Program", Open Access Government October 2023, pp.378-379. doi.org/10.56367/OAG-040-11015.

197. *Voltammetric and Capacitance Behavior of Optically Transparent Diamond Electrodes in Room-Temperature Ionic Liquids*, Parvis F; Blanchard GJ; Swain GM. JOURNAL OF PHYSICAL CHEMISTRY C 127 (2023) 23442-23458.

196. *Inhibiting Metal Galvanic and Carbon Corrosion in Aluminum Alloy-Carbon Fiber Reinforced Composite Joints by Spontaneous Deposition of Diazonium Adlayers on Exposed Carbon Fibers*, Dammulla IN; Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 170 (2023) 091503.

195. *Importance of Effective Mentoring for Research Integrity*, Swain GM. ELECTROANALYSIS 35 (2023) e202300325.

194. *In Vitro Electrochemical Monitoring of Cholinergic Signaling in the Mouse Colon Using an Enzyme-Based Biosensor*, Henderson S; Strait M; Fernandes R; Xu H; Galligan JJ, Swain GM., , ACS CHEMICAL NEEUROSCIENCE 14 (2023) 3460-3471.

193. *A Cross-Disciplinary Sustainable Chemistry Summer Program*, Swain GM, Scientia, Feb 1, 2023, | Education & Training, Physical Science. doi.org/10.33548/SCIENTIA873.

192. *Performance of New Nanocomposites Based on Graphene-Grafted-Poly (itaconic acid-co-TRIM) via Photoiniferter, Thermal Vinyl Functionalization, and Physical Mixture as Electrochemical Sensing Platforms for Illicit Drug Determination*, Prete MC; Swain GM; Cruz ACG; Segatelli MG; Tarley CR. ELECTROCHIMICA ACTA (2023), 142797.

191. *Electrochemical Surface Rehydrogenation of Boron-doped Diamond Electrodes after Electrochemical Polishing*, Brocenschi RF; Irikura K; Wachter N; Swain GM; Rocha-Filho RC. DIAMOND AND RELATED MATERIALS 136 (2023) 110008.

190. *In Vitro Monitoring of Nitric Oxide Release in the Mouse Colon Using a Boron-Doped Diamond Microelectrode Modified with Platinum Nanoparticles and Nafion*. Henderson S; Bhardwaj K; Perugachi V; Espinoza-Montero P; Galligan JJ; Swain GM. ANALYTICAL CHEMISTRY 95 (2022) 1027-1037.

189. *The Electrochemical Behavior of Aluminum Alloy A360 Prepared by Selective Laser Melting Fabrication with and Without a Trivalent Chromium Process Conversion Coating*. Walton J,; Rice L; McFall-Boegeman S; Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 169 (2022) 121501.

188. *5xFAD Mice Do Not Have Myenteric Amyloidosis, Dysregulation of Neuromuscular Transmission or Gastrointestinal Dysmotility*. Yelleswarapu K; Masino M; Henderson S; Fernandes R; Swain GM; Galligan JJ; Xu H. NEUROGASTROENTEROLOGY AND MOTILITY 34 (2022) e14439.

187. *Enhanced Susceptibility of SARS-CoV-2 Spike RBD Protein Assay Targeted by Cellular Receptors ACE2 and CD147: Multivariate Data Analysis of Multisine Impedimetric Response*. Brodowski M; Pierpaoli M; Janik M; Kowalski M; Ficek M; Slepski P; Trzaskowski B; Swain GM; Ryl J; Bogdanowicz R. SENSORS AND ACTUATORS B: CHEMICAL 370 (2022) 132427.

186. *Inhibiting the Oxygen Reduction Reaction Kinetics on Carbon Fiber Epoxy Composites Through Diazonium Surface Modification-Impacts on the Galvanic Corrosion of Coupled Aluminum Alloys*. Dammulla IN; Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 169 (2022) 071501.

185. *In Vitro Electrochemical Measurement of Serotonin Release in the Human Jejunum Mucosa using a Diamond Microelectrode*. France M; Galligan JJ; Swain GM. ANALYST 147 (2022) 2523-2532.

184. *Detection of Pyocyanin with a Boron-Doped Diamond Electrode Using Flow Injection Analysis with Amperometric Detection and Square Wave Voltammetry*. Jarošová R; Irikura K; Rocha-Filho RC; Swain GM. ELECTROANALYSIS 34 (2022) 1902-1912.

183. *Electroanalysis, A Log to Hold on to in Difficult Times*. Campuzano S; Pingarrón JM; Swain GM, ELECTROANALYSIS (2021), 10.1002/elan.2021.00607.

182. *In Memoriam: Luis A. Avaca* (1940-2021). Rocha-Filho, RC; Swain, GM, ELECTROANALYSIS 33 (2021) 1679-1680.

181. *Exhaled Breath Biomarker Sensing*. Vasilescu A; Hrinczenko B; Swain GM; Peteu SF, BIOSENSORS AND BIOELECTRONICS 182 (2021) 113193.

180. *Effect of Laser Cleaning and Hyperpassivation on the Electrochemical Behavior of Aluminum Alloys*, McFall-Boegeman S; Yancey D. O'Neill T; Davidson N; Swain GM, JOURNAL OF THE ELECTROCHEMICAL SOCIETY 168 (2021) 031501.

179. *Charge-Induced Birefringence in a Room Temperature Ionic Liquid*, Wang Y; Swain GM; Blanchard GJ, JOURNAL OF PHYSICAL CHEMISTRY B 125 (2021) 950-955.

178. *Local and Long-Range Organization in Room Temperature Ionic Liquids*, Wang Y; Parvis F; Hossain MdI; Ma K; Jarošová R; Swain GM; Blanchard GJ, LANGMUIR 37 (2021) 605-615.

177. *The Electrochemical Determination of Isatin at Nanocrystalline Boron-doped Diamond Electrodes: Stress Monitoring of Animals*. Sobaszek M; Siuzdak K; Ryl J; Bogdanowicz R; Swain GM. SENSORS AND ACTUATORS, B: CHEMICAL 306 (2020) 127592.

176. *An Electrochemical ATP Biosensor with Enzymes Entrapped within a PEDOT Film*. Peteu SF; Russell SA; Galligan JJ; Swain GM. ELECTROANALYSIS 33 (2021) 495-505.

175. *Investigation of Trivalent Chromium Process Conversion Coatings as a Sealant for Type II Anodized AA2024-T3*. Shruthi TK; Walton J; McFall-Boegeman S; Swain GM. JOURNALOF THE ELECTROCHEMICAL SOCIETY 167 (2020) 111504.

174. *Temperature Dependence of the Heterogeneous Electron-Transfer Rate Constant and Diffusion Coefficient for Ferrocene Carboxylic Acid in Room Temperature Ionic Liquids at Various Carbon Electrodes.* Jarosova R; Bhardwaj K; Swain GM. JOURNAL OF ELECTROANALYTICAL CHEMISTRY 167 (2020) 114744.

173. *The Effect of Surface Oxygen on the Wettability and Electrochemical Properties of Boron-Doped Nanocrystalline Diamond Electrodes in Room Temperature Ionic Liquids*. Bhardwaj K.; Parvis, F; Feng Y; Blanchard GJ; Swain GM. LANGMUIR 36 (2020) 5717-5729.

172. *Characterizing the Magnitude and Structure-Dependence of Free Charge Density Gradients in Room-Temperature Ionic Liquids.* Wang Y; Jarošová R; Swain GM; Blanchard, GJ. LANGMUIR 36 (2020) 3038-3045.

171. *Strongly Coupled Redox-Linked Conformational Switching at the Active Site of the Non-Heme Iron-Dependent Dioxygenase, TauD*. John CW; Swain GM; Hausinger RP, Proshlyakov D. JOURNAL OF PHYSICAL CHEMISTRY B 123 (2019) 7785-7793.

170. *Detection of H_2O_2 from the Reduction of Dissolved Oxygen on TCP-Coated AA2024-T3: Impact on the Transient Formation of Cr(VI).* Shruthi TK; Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 166 (2019) C3284-C3287.

169. *Evaluation of a Trivalent Chromium Process (TCP) Conversion Coating on AA2024-T3 That Requires No Surface Pretreatment.* Walton J; Shruthi TK; Yancey D; Vlasak P; Westre S; Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 166 (2019) C589-C599.

168. *Inkjet-Printed Carbon Nanotube Electrodes for Measuring Pyocyanin and Uric Acid in a Wound Fluid Simulant and Culture Media.* Jarošová R.; McClure SE.; Gajda M.; Jovic M.; Girault HH.; Lesch A.; Maiden M.; Waters C.; Swain GM. ANALYTICAL CHEMISTRY 91 (2019) 8835-8844.

167. *Ionic Liquids. A Unique and Useful Class of Materials*. Ma K.; Jarošová R.; Wang Y.; Swain GM.; Blanchard GJ. THE CHEMICAL EDUCATOR 23 (2018) 265-272.

166. *Conductive Diamond: Synthesis, Properties, and Electrochemical Applications*. Yang N; Siyu Y; Macpherson JV; Einaga Y; Zhao H; Zhao G, Swain GM; Jiang X. CHEMICAL SOCIETY REVIEWS 48 (2018) 157-204.

165. *Evaluation of BDD Electrode in the Determination of Cd(II), Pd(II), and Hg(II) in Waste Mining*. Tafur J, Espinoza-Montero P, Manciati C, Fierro-Naranjo C, Swain GM, Fernandez L. REV. TEC. ING. UNIV. ZULIA 4 (2018) 44-52.

164. *HPLC-EC Analysis of Estrogenic Compounds Using Tetrahedral Amorphous Carbon Thin-Film Electrodes*. Espinoza E.; Jarosova R.; Swain GM. ELECTROANALYSIS 30 (2018) 1575-1582.

163. *Cross Comparison of TCP Conversion Coating Performance on Aluminum Alloys During Neutral Salt-Spray and Thin-Layer Mist Accelerated Degradation Testing*. Munson CA; McFall-Boegeman S; Swain GM. ELECTROCHIMICA ACTA 282 (2018) 171-184.

162. *Role of Trivalent Chromium in the Anti-Corrosion Properties of a TCP Conversion Coating on Aluminum Alloy 2024-T3*. T K, Shruthi; Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 165 (2018) C103-C105.

161. *Analysis of Ag(I) Biocide in Water Samples Using Anodic Stripping Voltammetry with a Boron- Doped Diamond Disk Electrode.* Maldonado VY; Espinoza PJ; Rusinek CA; Swain GM. ANALYTICAL CHEMISTRY 90 (2018) 6477-6485.

160. *Modulation of an Induced Charge Density Gradient in the Room Temperature Ionic Liquid $BMIM^+BF_4^-$*. Ma K; Jarosova R; Swain GM; Blanchard GJ. JOURNAL OF PHYSICAL CHEMISTRY C,122 (2018) 7361-7367.

159. *Isatin Detection Using an All Boron-Doped Diamond 3-in-1 Macro Electrode and Micro Electrode Array*. Ensch M.; Maldonado VY; Rusinek CA; Swain GM; Rechenberg R; Becker MF; Wehring B, Schuelke T. ANALYTICAL CHEMISTRY 90 (2018) 1951-1958.

158. *Electrochemical Characterization of Different Variants of a Commercial Trivalent Chromium Process (TCP) Coating on Aluminum Alloy 7075-T6*. Munson CA; Zutim P; Swain GM. CORROSION 74 (2018) 50-65.

157. *Isatin Analysis Using Flow Injection Analysis with Amperometric Detection - Comparison of Tetrahedral Amorphous Carbon and Diamond Electrode Performance*. Jarosova R; Sanchez S; Haubold L; Swain GM. ELECTROANALYSIS 29 (2017) 2147-2154.

156. *Anti-Corrosion Properties of a TCP Pretreatment Conversion Coating on Aluminum Alloy 2024-T3 during Moist SO_2 Atmospheric Testing: Effects of Galvanic Coupling.* Whitman, B W.; Li, L; Swain, G M. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 164 (2017) C135-C147.

155. *Effect of Galvanic Current on the Physicochemical, Electrochemical and Mechanical Properties of an Aerospace Carbon Fiber Reinforced Epoxy Composite.* Whitman BW; Miller D; Davis R; Brennan J; Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 164 (2017) C1-11.

154. *Structure and Chemical Composition of Different Variants of a Commercial Trivalent Chromium Process (TCP) Coating on Aluminum Alloy 7075-T6.* Munson CA; Swain GM. SURFACE and COATINGS TECHNOLOGY 315 (2017) 150-162.

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39. *A Confocal Raman Imaging Study of an Optically Transparent Boron-doped Diamond Electrode.* Mermoux M; Marcus B; Swain GM; Butler JE. JOURNAL OF PHYSICAL CHEMISTRY B 106 (2002) 10816-10827.

38. *Direct Electrochemistry of Cytochrome c at Nanocrystalline Boron-doped Diamond.* Haymond S; Babcock GT; Swain GM. JOURNAL OF THE AMERICAN CHEMICAL SOCIETY 124 (2002) 10634-10635.

37. *Dimensionally Stable Pt/diamond Composite Electrodes in Concentrated H_3PO_4 at High Temperature.* Wang J; Swain GM. ELECTROCHEMICAL AND SOLID STATE LETTERS 5 (2002) E4-E7.

36. *Determination of Aminonaphthalenes and Aminobiphenyls by Liquid Chromatography with Amperometric Detection on Diamond-film Electrode.* Cvacka J; Swain GM; Barek J; Zima J. CHEMICKE LISTY 96 (2002) 33-38.

36. *Aliphatic Polyamine Oxidation Response Variability and Stability at Boron-doped Diamond Thin-film Electrodes as Studied by Flow Injection Analysis*. Witek MA; Swain GM. ANALYTICA CHIMICA ACTA Volume: 440 (2002) 119-129.

35. *Diamond Optically Transparent Electrodes: Demonstration of Concept with Ferri-ferrocyanide and Methyl Viologen.* Zak JK; Butler JE; Swain GM. ANALYTICAL CHEMISTRY 73 (2001) 908-914.

34. *Structure and Electrochemical Behavior of Nitrogen-Containing Nanocrystalline Diamond Films Deposited from $CH_4/N_2/Ar$ Mixtures.* Chen Q; Gruen DM; Krauss AR; Corrigan TD; Witek M; Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 148 (2001) E44-E51.

33. *Standard Electrochemical Behavior of High-Quality, Boron-Doped Polycrystalline Diamond Thin-Film Electrodes.* Granger MC; Witek MA; Xu J; Wang J.; Hupert ML.; Hanks A.; Koppang MD; Butler JE; Lucazeau G; Mermoux M; Swain GM. ANALYTICAL CHEMISTRY 72 (2000) 3793-3804.

32. *Incorporation of Pt Particles in Boron-doped Diamond Thin Films Applications in Electrocatalysis.* Wang J; Swain GM; Tachibana T; Kobashi K. ELECTROCHEMICAL AND SOLID STATE LETTERS 3 (2000) 286-289.

31. *The Electrochemical Properties of Nanocrystalline Diamond Thin-films Deposited from C-60/Argon and Methane/Nitrogen Gas Mixtures.* Fausett B; Granger MC; Hupert ML; Krauss AR; Gruen DM; Swain GM. ELECTROANALYSIS 12 (2000) 7-15.

30. *The Incorporation of Pt Nanoparticles into Boron-doped Diamond Thin-films: Dimensionally Stable Catalytic Electrodes.* Wang J; Swain GM; Tachibana T; Kobashi K. JOURNAL OF NEW MATERIALS FOR ELECTROCHEMICAL SYSTEMS 3 (2000) 75-82.

29. *The Influence of Surface Interactions on the Reversibility of Ferri/ferrocyanide at Boron-doped Diamond Thin-film Electrodes.* Granger MC; Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 146 (1999) 4551-4558.

28. *Voltammetric and Amperometric Investigations of Azide Oxidation at the Basal Plane of Highly Oriented Pyrolytic Graphite*. Xu JS; Swain GM. ANALYTICAL CHEMISTRY 71 (1999) 4603-4608.

27. *Probing the Microstructure and Electrochemical Reactivity of Boron-Doped Diamond Thin-Film Electrodes with Raman Spectroscopy and Electrogenerated Chemiluminescence Analysis.* Wang J; Swain GM; Mermoux M; Lucazeau G; Zak J; Strojek JW. NEW DIAMOND AND FRONTIER CARBON TECHNOLOGY 9 (1999) 317-343.

26. *Polycrystalline Diamond Electrodes: Basic Properties and Applications as Amperometric Detectors in Flow Injection Analysis and Liquid Chromatography*. Granger MC; Xu JS; Strojek JW; Swain GM. ANALYTICA CHIMICA ACTA 397 (1999) 145-161.

25. *Electrochemical Modification of Boron-Doped Chemical Vapor Deposited Diamond Surfaces with Covalently Bonded Monolayers.* Kuo TC; McCreery RL; Swain GM. ELECTROCHEMICAL AND SOLID STATE LETTERS 2 (1999) 288-290.

24. *Electrochemical Oxidation of Polyamines at Diamond Thin-film Electrodes.* Koppang MD; Witek M; Blau J; Swain GM. ANALYTICAL CHEMISTRY 71 (1999) 1188-1195.

23. *Structural Characterization, Electrochemical Reactivity, and Response Stability of Hydrogenated Glassy Carbon Electrodes.* Chen QY; Swain GM. LANGMUIR 14 (1998) 7017-7026.

22. *Applications of Diamond Thin Films in Electrochemistry*. Swain GM; Anderson AB; Angus JC. MRS BULLETIN 23 (1998) 56-60.

21. *Anthraqunionedisulfonate Electrochemistry: A Comparison of Glassy Carbon, Hydrogenated Glassy Carbon, Highly Oriented Pyrolytic Graphite, and Diamond Electrodes.* Xu JS; Chen QY; Swain GM. ANALYTICAL CHEMISTRY 70 (1998) 3146-3154.

20. *Oxidation of Azide Anion at Boron-doped Diamond Thin-film Electrodes.* Xu J; Swain GM. ANALYTICAL CHEMISTRY 70 (1998) 1502-1510.

19. *Morphological and Microstructural Stability of Boron-doped Diamond Thin Film Electrodes in an Acidic Chloride Medium at High Anodic Current Densities.* Chen QY; Granger MC; Lister TE; Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 144 (1997) 3806-3812.

18. *Flow Injection Analysis with Diamond Thin-film Detectors.* Jolley S; Koppang M; Jackson T; Swain GM. ANALYTICAL CHEMISTRY 69 (1997) 4099-4107.

17. *Boron-Doped Diamond Thin-film Electrodes*. Xu JS; Granger MC; Chen QY; Swain GM. ANALYTICAL CHEMISTRY 69 (1997) A591-A597.

16. *The Formation and Electrochemical Activity of Microporous Diamond Thin Film Electrodes in Concentrated KOH.* DeClements R; Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 144 (1997) 856-866.

15. *Electrochemical and Surface Structural Characterization of Hydrogen Plasma Treated Glassy Carbon Electrodes.* DeClements R; Swain GM; Dallas T; Swain GM. LANGMUIR 12 (1996) 6578-6586.

14. *Enhanced Signal-to-Background Ratios in Voltammetric Measurements Made at Diamond Thin-film Electrochemical Interfaces.* Strojek JW; Granger MC; Swain GM; Holtz MW; Dallas T. ANALYTICAL CHEMISTRY 68 (1996) 2031-2037.

13. *Freestanding Diamond Thin Films Grown on Glassy Carbon Substrates.* DeClements, R; Hirsche BL; Granger MC; Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 143 (1996) L150-L153.

12. *Cyclic Voltammetric Studies of Charge-Transfer Reactions at Highly Boron-Doped Polycrystalline Diamond Thin-Film Electrodes.* Alehashem S; Chambers F; Strojek JW; et al. ANALYTICAL CHEMISTRY 67 (1995) 2812-2821.

11. *Electrodeposition of Metal Adlayers of Boron-Doped Diamond Thin-Film Electrodes.* Awada H; Strojek JW; Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 142 (1995) L42-L45.

10. *Effect of Underpotential Deposition (UPD) of Copper on Oxygen Reduction at Pt(111) Surfaces.* Abe T; Swain GM; Sashikata K; Itaya K. JOURNAL OF ELECTROANALYTICAL CHEMISTRY 382 (1995) 73-83.

9. *In Situ Scanning-Tunneling-Microscopy of Well-Ordered Rh(111) Electrodes.* Wan LJ; Yau SL; Swain GM; Abe T; Itaya K. JOURNAL OF ELECTROANALYTICAL CHEMISTRY 381 (1995) 105-111.

8. *The Susceptibility to Surface Corrosion in Acidic Fluoride Media - A Comparison of Diamond, HOPG and Glassy Carbon Electrodes.* Swain GM. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 141 (1994) 3382-3393.

7. *Electrochemistry and the Environment.* Rajeshwar K; Ibanez JG; Swain GM. JOURNAL OF APPLIED ELECTROCHEMISTRY 24 (1994) 1077-1091.

6. *The Use of CVD Diamond Thin-Films in Electrochemical Systems.* Swain GM. ADVANCED MATERIALS 6 (1994) 388-392.

5. *High-Surface-Area, Low-Weight Composite Nickel Fiber Electrodes.* Johnson BA; Ferro RE; Swain GM; Tatarchuk BJ. JOURNAL OF POWER SOURCES 47 (1994) 251-259.

4. *Electrochemical Reduction of Oxygen at Electrocoated Nafion-Modified Metal-Carbon Composite and Platinum-Electrodes.* Swain GM; Tatarchuk BJ. JOURNAL OF THE ELECTROCHEMICAL SOCIETY 140 (1993) 1026-1033.

3. *The Electrochemical Activity of Boron-Doped Polycrystalline Diamond Thin-Film Electrodes*. Swain GM; Ramesham R. ANALYTICAL CHEMISTRY 65 (1993) 345-351.

2. *Anodic Fracturing and Vacuum Heat-Treated Annealing of Pitch-Based Carbon Fibers.* Swain GM; Kuwana T. ANALYTICAL CHEMISTRY 64 (1993) 565-568.

1. *Electrochemical Formation of High Surface Area Carbon-Fibers.* Swain GM; Kuwana T. ANALYTICAL CHEMISTRY 63 (1991) 517-519.

Book Chapters

1. G. M. Swain, *Electroanalytical Applications of Diamond Electrodes*, in Thin Film Diamond II, C. Nebel and J. Ristein, eds., **2004**, Chap. 4, pp.121-148.

2. G. M. Swain, *Electrically Conducting Diamond Thin-Films: Advanced Electrode Materials for Electrochemical Technologies*, in Electroanalytical Chemistry, A. J. Bard and I. Rubinstein, eds., Marcel Dekker, Inc., **2004**, Vol. 22, pp. 182-277.

3. D. Knigge, P. Kaur and G. M. Swain, *Recent Trends in the Chemical Modification of sp^2 and sp^3 Bonded Carbon Electrodes*, in Encyclopedia of Electrochemistry, A.J. Bard and M. Stratmann, eds., Wiley-VCH, **2007**, Vol. 10, pp. 236-260.

4. G. M. Swain, *Pretreatment and Activation of Solid Electrode Materials*, in Handbook of Electrochemistry, C. G. Zoski, ed., Elsevier, **2007**, pp. 111-150.

FUNDING HISTORY

{ A more complete list of past grants is available upon request}

RECENT CURRENT FUNDING (2016-present) (50 total grants at MSU since 2000)

50. Office of Naval Research (AERO Structures and Materials Program)
Surface Treatment of Carbon Fiber Epoxy Composites Through Diazonium Admolecule Modification – A Process for Reducing Galvanic Corrosion of Mechanically Joined Aluminum Alloys
Greg Swain, PI
Funding: $250,561
Period: 03/01/24 – 02/28/26

49. DoE/Honeywell
Surface Pretreatment and Surface Finishing Effects on the Corrosion Behavior of Aluminum and Titanium Alloys Prepared by Selective Laser Melting
Greg Swain, PI
Funding: $150,000
Period: 11/01/23-12/31/24
Total Funding: $150,000

48. DoE/Honeywell
Surface Finishing Effects on the Corrosion Susceptibility of Aluminum and Titanium Alloys prepared by Selective Laser Melting
Greg Swain, PI
Funding: $150,000
10/01/2023 – 8/31/2024

47. DoE/Honeywell
Surface Pretreatment and Surface Finishing Effects on the Corrosion Behavior of Aluminum and Titanium Alloys Prepared by Selective Laser Melting
Greg Swain, PI
Funding: $150,000
10/01/2022-8/31/2023

46. MSU-ADVANCE (AgBio)
Diagnostic Technology for Monitoring Exhaled Breath Condensate Applied to Bovine Respiratory Disease Monitoring and Management
Greg Swain, PI
Angel Abuelo Sebio (CVM, MSU) co-PI
Funding: $40,000
05/15/2022 - 05/14/2023

45. NSF-Chemistry
REU Site: Cross Disciplinary Training in Sustainable Chemistry and Chemical Processes
Greg Swain, PI

Funding: $369,398
2/1/2022 - 1/31/2025

44. DoE/Honeywell
Surface Pretreatment and Surface Finishing Effects on the Corrosion Behavior of Aluminum and Titanium Alloys Prepared by Selective Laser Melting
Greg Swain, PI
Funding: $150,000
10/01/21-8/31/22

43. Office of Naval Research
Inhibiting Galvanic Corrosion Between Carbon Fiber Composites and Aluminum Alloys
PI: Greg M. Swain
Funding: $116,833
05/01/21 – 06/15/23

42. Honeywell/DOE
Advanced Manufacturing Metal Coating and Plating
PI = Greg M. Swain
Period = 10/01/20 – 09/30/21
Total = $100,000

41. MTRAC AgBIO
Identifying Infectious Bacteria in Animal Wounds Using Electrochemical Detection of Metabolites
PI = Greg M. Swain
co-PIs = Matthew Beal and Nyssa Levy (Vet Med) and Chris Waters (Microbiology)
Period = 06/01/20 – 06/30/21
Total = $25,000

40. NIH (1R01DK121272-01A1)
Identification of Enteric Nerve Circuits Controlling Gut Motility
PI = James J. Galligan (Pharm/Tox)
co-PI = Greg M. Swain and Frederic Manfredson
Period = 09/17/19 – 06/30/24
Total = $1,899,333.34

39. Army Research Office (71264-CH)
Spectroelectrochemical Studies of Redox Reactions and Electrified Interfaces at Nanostructured Carbons in Room Temperature Ionic Liquids
PI = Greg M. Swain
co-PI = Gary J. Blanchard (Chemistry)
Period = 03/15/19 – 09/30/23
Total = $499,448

38. NSF (CHE-1851776)

REU Site: Cross-Disciplinary Training in Sustainable Chemistry and Chemical Processes
PI = Greg Swain
co-PI = Rob LaDuca (Lyman Briggs)
Period = 03/15/19 – 02/28/22
Total = $288,058

37. NSF (ECCS-1628958)
DMREF: Doping and Defects in Diamond
PI = Tim Grotjohn (ECE)
co-PI's = Greg Swain + three others
Period = 09/1/16 – 08/30/21
Total = $1,000,000

GRANT APPLICATIONS UNDER REVIEW

1. DoE (Material Science Program)
The Electrochemical Properties of Boron-Doped Diamond and Metal/Diamond Composite Powders
Greg Swain, PI
Period: 02/01/25-01/31/28
Total Funding: $631,181
Submission Date and Status: 07/24/2024 (PD70286, still under review)

2. NSF – (Major Instrumentation Program)
MRI Track 1: Acquisition of an XPS Surface Analysis and Imaging System for Materials Research and Education at Michigan State University
Greg Swain, PI and Rebecca Anthony (CHEMS), co-PI
Period: 6/01/25-5/31/28
Total Funding: $1,399,418
Submission Date and Status: 10/25/2023 (PD71710, still under review)

3. NSF – (Electrochemical Systems)
Electrochemical Synthesis of Value-Added Products from Biomass and Pollutants Using Boron-Doped Diamond Electrodes
Greg Swain, PI
Period: 7/1/25 - 6/30/28
Total Funding: $646,784
Submission Date and Status: 2/29/2024 (PD72317, still under review)

PATENTS

1. D. M. Gruen, O. H. Auciello, J. A. Carlisle, G. M. Swain and M. Ding, *Electrode and Electron Emission Applications for N-Type Nanocrystalline Materials*, WO 02/31891 A1 (18.04.2002).

2. G. M. Swain and J. Wang, *Electrically Conductive Polycrystalline Diamond and Particulate Metal-Based Electrodes,* U.S. 6,884,290B2 (April 2005).
3. G. M. Swain, Y. Show, P. Sonthalia and M. Witek, *Boron-Doped Nanocrystalline Diamond*, U.S. 7,144,753B2 (May 2005).
4. G. M. Swain, A. Fischer, J. Bennett and M. Lowe, *Electrically Conducting Diamond Electrodes*, US 7,534,296 (May 2009).
5. G. J. Blanchard, G. M. Swain, K. Ma and R. Jarosova, *Electrically Tunable Ionic Liquid Optics*, U.S. 11,036,110 B2 (June 2021).
6. G. M. Swain, S. Peteu and B. Hrinczenko, *Electrode and Sensor Apparatus and Related Methods for Detection of Nitric Oxide and Peroxynitrite*, U.S. 10,859,527 (Dec. 2020).
7. I. N. Dammulla and G. M. Swain, *Surface Treatment of Carbon Fiber Epoxy Composites Through Diazonium Admolecule Modification,* U.S. Patent Application applied for (July 2023).

CURRENT COLLABORATORS

Prof. Gary Blanchard (MSU), Dr Carl Boehlert (MSU), Dr. John Brennan (NAVAIR), Prof. Sunil Chakrapani (MSU), Prof. Yasauki Einaga (Keio Univ.), Prof. Orlando Fatibello-Filho (UFSCar), Prof. Gerald Frankel (OSU), Prof. Greg D. Fink (MSU), Prof. James J. Galligan (MSU), Prof. Tim Grotjohn (MSU), Dr. Borys Hrinczenko (MSU), Ms. Taylor Kmetz (Honeywell), Dr. Andreas Lesch (Univ. of Bologna), Mr. Craig Matzdorf (NAVAIR), Prof. Richard McCreery (Univ. of Alberta), Mr. Dan Miller (NAVAIR), Dr. Bhavik Patel (Univ. of Brighton, UK), Prof. Marc Porter (Univ. of Utah), Mr. Scott Porter (US ARMY-TARDEC), Mr. Lucas Rice (Honeywell), Prof. Romeu Rocha-Filho (UFSCar), Dr. Thomas Schuelke (Fraunhofer, MSU), Dr. James Siegenthaler (Fraunhofer, MSU), and Dr. David Yancey (Dow Chemical Co.).

CURRENT PREDOCTORAL TRAINEES

Maggie Conway (6th year), Aaron Jacobs (4th year), Stevie Adams (3rd year), Rosemary Augustine (3rd year), Maral Soroush (2nd year), Nimra Hassan (1st year) and Erfan Najafabadi (1st year).

PAST MENTORED GRADUATE STUDENTS (40 predoctoral students trained)

S. Alehashem (M.S. 1999), J. Xu (Ph.D. 1999), M. C. Granger (Ph. D. 1999), Q. Chen (Ph.D. 2000), J. Wang (Ph.D. 2002), S. Haymond (Ph.D. 2002), M. Witek (Ph.D. 2002), M. Hupert (Ph.D. 2002), G. Pimienta (M.S. 2004), J. Stotter (Ph.D. 2004), P. Sonthalia (Ph.D. 2004), G. Muna (Ph.D. 2005), A. Fischer (Ph.D. 2005), J. Bennett (Ph.D. 2006), J. Park (Ph.D. 2006 – joint with James Galligan), Yang Song (Ph.D. 2006), L. Schaeffer (M.S. 2007),Y. Dai (M.S. 2007), E. McGaw (Ph.D. 2007), S. Wang (Ph.D. 2008), Y. Dai (Ph.D. 2009), H. Dong (Ph.D. 2009 – joint with James Galligan), D. Knigge (M.S. 2009), A. Ay (Ph.D. 2010), V. Swope (Ph.D. 2010), X. Yang (Ph.D. 2012), M. Fhaner (Ph.D. 2012), L. Li (Ph.D. 2013), J. Jakupovic (Ph.D. 2013 – joint with James Galligan), M. France (Ph.D. 2015 – joint with James Galligan), Catherine Munson (Ph.D. 2017), Brandon Whitman (Ph.D. 2018 completed but not defended), Romana Jarošová (Ph.D. 2019), Kirti Bhardwaj (Ph.D. 2019), Shruthi Tiruchirapallikumarraj (Ph.D. 2020), Sarah McFall-Boegeman (2021), Fatemeh Parvis (Ph.D. 2022), Jack Walton (Ph.D. 2023), Skye Henderson (Ph.D. 2023), Isuri Dammulla (Ph.D. 2024) and Shashika Sabaragamuwe (Ph.D. 2024).

MENTORED POSTDOCTORAL RESEARCHERS (15 postdoctoral trainees)

Dr. Tedd E. Lister (1996-97), Karolina Pecková (2004-2005), Dr. Veronika Mocko (2003-2007), Dr. Ahiua Liu (2006-2007), Prof. Jerzy Zak (2000, 2001, 2005, 2007), Dr. Isao Sasaki (2006-

2007), Dr. Josef Cvacka (2001-2002), Dr. Bhavik Patel (2006-2007), Dr. Yoshiyuki Show (2001-2004), Dr. Martin Novotny (2005-2008), Dr. Jesse Seegmiller (2004-2005), Dr. Dasa Babankova (2006-2008), Dr. Liang Guo (2007-2010), Dr. Doo Young Kim (2008-2011), Dr. Hong Zhou (2008 - 2011).

MENTORED VISITING RESEARCHERS

Professors Jerzy Strojek and Jerzy Zak (Silesian Technical University, Gliwice, Poland) – served as Ph.D. preceptor for Malgorzata Witek (Ph.D. 2002), Mateusz Hupert (Ph.D. 2002)

Professor Jiri Barek (Charles University, Prague, Czech. Rep.) – hosted the following students and postdocs: Alexander Munk (1998), Karolina Pecková (2004-2005), Dr. Veronika Mocko (2003-2007), Dr. Josef Cvacka (1998-1999 and 2001-2002), Dr. Martin Novotny (2005-2008), Dr. Jesse Seegmiller (2004-2005), Dr. Suzana Babankova (2006-2008) and Romana Jarošová (2014-2016). Served as Ph.D. preceptor for Romana Jarošová (2016-2019).

Professor Romeu C. Rocha-Filho (Universidade Federal de São Carlos, Brazil) – hosted Ph.D. students Ricardo Brocenschi (2012), Naihara Wachter (2015) and Kallyni Irikura (2016).

Professor Orlando Fatibello-Filho (Universidade Federal de São Carlos, Brazil) – hosted Ph.D. student Bruna Claudia Lourenção (2012).

Professor Rodrigo Del Rio (Pontificia Universidad Católica de Chile, Santiago, Chile) – hosted Ph.D. student Boris Duran (2012).

Professor Bernardo A. Frontana-Uribe (Universidad Nacional Autónoma de Mexico (UNAM) – hosted Ph.D. student Patricio Espinoza (2013).

Professor Patricio Espinoza (Universidad Central del Ecuador) – hosted undergraduate students, Andres Ramon and Lenin Ruiz Davila (2014), Elizabeth Espinosa (2017), Vanessa Maldonado (2017), Victoria Perugachi (2017) and Maria Nevarez Martinez (2017-2018).

Professor Robert Bogdanowicz (Gdańsk University of Technology, Poland) – hosted Ph.D. student Michal Sobaszek (2015).

Professors Sonia Biaggio and Nerilso Bocchi (Universidade Federal de São Carlos, Brazil) – hosted Master's students, Paulo Zutim and Diego da Silva (2015), and undergraduate student, Samuel Mattoso (2019).

Maiyara Prete (Ph.D. graduate student, Universidade Estadual de Londrina, Brazil) (2021-2022) and Simphiwe Zwane (Ph.D. graduate student, University of South Africa) (2021-2022).

Dr. Alice Njue (faculty member, Egerton University (Kenya)). Hosted as part of the African Alliance Program (August 2023-July 2024).

VOLUNTEER ACTIVITIES

Advent House Ministries of Lansing (meal preparer and server), Red Cross blood donor, St. Vincent Catholic Charities, St. John's Food Cupboard, Big Brother and Big Sisters of Lansing

(mentor, 2002-2008), Youth Football Coaching (2004-2014), Youth Basketball Coaching (boys and girls, 2004-2014) and High School Basketball Coaching (girls, 2011-2015).