

Curriculum Vitae
Megumi Fujita, Ph.D.

Professor, Department of Chemistry
University of West Georgia
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(updated August 10, 2022)

Teaching

A. Employment History

2020.07-present **Program Coordinator** of Chemistry, Department of Mathematics, Sciences and Technology, University of West Georgia
2017- present **Professor**, Department of Chemistry, University of West Georgia
2011- 2017 **Associate Professor**, Department of Chemistry, University of West Georgia
2014.06-07 **Visiting Scholar** at Calvin College, Grand Rapids, MI (funded by NSF RUI ROA)
2004- 2011 **Assistant Professor**, Department of Chemistry, University of West Georgia
2001-2004 **Post-doctoral Research Associate**, Department of Chemistry, University of Minnesota
1995-2000 **Graduate Assistant**, Department of Chemistry, University of Alberta

B. Courses Taught

<u>Course Number</u>	<u>Course Name</u>	<u>Semesters</u>
CHEM 1151K Lab	Survey of Chemistry I, Lab only	S17, F17, F22
CHEM 1211K	Principles of Chemistry I (Lecture + Lab) incl. co-teaching (R)	F04-05/08, R16,11,12
CHEM 1211K Lab or 1211L	Principles of Chemistry I Lab	F09,10,21,22
CHEM 1211K-25H	Principles of Chemistry I Honor (Lecture + Lab)	F06/07
CHEM 1212K-25H	Principles of Chemistry II Honor (Lecture + Lab)	S07/08
CHEM 1212 + 1212L	Principles of Chemistry II with Lab (co-taught with Dr. Slattery)	R15
CHEM 1212	Principles of Chemistry II, Lecture (co-taught with Dr. Stuart)	R17
CHEM2130	Sophomore Chemistry Seminar	F21
CHEM 2411L	Organic Chemistry I Lab	F04-07/09-10/12-16/20; S06/10/15-22
CHEM 2455L	Principles of Organic Chemistry Lab	F17-19
CHEM 3422L	Organic Chemistry II Lab	S11-18
CHEM 4084	Senior Seminar	S16-22
CHEM 4685 (4385 F21)	Spectroscopy (newly developed in 2016)	F16, F19, F21
CHEM 4685	Green Chemistry (newly developed in 2009)	F09/12/13/15/17/20
CHEM 4610 or 4612	Inorganic Chemistry	S05 (4612) S06-14 (4010+4612), F14 (4610)
CHEM 4910L&4913L	Tools and Applications in Chemistry, combined with CHEM4913L (co-taught with Drs. Khan and Geisler)	S17
CHEM 4913L	Advanced Synthesis Lab (formerly Advanced Lab III) (co-taught with Drs. Ray and Slattery -S17, with Dr. Ray S18-)	S05-18, 20-21
UWG-1101	First Year University Experience (co-taught with Dr. Basu-Dutt)	F06/07/09/12-16

C. Undergraduate Student Work Directed (DS = Directed Studies)

Total number of undergraduate research students supervised: **52**

<u>Student (Grad. Sem/Yr)</u>	<u>Project Title</u>	<u>Semesters</u>	<u>Placement</u>
Jaela Reese	Cellulose bioplastic (LSAMP)	F22	UWG Senior
Shaye Snajkowski	Chitosan bioplastic (DS, SRAP)	F22	UWG Junior
Pedro Vega	Chitosan bioplastic (DS, SRAP)	S22, F22	UWG Senior
Abigail baker	Polymer degradation in scCO ₂ (DS, SRAP)	S22, F22	UWG Senior
Yessica Perez	Chitosan bioplastic (DS)	F21-S22	Graduated
Eli Perez-Lopez	Polymer degradation in scCO ₂ (LSAMP)	S21, F21, S22	Graduated
Katravius Mitchell	Polymer degradation in scCO ₂ (LSAMP)	F20, S21	Graduated
Lauren Ochoa (S20)	Amino acid analysis using HPLC (FWSP)	F19, S20	GA DPH
Seth Bradley (S21)	Enzymatic reactions in supercritical CO ₂ (SRAP, DS)	R19, F19, S20	U Kentucky (PhD)
Xeniah Sillie (F19)	Amino acid analysis using HPLC (SRAP, Summer REU, DS)	S19, R19, F19	Georgia Pacific
Hannah Downs (S20)	Synthesis, colorimetric sensor (SRAP) (Biology major)	F18, S19	GA DPH
Imani Davis (S20)	Synthesis, colorimetric sensor (FWSP, SRAP)	F17, S18, F18	Graduated
Andrew Sennett (S19)	NMR & UV titration of Monensin A (co-supervised with Dr. Khan, SEEP)	S17	U. Arizona (PhD)
Kimberly Bacon (F16)	NMR titration of monensin A (co-supervised with Dr. Khan)	F16, S17	Coca-Cola
David Willoughby(S18)	NMR titration of monensin A (SEEP) (Biology major)	F16	Medical school in FL
Scott Inthysone (S17)	Synthesis of 3-nitro analog of indoles (SRAP, FWSP, Thesis)	F16, S17	Coca-Cola
Aminah Lerman (S18)	Synth. of 7-pyridyleindole, 2,3-substituted (ORSP-FRG, LSAMP, Thesis)	S16, R16, F16, S17, F17, S18	Coca-Cola
Jordan Davoll (S18)	Synthesis of indole-pyridine couples (SRAP, ORSP-FRG, LSAMP, Thesis)	S16, R16, F16, S17, F17, S18	Coca-Cola
Zachary Nofs (F18)	Synthesis of indole-pyridine ligands (UWise)	F15, S16	Kimoto Tech
Rigoberto Segovia (Pharmacy school)	UV-Vis titration analysis of complex equilibria (LSAMP)	F15, S16	UGA Pharmacy School
Thomas Vinson (F15)	Synthesis of indole-pyridine ligands (DS, SRAP)	S15, R15, F15	Kimoto Tech R&D Chemist
Margaret Falkenberry (Pharmacy school)	UV-Vis titration analysis of complex equilibria (UWise, DS)	F14, S15, R15, F15, S16, R16	UGA Pharmacy School
N. Allie Doles (S16)	New indole derivatives, UV-Vis titration analysis (UWise, NSF-RUI)	S14, R14, F14	Lake Erie Col of Osteopathic Medicine
Amaan Kazerouni (S15)	Valinomycin-Ca ²⁺ complexes and synthesis of indole derivatives (DS, SRAP, UWise, Thesis)	R13, F13, S14, F14, S15	Emory (PhD)
Soyoung Alexander (S15)	UV-Vis spectroscopy of ion receptors and synthesis of indole derivatives (DS, SRAP, UWise, LSAMP, Thesis)	R13, F13, S14, F14, S15	Mercer Pharmacy School

Joanna Denton (S14)	Spectr. studies of indole ion interaction (DS, SRAP, Thesis)	F13, S14	Yale U (PhD)
Emmanuel Nanje (S14)	UV-Vis spectroscopy of ion receptor (DS, SRAP, Thesis)	S13, R13, F13, S14	Food service industry
Aaron Arruda (S14)	Ion pair receptor modification (COSM, SRAP, DS, Thesis)	S13, R13, F13, S14	Emory (MSc incomplete)
Hahninae Kim	Gaussian modeling (DS, SRAP, UWise)	F12, S13	UWG – changed major to CS – transferred?
Selena Mayfield (F17)	Synthesis and analysis of ion receptors (UWise)	S12, S13	Quest Diagnostics (Lab Tech)
Christiana Okrah (F12)	Synthesis of ion receptors (DS, UWise, Thesis)	F11, S12, R12, F12	Coca-Cola
Alisha Contractor (S13)	Synthesis and analysis of ion receptors (DS, SRAP, UWise, Thesis)	S11, R11, F11	UC Berkeley (PhD)
Kristin Skala (S10)	Spectroscopic analysis of ion receptors (post-graduate)	S12, F12, S13, R13 F10, S11	Lab Analyst at Alkemes → Chemist at Cryolife
Alexander Priest (F12)	Synthesis of ion receptors (DS)	F10, S11, R11, F11, S12	Graduated
Sharise Stuckey (S12)	Synthesis of ion receptors (DS)	F10, R11	Monsanto (Lab Tech) → Nitta → Schwan's
Kelly Lawson (S12)	Indole ligands (SRAP)	F09	Plantation Pipeline
Shawn Ridlen (S10)	Indolo[2,3-a]carbazole ligand synthesis (Thesis)	R09, F09, S10	UNC Charlotte MSc ('12) → U Texas Arlington PhD
James Stubblefield (S14)	Dibenzofuran ligands (SRAP, Thesis)	F07, S08, F08, S09, S14	Cardinal Health Senior Technician
Addie Summitt (S10)	Indole ligands & complexes (GEMS, SRAP, Thesis)	R07, F07, S08 (F08), F09, S10	Teacher, Island Village Montessori, Venice FL
David Foster (S08)	Dibenzofuran, carbazole, etc (Thesis, SRAP)	F06, S07, R07, F07, S08	Analytical chemist, Printpack, LLC
Johnathan Erler (S07)	Dibenzofuran ligands (Thesis)	R06, F06, S07	Analytical Services, Inc.
Katelyn Perkins (S08)	Indole Tridentate Lig. (GEMS, SRAP)	R06, F06, S07, R07, S08	Medical School U Western Ontario
Amna Ali (F08)	Indole Tridentate Ligand & Complex (Thesis, SRAP)	S06, R06, F06, S07, R07, F07, S08, U08, F08	Mercer Pharm Ph.D
Bryan Cox (S06)	Indole Modif., Ni complex (Thesis)	S06	UAlabama, Birmingham PhD
Blake Lord (S06)	Tridentate ligand synthesis (Thesis)	S06	Mercer Pharmacy School
R. Michael Kelly (S06)	Pyrrole ligands, Co complex (Thesis)	F05, S06	Southern Company
Colleen Knight (S06)	Indole Modif. (DS)	F05	Emory U PhD (2011)
Ashley Ribera (S07)	BQPA Synth. & Catal. (Thesis)	F05, S06, F06, S07	CDC → Emory MSc
Marshall Blosser	Pressure reactor (SRAP)	F05	Military
D. Craig Maybern	Indole Modif. (SRAP)	F05, S06	UGA (transfer)
Robert Kutlik	Indole Modif. (REU, Middle GA College)	R05	UGA MSc, industry
Ivan Batishchev	TPA Synth. & Catal. (SRAP, REU)	S05, U05	Georgetown U (transfer)
Yau Fong (Kyle) Chan (S05/F05)	Quinaldine Modification (Thesis)	S05, U05	USG MSc → EPA → Hong Kong EPA

D. Student Presentations at External (National/Regional) Meetings

(Undergraduate students are underlined) († presenter) (* Principal Investigator)

26. Hannah Downs[†], Imani Davis, Scott Inthysone, **Megumi Fujita***, “Selectivity of aromatic nitration on an electron-rich indole,” **National Conference on Undergraduate Research (NCUR)**, Kennesaw, GA, April 10-13, 2019, *Poster*.
25. Aminah Lerman[†], Scott Inthysone, Jordan Davoll, **Megumi Fujita***, “Exploring indole derivatives as metal ion colorimetric sensors,” **Southeastern Regional Meeting of the American Chemical Society (SERMACS) 2017**, Raleigh, NC, November 7-11, 2017, *Poster*.
24. Aminah Wilson (Lerman)[†], Jordan Davoll[†], Scott Inthysone, **Megumi Fujita***, “Effect of substituents on the colorimetric sensing property of indoles,” **Emerging Researchers National (ERN) Conference in STEM**, Washington D.C, March 2-4, 2017, *Poster*.
23. Jordan Davoll[†], Angelah (Aminah) Wilson[†], Scott Inthysone[†], **Megumi Fujita***, “Effect of substituents on the colorimetric sensing property of indoles,” **Georgia Undergraduate Research Conference (GURC) 2016**, Milledgeville, GA, November 4-5, 2016, *Oral presentation*.
22. Soyoung K. Alexander[†], Margaret L. Folkenberry[†], **Megumi Fujita***, “Topologies and complex stoichiometries of divalent cation binding to valinomycin, a potassium-selective ion carrier,” **Southern Undergraduate Research Conference (SURC) 2015**, Tuscaloosa, AL, February 7, 2015, *Oral presentation*.
21. Nancy A. Doles[†], Nicholas Blair[†], Farooq A. Khan, **Megumi Fujita***, “UV-Vis titration and mass spectrometry to compare cation binding strength for valinomycin,” **Southeastern Regional Meeting of the American Chemical Society (SERMACS) 2014**, Nashville, TN, October 16-19, 2014, *Poster*.
20. Amaan Kazerouni[†], Soyoung Alexander[†], Farooq A. Khan, **Megumi Fujita***, “Binding of divalent cations to valinomycin characterized by NMR and UV-Vis titrations and X-ray crystallography,” **Southeastern Regional Meeting of the American Chemical Society (SERMACS) 2014**, Nashville, TN, October 16-19, 2014, *Poster*.
19. Amaan Kazerouni[†], **Megumi Fujita***, “Revisiting valinomycin: Effect of water on the conformation of valinomycin-cation complexes,” **National Conference on Undergraduate Research (NCUR)**, Lexington, KY, April 3-5, 2014, *Oral Presentation*.
18. Soyoung Alexander[†], **Megumi Fujita***, “Indole derivatives and their interaction with cations,” **National Conference on Undergraduate Research (NCUR)**, Lexington, KY, April 3-5, 2014, *Poster*.
17. Amaan Kazerouni[†], Alisha Contractor, Farooq A. Khan, **Megumi Fujita***, “Revisiting valinomycin: Effect of water on the conformation of valinomycin-cation complexes,” **Southeastern Regional Meeting of the American Chemical Society 2013**, Atlanta, GA, November 12-16, 2013, *Poster*.
16. Emmanuel Nanje[†], Soyoung Alexander[†], Aaron Arruda[†], Joanna Denton[†], Farooq A. Khan, **Megumi Fujita***, “Indole derivatives and their interaction with cations,” **Southeastern Regional Meeting of the American Chemical Society 2013**, Atlanta, GA, November 12-16, 2013, *Poster*.
15. Alisha Contractor[†], Christiana Okrah, Farooq A. Khan*, **Megumi Fujita***, “Spectroscopic/colorimetric studies of a new anion/cation receptor: PAln,” **National Collegiate Honors Council (NCHC) Conference 2012**, Boston, MA, November 14-18, 2012, *Poster*.
14. Christiana Okrah[†], Alisha Contractor, Farooq A. Khan*, **Megumi Fujita***, “Spectroscopic/colorimetric studies of a new anion/cation receptor: PAln,” **Southeastern Regional Meeting of the American Chemical Society (SERMACS) 2012**, Raleigh, NC, November 14-17, 2012, *Poster*.

13. Alisha Contractor[†], Kristin N. Skala-Jordan, Farooq A. Khan*, **Megumi Fujita***, “Spectroscopic studies of a new ion-pair receptor: PAIn,” **244th American Chemical Society National Meeting & Exposition**, Philadelphia, PA, August 19-23, 2012, *Poster*.
12. Alisha Contractor[†], Kristin Skala-Jordan, **Megumi Fujita***, “Spectroscopic Studies of a New Ion-pair Receptor,” **National Conference on Undergraduate Research (NCUR)**, Ogden, UT, March 28-31, 2012, *Poster*.
11. Alisha Contractor[†], Kristin N. Skala, Farooq A. Khan*, **Megumi Fujita***, “Cooperative ion-pair binding of an indole-based ion-pair receptor,” **241st Southeastern Regional Meeting of the American Chemical Society 2011**, Richmond, VA, October 26-29, 2011, *Poster*.
10. Kristin N. Skala, Katelyn G. Perkins, Amna Ali, Farooq A. Khan*, **Megumi Fujita**^{†*}, “Ion-pair binding of a new N,N,NH,NH receptor,” **241st American Chemical Society National Meeting & Exposition**, Anaheim, CA, March 27-31, 2011, *Poster*.
9. J. Stubblefield[†], **M. Fujita***, “Metal Complexation of New Dibenzofuran-Based Ligands,” **The Southeastern Regional Meeting of the American Chemical Society 2008**, Nashville, TN, November 12-15, 2008, *Poster*.
8. **M. Fujita**,^{†*} D. Foster, K. Perkins, A. Ali, A. Summitt, J. Stubblefield, “New Family of Tridentate and Tetradentate Ligands with Indole, Dibenzofuran and Dibenzothiophene as Donor Groups,” **235th ACS National Meeting & Exposition**, New Orleans, LA, April 6-10, 2008, *Poster*.
7. A. Ali[†], M. Fujita*, “Synthesis of new transition metal catalysts for ‘green’ oxidation with N₂O,” **National Conference on Undergraduate Research (NCUR)**, Salisbury, MD, April 10-12, 2008. *Student Oral Presentation*.
6. A. Ali,[†] A. Summitt,[†] K. Perkins, **M. Fujita***, “New Indole-based Tetradentate and Tridentate Ligands and Their Metal Complexes,” **The Southeastern Regional Meeting of the American Chemical Society 2007**, Greenville, SC October 24-27, 2007, *Poster*.
5. K. Perkins,[†] A. Ali, **M. Fujita***, “New Indole-based Tetradentate and Tridentate Ligands and Their Complexes,” **234th ACS National Meeting**, Boston, MA August 19-23, 2007, *Poster*.
4. D. Foster,[†] **M. Fujita***, “New Tripodal Dibenzofuranyl Ligands and Their Reactivity With Metal Ions,” **234th ACS National Meeting**, Boston, MA August 19-23, 2007, *Poster*.
3. D. Foster,[†] J. Erler,[†] **M. Fujita***, “Transition metal catalysts for environmentally benign oxidation of organic compound by N₂O,” **233rd ACS National Meeting**, Chicago, IL March 25-29, 2007, *Poster*.
2. **M. Fujita***, A. M. Ribera,[†] D. C. Maybern,[†] R. M. Kelly,[†] R. Kutlik, C. Knight, Y. F. Chan, S. Reddig, I. Batishchev, “Progress towards transition metal catalysts for environmentally benign oxidation of organic substrates,” **231th ACS National Meeting**, Atlanta, GA March 26-30, 2006, *Poster*.
1. **M. Fujita***, D. C. Maybern,[†] B. Lord, A. Ali,[†] A. M. Ribera,[†] B. Cox, S. Reddig, R. Kutlik, C. Knight, “Toward catalysts for environmentally benign oxidation of organic substrates by N₂O,” **231th ACS National Meeting**, Atlanta, GA March 26-30, 2006, *Poster*.

E. Student Presentations, Internal/Local (UWG, LSAMP)

(Undergraduate students are underlined) (†presenter) (* Principal Investigator)

27. Eli Perez-Lopez[†], Yessica Perez, Katravius Mitchell, Megumi Fujita*, Chitosan from Shrimp Shells to Biodegradable Plastic,” **LSAMP Annual Research Symposium**, April 21-23, 2022, *virtual poster presentation*.

26. Yessica Perez[†], Katravius Mitchell, Eli Perez-Lopez, Megumi Fujita*, Chitosan from Shrimp Shells to Biodegradable Plastic,” **UWG Scholars Day Undergraduate Research Conference**, April 5, 2022, *poster*.
25. Katravius Mitchell[†], Eli Perez-Lopez[†], Seth Bradley, Megumi Fujita*, Catalytic degradation of waste polystyrene in supercritical CO₂,” **GA-AL LSAMP 2021 Annual Symposium**, virtual, April 17, 2021, *synchronous oral presentation*.
24. Seth Bradley[†], Katravius Mitchell, Eli Perez-Lopez, Megumi Fujita*, Catalytic degradation of waste polystyrene in supercritical CO₂,” **UWG Scholars Day Undergraduate Research Conference**, virtual, April 5, 2021, *synchronous oral presentation*.
23. Hannah Downs[†], Imani Davis, Scott Inthysone, **Megumi Fujita***, “Selectivity of aromatic nitration on an electron-rich indole,” **UWG Scholars Day Undergraduate Research Conference** April 2, 2019, *Poster*.
22. Imani Davis[†], Aminah Lerman, **Megumi Fujita***, “Exploring indole derivatives as metal ion colorimetric sensors,” **UWG Scholars Day Undergraduate Research Conference** April 3, 2018, *Poster*.
21. Andrew Sennett[†], Kimberly Bacon[†], Farooq Khan, **Megumi Fujita***, “Binding studies of Monensin A methyl ester with divalent (2+) metal ions,” **UWG Scholars Day Undergraduate Research Conference**, April 4, 2017 *Poster*.
20. Aminah Wilson (Lerman)[†], Jordan Davoll[†], Scott Inthysone, **Megumi Fujita***, “Effect of substituents on the colorimetric sensing property of indoles,” **GA-AL LSAMP 2017 Research Symposium**, Morehouse College, Atlanta, GA April 22, 2017, *Poster*.
19. Margaret Falkenberry, Rigoberto Segovia, Megumi Fujita*, “Antibiotic valinomycin: Does the K⁺ transporter also transport Ca²⁺?” **GA-AL LSAMP 2016 Research Symposium**, Clark Atlanta University, Atlanta, GA April 16, 2016, *Poster*.
18. Margaret Falkenberry, Rigoberto Segovia, Megumi Fujita*, “Antibiotic valinomycin: Does the K⁺ transporter also transport Ca²⁺?” **Big Night 2016**, Carrollton, GA April 13, 2016, *Poster*.
17. Soyoung K. Alexander[†], Megumi Fujita*, New conformations of valinomycin-cation complexes,” **LSAMP 2015 Research Symposium**, Carrollton, GA April 11, 2015, *Poster*.
16. Amaan Kazerouni, **Big Night 2014**, April 15, 2014, “Discovery of new conformations of cation-bound valinomycin,” *Poster*.
15. Emmanuel Nanje[†], Soyoung Alexander[†], Aaron Arruda[†], Joanna Denton[†], Farooq A. Khan, Megumi Fujita*, **Big Night 2014**, April 15, 2014, “Exploration of indoles as colorimetric cation sensors,” *Poster*.
14. Amaan Kazerouni, **Research Day**, March 26, 2014, “Revisiting valinomycin: effect of water on the conformation of valinomycin-cation complex,” **Oral Presentation, won the 3rd place**.
13. Alisha Contractor, **Big Night 2013**, April 2, 2013, “Synthetic Anion/Cation Receptor PAIn,” **poster, won the 1st place**.
12. Alisha Contractor, **Research Day**, March 13, 2013, “Synthetic Anion/Cation Receptor PAIn,” **oral presentation, won the 2nd place**.
11. Alisha Contractor, **Big Night 2012**, April 18, 2012, “Spectroscopic Studies of a New Ion-pair Receptor,” **poster, won the 2nd place**.
10. Addie Summitt, **Big Night 2010**, April 1, 2010, *Poster* titled “New Indole-based Tetradentate and Tridentate Ligands and Their Metal Complexes”
9. James Stubblefield, **Big Night 2009**, April 2, 2009, *Poster* titled “Metal Complexation of New Dibenzofuran-Based Ligands”
8. Katelyn Perkins, **Big Night 2008**, April 3, 2008, *Talk* titled “Chemistry for Green Future”

7. Amna Ali, Addie Summitt, Megumi Fujita,* **Big Night 2008**, April 3, 2008, *Poster* titled “New Indole-based Tetradentate and Tridentate Ligands and Their Metal Complexes”
6. James Stubblefield, David Foster, Megumi Fujita,* **Big Night 2008**, April 3, 2008, *Poster* titled “New Dibenzofuranyl Multidentate Ligands and Their Reactivity With Metal Ions”
5. Katelyn Perkins, **Sigma Xi/Research Day Student Research Paper Competition 2008**, March 6, 2008, *Talk* titled “Chemistry for Green Future: Synthesis of New Transition Metal Catalysts for Oxidation with the Greenhouse Gas N₂O.” **won the 1st place.**
4. Katelyn Perkins, Amna Ali, Ashley Ribera, Megumi Fujita,* **Big Night 2007**, April 5, 2007, *Poster* titled “Green Oxidation Catalysts: Synthesis of a catalyst for environmentally benign oxidation by N₂O”
3. David Foster, Johnathan Erler, Megumi Fujita,* **Big Night 2007**, April 5, 2007, *Poster* titled “Transition Metal Catalysts for Environmentally Benign Oxidation of Organic Compounds by N₂O”
2. Megumi Fujita,* Ashley Ribera, D. Craig Maybern, R. Michael Kelly, Robert Kutlik, Colleen Knight, Yau Fong Chan, Ivan Batishchev, **Big Night 2006**, April 6, 2006, *Poster* titled “Progress Towards Transition Metal Catalysts for Environmentally Benign Oxidation of Organic Substrates”
1. Megumi Fujita,* D. Craig Maybern, Blake Lord, Amna Ali, Ashley Ribera, Bryan Cox, Susan Reddig, Robert Kutlik, Colleen Knight, **Big Night 2006**, *Poster* titled “Toward Catalysts for Environmentally Benign Oxidation of Organic Substrates by N₂O”

F. Student Senior Theses (23 completed)

23. Yessica Perez - *Formulation and Characterization of Chitosan Bioplastic*, May 2022.
22. Seth Bradley - *Catalytic degradation of waste polystyrene using supercritical CO₂ as a reaction solvent*, May 2021.
21. Xeniah Sillie - *HPLC method development for quantitative and qualitative analysis of free amino acid content in soy sauce and alternatives*, December 2019.
20. Jordan Davoll - *Synthesis of indole-containing colorimetric sensor for metal ions*, May 2018.
19. Aminah Lerman - *Progress towards the synthesis of 7-(pyridine-2-yl)-1H-indole-2,3-diol*, May 2018.
18. Scott Inthysone - *Synthesis of 3-nitroindole derivatives as building blocks for colorimetric sensors*, May 2017.
17. Thomas Vinson - *Synthesis of Indole Based Colorimetric Sensors*, December 2015.
16. Soyoung Alexander - *Conformation and Binding Stoichiometry of Valinomycin-M²⁺ Complexes in CH₃CN*, April 2015.
15. Amaan Kazerouni - *Characterization of Ca²⁺ binding to valinomycin by ¹H NMR titrations, X-ray crystallography, and elemental analysis*, April 2015.
14. Joanna Denton - *An Exploration of Indole Derivatives' Color Formation Mechanism: The Color of PAIn*, April 2014.
13. Aaron Arruda - *Unexpected Indole Coupling Reaction*, April 2014.
12. Emmanuel Nanje - *Investigation of the color formation of an indole derivative PAIn' with d-block cations*, April 2014.
11. Alisha Contractor – *Synthesis and Spectroscopic Characterization of a New Ion-Receptor: PAIn*, April 2013.
10. Christiana Okrah – *UV-Vis Spectroscopic studies of a synthetic ion-pair receptor PAIn with Cu(OTf)₂*, December 2012.
9. Shawn Ridlen – *Synthesis of a Preorganized Dinucleating Ligand: An Indolo[2,3-a]carbazole Derivative*, May 2010.
8. Addie Summitt – *Synthesis of Tridentate and Tetradentate Ligands in Indole Groups for Homogenous Catalyst Development*, May 2010.

7. Amna Ali – *Synthesis of Tridentate Ligands for Homogeneous Transition Metal Catalysts for use in Selective Oxidation of Organic Compounds with N₂O*, December 2008.
6. David Foster – *Synthesis of Four Novel Ligands as Templates for Homogeneous Metal Catalysts for N₂O Activation*, May 2008.
5. Ashley Ribera – *Synthesis of Cu^(I) Tridentate Ligand-Metal Catalysts for the Oxidation by N₂O*, May 2007.
4. Johnathan Erler – *Synthesis of new tridentate ligands and their metal complexes as potential catalysts for selective oxidation of organic substrates by N₂O*, May 2007.
3. Blake Lord – *Synthesis of Catalysts for Environmentally Benign Oxidation of Organic Substrates by N₂O* – May 2006.
2. R. Michael Kelly – *Synthesis of Li[Co(tpa)(thf)₂] (tpa = tris(pyrrolyl- α -methyl)amine) as a Potential Catalyst for Epoxidation of Olefins by Hydrogen Peroxide* – May 2006.
1. Yau Fong (Kyle) Chan – *Synthesis of Bio-inspired Aerobic Oxidation Catalyst* – May 2006.

Service to Institution

A. University-Wide

- **Faculty Senate, Budget Committee**, COSM-representative (F19-S21)
- **UWG Scholarship Portal Task Force**, member (S19)
- **Institutional Policy Committee (former Policy Task Force till S18)**, member (S18-F19)
- **Faculty Senate**, COSM representative (F15-S18)
- **Faculty Senate, Executive Committee** (F17-S18)
- **Faculty Senate, Faculty Development Committee** (member, F15-S17, **Chair** F17-S18)
- **Faculty Research Grant Subcommittee (FDC), Chair** (F17)
- **ORSP Faculty Research Grant Committee (FDG)** (reviewer, FDC representative) (F15-S16)
- **ORSP Advisory Board** (FDC representative) (F15-S16)
- **College For A Day Newnan, Presenter** (8-14-2015): “ReAction! Chemistry in the Movies”
- External Reviewer, Interdisciplinary Committee: reviewed a proposal of Minor program in Sustainability (Spring 2015)
- **Faculty Research Grant Committee** (member, 2007 - 2009)
 - reviewed the FRG research proposals for two years
 - helped to revise the format of the Call for Proposals
- Advanced Academy Nominating Committee (2006 - 2008)

B. College-level (CACSI = College of Arts, Culture, and Scientific Inquiry, COSM = College of Sciences and Mathematics, or COAS = College of Arts and Sciences)

- **CACSI Program Coordinator Committee** (F20-S21): member.
- **CACSI Diversity and Inclusion Committee** (F20-S21): member.
- **COSM Scholarship Committee** (S18, S19): Shared experiences with the UWG Scholarship Portal with representatives from other departments; assisted Dean in the process.
- **COSM Preview Day** (October 11, 2014 and March 7, 2015): Performed a chemistry demonstration show with Drs. Douglas Stuart and Spencer Slattery.
- **COSM Tenure and Promotion Committee**, (2012-2014)
- **COSM College For A Day** Instructor: offered two classes on the COSM events for high school students

- (1) "ReAction! Chemistry in the Movies," co-taught with Dr. Doug Stuart, on November 10, 2012
- (2) "Smart Materials," co-taught with Dr. Spencer Slattery, February 11, 2012
- **Faculty Advisory Committee, COAS** (2005 Fall – 2007 Spring)
 - served as one of two assistants to the committee chair (Dr. Paul Luken)
 - served in the Distinguished Scholar Award Subcommittee (Chair: Dr. Susan Ashford), 2006 & 2007
- **Research Day/Sigma Xi Judge, COAS** (March 10, 2005; March 7, 2006)
 - served as a judge twice for the Science research presentation competition

C. Departmental Services

- **Chemistry Program Coordinator** (F20-)
- **Chemistry Scholarships and Awards Selection Committee, chair** (S14-current; S21 with Dr. Martin McPhail as a co-chair); assisted the chair Dr. Slattery to streamline the selection process (S14); implemented a new online application and organized selection meetings (S15); tested the new UWG Scholarship Portal and gave many suggestions to the Portal administrators (S16); continuing to be responsible for advertising, gathering data for nominees and applicants, and lead the selection discussion; continuing to be the liaison to University Advancement regarding scholarships.
- Continuing to be in charge of **revision and ordering of organic laboratory manuals** for CHEM2411L, CHEM2455L, and CHEM3422L (2015-current)
- Continuing to **oversee the subscription and/or installation of software** used by the department (Chemdraw, MNova, Gaussian) (S16-current)
- Wrote a **Tech Fee Grant** to fund new PCs for curriculum innovation (F16-17), **\$9,630 FUNDED**.
- Wrote and implemented two **custom organic chemistry lab manuals** for CHEM2411L and CHEM3422L (Summer 2015-). This replaced the publisher's lab manual (\$173) and reduced the cost for student significantly (\$18.25 and \$16.83 per manual).
- **Chair of the Hiring Committee** for the Tenure-Track position in Materials Chemistry- successful hire of Dr. Martin McPhail (F14).
- Wrote a Tech Fee Grant on behalf of the department for the renovation of a student lounge (ACS room, TLC2134) into a computer-enhanced classroom (F15-S16) - Not funded.
- Wrote a Presidential Grant proposal on behalf of the department for ChemDraw site license to supplement the room renovation project (F14) - Not funded
- **Academic Advising** (BS-ACS chemistry students and on-track Fr/So students), F04-S20
- **NMR Liaison** (2009 - present).
 - Serving as a point contact person to contact to and to arrange visits of the consultant, Dr. Shaoxiong Wu (Emory University) to maintain the Varian 400 MHz NMR instrument.
 - Helping students and faculty users with troubleshooting
- **Instrumentation Management** (F16 - present).
 - HPLC: oversaw purchase and installation, being a contact person to Agilent (F18-).
 - GC-MS: overseeing the maintenance and arrangement of consultant (F18-).
 - FT-IR: overseeing the maintenance and purchase of parts (F16-).
- **Library Liaison** (2007 Fall - present).
 - In November-December 2007 I initiated a consortium formation with several other USG institutions

for the full-subscription of all 35 American Chemical Society (ACS) electronic journals. The ACS approved a consortium deal (great discount applied) starting July 2008. The librarians took the issue to the USG level and the USG approved of a **system-wide subscription of all 35 ACS journals**.

- Prepared drawer templates for the freshman chemistry labs (F06)

D. Other Services to Institution and Outreach

- **Judge, West Georgia Regional Science and Engineering Fair** (Judging: 2-9-2018, 2-15-2019, 2-14-2020, 2-5-2021 virtual)
- **Judge, West Georgia Regional Technology Competition** (1-17-2020)
- **Chemistry Demonstrations and Outreach Activities**
 - **“Cool, cooler, coolest”, hands-on activities using ice, dry ice, and liquid nitrogen** brought to Carrollton Junior High School Science Club (12-15-2021)
 - **“School glue bouncy balls” activity table** with Drs. Martin McPhail and Vickie Geisler, and student volunteers at Carroll County Schools’ GYSTC STEM Day, at Carroll County Performing Arts Center (9-13-2021).
 - **“Good-bye to Single-Use Plastics: Edible Water Pods and other Biodegradable Alternatives”** brought to Carrollton Junior High School Trojan University Summer Program (6-29-2021)
 - **“Good-bye to Single-Use Plastics: Edible Water Pods and other Biodegradable Alternatives”** new outreach activity, brought to Carrollton Junior High School 7th Grade Science Club (5-18-2021)
 - **UWG STEM Week:** Performed chemistry demonstrations with Dr. Stuart for approximately 1,800 (May 2-6, 2016), 800 (April 28 – May 4, 2015) and 1300 (April 28 – May 2, 2014) local 8th-graders.
 - **Science Day:** Performed two sessions of chemistry demonstrations with Dr. Stuart for the 8th graders from Chapel Hill Middle School (May 2, 2013)
 - Demonstration show at **Carrollton Middle School** (with Dr. Sharmistha Basu-Dutt), October 5, 2009
 - Demonstration show at **Ithica Elementary School** at Math/Science Night, February 20, 2007
 - Demonstration show at **Douglasville Elementary School** (with Dr. Sharmistha Basu-Dutt), April 2006
- **Mentored high school students to develop science fair projects** through **C2C4** (Care to Collaborate for Science Fair; PI: Dr. Sharmistha Basu-Dutt, 2012-2013) and **REACH** (Research Experience via Active Collaboration with High-schools, PI: Dr. Sharmistha Basu-Dutt), 2011-2012. In C2C4, I directly mentored three high school students and two of them made the following accomplishment:
 - **Natalie Rakoski** (12th grade, Villa Rica) won the 1st place in the regional science fair and proceeded to the **state science fair**, where she was awarded **U.S. Surgeon General Award for Research in Preventative Medicine** along with the 2nd place honors ribbon.
 - **Christopher Stevens** (11th grade, Douglasville) won the second place in the in the regional science fair and proceeded to the **state science fair**, where he was awarded the 4th place honors ribbon.
- Served as an **instructor of IMPACT** (Improving Motivation, Performance and Attitudes of Children and Teachers, PI’s: Dr. Sharmistha Basu-Dutt and Dr. Gail Marshall), coordinated science camps.

Week-long summer science camps:

 - Magical Hogwarts! (Grades 6-8) with Dr. Douglas Stuart, June 27 to July 1, 2011
 - Colorful Concoctions! (Grades 6-8), July 19-23, 2010
 - Colorful Matters! (Grades 3-5), June 21-25, 2010
 - Sound of Music! (Grades 6-8), July 13-17, 2009

One-day science camps:

 - Sound Sensation! (Grades 4-5) January 22, 2011

- Sci-Fi Squad - Harry Potter! (Grades 6-8) December 11, 2010
- Sound of Science! (Grades 6-8) April 17, 2010
- Origametry! (Grades 3-5) December 6, 2009
- Co-taught **UWG 1101** (First Year University Experience) with Dr. Sharmistha Basu-Dutt in F06/07/09/12-16 (Except F07 when I single-taught).
- Served as a **panelist for Science and Faith Panel Discussion**, organized by Dr. Mark Tietjen (English and Philosophy) on October 5, 2010.
- Served as a **panelist to speak of research methods for UWG College of Education Doctoral Seminar**, coordinated by Dr. Hema Ramanathan (November 10, 2007)
- A Day Faculty Solicitor / Captain (2005, 2006, 2007, 2020)

E. Community Services

- Volunteer for **Carroll County CASA (Court-Appointed Special Advocate)** (2016 - 2018): Carried out investigation for the best interest of foster children.
- **Volunteered at a Knox Park Community Garden** as part of Get Healthy Live Well initiative by Tanner Health System, Carrollton, GA for two years (2013- 2014).
- **Guest speaker on Japanese culture** at Inner Harbour Hospital (a specialized psychiatric hospital, intensive residential treatment center for children and youth, ages 6-17), March 17, 2008

Academic Achievement

A. Degrees

Ph.D. in Chemistry: University of Alberta, Edmonton, Canada, 1995 - 2001

Dissertation – Coordination Chemistry of the New Preorganized Polyaryloxy Ligand Tetrakis(2-hydroxyphenyl)ethene Derivatives. Attempts to Create Surface-Models for Classic Ziegler-Natta Olefin Polymerization Catalysts

Advisor – Professor Jeffrey M. Stryker

B.A. in Chemistry: International Christian University, Mitaka, Tokyo, Japan, 1991-1995

Thesis – An Attempt to Synthesize C-glycoside GlcNAc β (1-6C)Gal

Advisor – Professor Akiko Horiuchi

B. Research Position

Post-doctoral research. University of Minnesota, Minneapolis, MN, 2001 - 2004

Project– *Iron Catalysts for Cis-Dihydroxylation and Epoxidation of Olefins by H₂O₂ Inspired by Iron Oxygenases*

Advisor – Professor Lawrence Que, Jr.

C. Honors, Fellowships, Certificates

- University of Alberta Dissertation Fellowship, 2000-2001
- Andrew Stewart Memorial Graduate Prize, University of Alberta, 2000
- Department of Chemistry Graduate Research Assistant Award, University of Alberta, 1997-1998
- Certified to teach high school sciences in Japan, 1995.

Professional Growth

A. Memberships in Professional Organizations

- Member of the American Chemical Society (2003- present)

B. Professional Service

- **Reviewer:** Supramolecular Chemistry (one, 2013-), Tetrahedron Letters (four, 2015-)
- **Reviewer and panelist** for National Science Foundation MRI (Major Research Instrumentation), CHE-NMR (Nuclear Magnetic Resonance) proposals at Washington D.C. (April 28-29, 2011)
- **Reviewer:** National Science Foundation CHE- Inorganic Chemistry Research Grant (November 2005, May 2007, March 2009)

C. Publications

Undergraduate students at UWG are underlined. * Principal Investigator

All publications were *peer-reviewed* except for No.11 (book chapter).

16. **M. Fujita**, * A. M. Kazerouni, J. Bacsa, “Crystal structure of valinomycin-magnesium triflate hexahydrate complex,” *Acta Crystallographica, Section C, Structural Chemistry*, **2016**, C72, 627-633. **Our crystal structure was featured in the cover page.**
15. A. A. Contractor, A. M. Kazerouni, A. R. Michmerhuizen, M. L. Falkenberry, R. Segovia, N. M. Blair, S.-E. Kim, D. A. Vander Griend, J. Bacsa, F. A. Khan, **M. Fujita**,* “The crystal structure of a 1:2 valinomycin:Ca²⁺ complex and the multi-step solution equilibrium in acetonitrile characterized by ¹H NMR, UV-Vis, and mass spectrometry,” Published online on May 18, 2016. DOI 10.1080/10610278.2016.1186276. *Supramolecular Chemistry*, **2017**, 29,
14. J. B. Kimbrell, J. Hite, K. N. Skala, C. M. Crittenden, C. N. Richardson, S. Swamy Mruthinti, **M. Fujita***, F. A. Khan*, “Direct binding of halide ions by valinomycin,” *Supramolecular Chemistry*, **2011**, 23, 782-789.
13. K. N. Skala, K. G. Perkins, A. Ali, R. Kutlik, A. M. Summitt, S. Swamy-Mruthinti, F. A. Khan,* **M. Fujita**,* “Anion and cation binding by a new indole/pyridine/amine-based ion-pair receptor,” *Tetrahedron Letters*, **2010**, 51, 6516-6520.
12. **M. Fujita**,* “Room Temperature Ionic Liquid for Olefin Metathesis: an Undergraduate Laboratory Experiment,” *The Chemical Educator*, **2010**, 15, 376-380.
11. **M. Fujita**,* “Olefin Self-Cross Metathesis in an Ionic Liquid” , a chapter in the book “Experiments in Green and Sustainable Chemistry”, by Herbert W. Roesky, Dietmar Kennepohl (Eds.), WILEY-VCH Verlag GmbH & Co., Weinheim, 2009.
10. **M. Fujita**, Owen C. Lightbody, Michael Ferguson, Robert McDonald, and Jeffrey M. Stryker,* “Quasi-planar Homopolymetallic and Heteropolymetallic Coordination Arrays. Surface-like Molecular Clusters of Magnesium and Aluminum,” *J. Am. Chem. Soc.* **2009**, 131, 4568-4569.
9. R. Mas-Ballesté, **M. Fujita**, L. Que, Jr.*, “High-valent iron-mediated *cis*-hydroxyacetoxylation of olefins,” *Dalton Trans.* **2008**, 1828-1830.
8. R. Mas-Ballesté, **M. Fujita**, C. Hemmila, L. Que, Jr.*, “Bio-Inspired Iron-Catalyzed Olefin Oxidation. Additive Effects on the *cis*-Diol/Epoxide Ratio,” *J. Mol. Catal. A.* **2006**, 251, 49-53.
7. A. Mairata i Payeras, R. Y. N. Ho, **M. Fujita**, L. Que, Jr.*, “The Reaction of [Fe^{II}(tpa)] with H₂O₂ in Acetonitrile and Acetone– Distinct Intermediates and Yet Similar Catalysis,” *Chem. Eur. J.* **2004**, 10, 4944-4953.
6. **M. Fujita**, G. Qi, and J. M. Stryker*, “Selective Synthesis of Partially Etherified Derivatives of Tetrakis(2-hydroxyphenyl)ethene. Controlled pathways to both *E*- and *Z*- isomers of Bis(2-

methoxyphenyl)-bis(2-hydroxyphenyl)ethene and Tris(2-methoxyphenyl)-(2-hydroxyphenyl)ethane," *Org. Lett.* **2004**, *6*, 2653-2656.

5. **M. Fujita**, Lawrence Que, Jr.*, "In situ Formation of Peracetic Acid in Iron-Catalyzed Epoxidations by Hydrogen Peroxide in the Presence of Acetic Acid," *Adv. Synth. Catal.* **2004**, *346*, 190-194.
4. **M. Fujita**, M. Costas, L. Que, Jr.*, "Iron-Catalyzed Olefin *cis*-Dihydroxylation by H₂O₂: Electrophilic and Nucleophilic Mechanism," *J. Am. Chem. Soc.* **2003**, *125*, 9912-9913.
3. **M. Fujita**, H. M. Mah, P. W. M. Sgarbi, M. S. Lall, T. W. Ly, L. M. Browne. "Separation of Acids, Bases and Neutral Compounds. An Interactive Tutorial Program," *J. Chem. Educ.* **2003**, *80*, 107-108. JCE Software, Advanced Chemistry Collection Special Issue 28, 3rd Edition.
2. U. Verkerk, **M. Fujita**, T. Dzwiniel, J. M. Stryker*, "Tetrakis(2-hydroxyphenyl)ethene and Derivatives. A Structurally Preorganized Tetradentate Ligand System for Polymetallic Coordination Chemistry and Catalysis," *J. Am. Chem. Soc.* **2002**, *124*, 9988-9989.
1. J. M. Stryker*, **M. Fujita**, M. Yasuda, U. H. Verkerk, "Substituted Tetraarylethylene Compounds," *Can. Pat. Appl.* **2000**, 47pp.

D. Papers read and abstracts published at National, Regional, State Meetings

(Undergraduate researchers are underlined) († Presenter) (* Principal investigator)

34. **Megumi Fujita**^{†*}, "Student assignment: The most innovative solution to the plastic waste problem," **23rd Annual Green Chemistry & Engineering Conference and 9th International Conference on Green and Sustainable Chemistry**, Reston VA, June 11-13, 2019, *Oral presentation*.
33. Angelah Wilson[†], Jordan Davoll[†], Scott Inthysone, **Megumi Fujita**^{*}, "Effect of substituents on the colorimetric sensing property of indoles," **Emerging Researchers National (ERN) Conference in STEM**, Washington D.C, March 2-4, 2017, *Poster*.
32. Jordan Davoll[†], Angelah Wilson[†], Scott Inthysone[†], **Megumi Fujita**^{*}, "Effect of substituents on the colorimetric sensing property of indoles," **Georgia Undergraduate Research Conference (GURC) 2016**, Milledgeville, GA, November 4-5, 2016, *Oral presentation*.
31. Soyoung K. Alexander[†], Margaret L. Folkenberry **Megumi Fujita**^{*}, Topologies and complex stoichiometries of divalent cation binding to valinomycin, a potassium-selective ion carrier," **Southern Undergraduate Research Conference (SURC) 2015**, Tuscaloosa, AL, February 7, 2015, *Oral presentation*.
30. Nancy A. Doles[†], Nicholas Blair[†], Farooq A. Khan, **Megumi Fujita**^{*}, "UV-Vis titration and mass spectrometry to compare cation binding strength for valinomycin," **Southeastern Regional Meeting of the American Chemical Society (SERMACS) 2014**, Nashville, TN, October 16-19, 2014, *Poster*.
29. Amaan Kazerouni[†], Soyoung Alexander[†], Farooq A. Khan, **Megumi Fujita**^{*}, Binding of divalent cations to valinomycin characterized by NMR and UV-Vis titrations and X-ray crystallography," **Southeastern Regional Meeting of the American Chemical Society (SERMACS) 2014**, Nashville, TN, October 16-19, 2014, *Poster*.
28. Amaan Kazerouni[†], **Megumi Fujita**^{*}, "Revisiting valinomycin: Effect of water on the conformation of valinomycin-cation complexes," **National Conference on Undergraduate Research (NCUR)**, Lexington, KY, April 3-5, 2014, *Oral Presentation*.
27. Soyoung Alexander[†], **Megumi Fujita**^{*}, Indole derivatives and their interaction with cations," **National Conference on Undergraduate Research (NCUR)**, Lexington, KY, April 3-5, 2014, *Poster*.

26. Amaan Kazerouni[†], Alisha Contractor, Farooq A. Khan, **Megumi Fujita**^{*}, “Revisiting valinomycin: Effect of water on the conformation of valinomycin-cation complexes,” **Southeastern Regional Meeting of the American Chemical Society 2013**, Atlanta, GA, November 12-16, 2013, *Poster*.
25. Emmanuel Nanje[†], Soyoung Alexander[†], Aaron Arruda[†], Joanna Denton[†], Farooq A. Khan, **Megumi Fujita**^{*}, Indole derivatives and their interaction with cations,” **Southeastern Regional Meeting of the American Chemical Society 2013**, Atlanta, GA, November 12-16, 2013, *Poster*.
24. Alisha Contractor[†], Christiana Okrah, Farooq A. Khan^{*}, **Megumi Fujita**^{*}, “Spectroscopic/colorimetric studies of a new anion/cation receptor: PAIn,” **National Collegiate Honors Council (NCHC) Conference 2012**, Boston, MA, November 14-18, 2012, *Poster*.
23. Christiana Okrah[†], Alisha Contractor, Farooq A. Khan^{*}, **Megumi Fujita**^{*}, “Spectroscopic/colorimetric studies of a new anion/cation receptor: PAIn,” **Southeastern Regional Meeting of the American Chemical Society 2012**, Raleigh, NC, November 14-17, 2012, *Poster*.
22. Alisha Contractor[†], Kristin N. Skala-Jordan, Farooq A. Khan^{*}, **Megumi Fujita**^{*}, “Spectroscopic studies of a new ion-pair receptor: PAIn,” **244th American Chemical Society National Meeting & Exposition**, Philadelphia, PA, August 19-23, 2012, *Poster*.
21. Alisha Contractor[†], Kristin Skala-Jordan, **Megumi Fujita**^{*}, “Spectroscopic Studies of a New Ion-pair Receptor,” **National Conference on Undergraduate Research (NCUR)**, Ogden, UT, March 28-31, 2012, *Poster*.
20. Alisha Contractor[†], Kristin N. Skala, Farooq A. Khan^{*}, **Megumi Fujita**^{*}, “Cooperative ion-pair binding of an indole-based ion-pair receptor,” **Southeastern Regional Meeting of the American Chemical Society 2011**, Richmond, VA, October 26-29, 2011, *Poster*.
19. Kristin N. Skala, Katelyn G. Perkins, Amna Ali, Farooq A. Khan^{*}, **Megumi Fujita**^{†*}, “Ion-pair binding of a new N,N,NH,NH receptor,” **241st American Chemical Society National Meeting & Exposition**, Anaheim, CA, March 27-31, 2011, *Poster*.
18. **M. Fujita**^{†*}, “Green Chemistry Lab and Course for Undergraduate Chemistry Majors,” **The Southeastern Regional Meeting of the American Chemical Society 2009**, San Juan, PR, October 21-25, 2009, *Oral Presentation*.
17. J. Stubblefield[†], **M. Fujita**^{*}, “Metal Complexation of New Dibenzofuran-Based Ligands,” **The Southeastern Regional Meeting of the American Chemical Society 2008**, Nashville, TN, November 12-15, 2008, *Poster*.
16. A. Ali[†], **M. Fujita**^{*}, “Synthesis of new transition metal catalysts for ‘green’ oxidation with N₂O,” **National Conference on Undergraduate Research (NCUR)**, Salisbury, MD, April 10-12, 2008. *Student Oral Presentation*.
15. **M. Fujita**^{†*}, D. Foster, K. Perkins, A. Ali, A. Summitt, J. Stubblefield, “New Family of Tridentate and Tetradentate Ligands with Indole, Dibenzofuran and Dibenzothiophene as Donor Groups,” **235th ACS National Meeting & Exposition**, New Orleans, LA, April 6-10, 2008, *Poster*.
14. A. Ali[†], A. Summitt[†], K. Perkins, **M. Fujita**^{*}, “New Indole-based Tetradentate and Tridentate Ligands and Their Metal Complexes,” **The Southeastern Regional Meeting of the American Chemical Society 2007**, Greenville, SC October 24-27, 2007, *Poster*.
13. K. Perkins[†], A. Ali, **M. Fujita**^{*}, “New Indole-based Tetradentate and Tridentate Ligands and Their Complexes,” **234th ACS National Meeting**, Boston, MA August 19-23, 2007, *Poster*.
12. D. Foster[†], **M. Fujita**^{*}, “New Tripodal Dibenzofuranyl Ligands and Their Reactivity With Metal Ions,” **234th ACS National Meeting**, Boston, MA August 19-23, 2007, *Poster*.

11. D. Foster,[†] J. Erler,[†] **M. Fujita**,* “Transition metal catalysts for environmentally benign oxidation of organic compound by N₂O,” **233rd ACS National Meeting**, Chicago, IL March 25-29, 2007, *Poster*.
10. **M. Fujita**,^{†*} “Olefin oxidation by H₂O₂ catalyzed by non-heme iron model complexes,” **The Southeastern Regional Meeting of the American Chemical Society 2006**, Augusta, GA November 1-4, 2006, *Invited talk*.
9. **M. Fujita**,* A. M. Ribera,[†] D. C. Maybern,[†] R. M. Kelly,[†] R. Kutlik, C. Knight, Y. F. Chan, S. Reddig, I. Batishchev, “Progress towards transition metal catalysts for environmentally benign oxidation of organic substrates,” **231th ACS National Meeting**, Atlanta, GA March 26-30, 2006, *Poster*.
8. **M. Fujita**,* D. C. Maybern,[†] B. Lord, A. Ali,[†] A. M. Ribera,[†] B. Cox, S. Reddig, R. Kutlik, C. Knight, “Toward catalysts for environmentally benign oxidation of organic substrates by N₂O,” **231th ACS National Meeting**, Atlanta, GA March 26-30, 2006, *Poster*.
7. **M. Fujita**,[†] L. Que, Jr.*, “Bio-inspired Iron Catalysts for Alkene *cis*-Dihydroxylation by Hydrogen Peroxide: Mechanisms of Peroxide Activation and Alkene Dioxygenation,” **227th ACS National Meeting**, Anaheim, CA March 28-April 1, 2004, *Poster*.
6. **M. Fujita**, R. McDonald, J. M. Stryker*,[†] “Ethylene Activation the Old-fashioned Way: Modeling the Active-site Coordination Sphere of Supported Heteropolymetallic Ethylene Polymerization Catalysts,” Symposium on Small Molecule Activation by Early Transition Metals, 39th IUPAC International Congress/86th Conference of the CSC, Ottawa, August, 2003, *Invited talk*.
5. **M. Fujita**, U. Verkerk, T. Dzwiniel, G. Qi, R. McDonald, J. M. Stryker*,[†] “Polymetallic Coordination Chemistry of Tetrakis(2-hydroxyphenyl)ethylene Ligand Systems. Modelling Heterogeneous Supported Ziegler-Natta Catalysts,” Hiroshima University, Department of Polymer Chemistry, May, 2003, *Invited talk*.
4. **M. Fujita**, M. Costas, L. Que, Jr.*, “Iron-Catalyzed Olefin *cis*-Dihydroxylation by H₂O₂: Electrophilic and Nucleophilic Mechanisms,” **Gordon Research Conference, Inorganic Reaction Mechanisms**, Ventura, CA, February 16-20, 2003, *Poster*.
3. **M. Fujita**, U. Verkerk, T. Dzwiniel, G. Qi, R. McDonald, J. M. Stryker*,[†] “Polymetallic Coordination Chemistry of Tetrakis(2-hydroxyphenyl)ethylene Ligand Systems. Modeling Heterogeneous Supported Ziegler-Natta Catalysts,” Los Alamos National Laboratory, December, 2002. *Invited Talk*.
2. **M. Fujita**,[†] K. Chen, M. Costas, L. Que, Jr.*, “Two Faces of Olefin Oxidation Catalysis by Non-heme Iron Complexes. Electrophilic and Nucleophilic *cis*-Dihydroxylation Catalysts,” **Great Lakes Regional Meeting of the American Chemical Society**, Minneapolis, MN, June 2-4, 2002, *Poster*.
1. L. M. Browne,*[†] **M. Fujita**, P. B. Tiege, J. F. Caplan, and H. M. Mah, “Integrating Multimedia into the Organic Lab Curriculum,” *Invited oral presentation*. **Pacificchem 2000 Congress**, Symposium 207, Honolulu, HI December 15-19, 2000. *Invited oral presentation*.

E. Other National, Regional, State Meetings Attended

2. **Gordon Research Conference, Organometallic Chemistry**, Newport, RI, July 10-15, 2005, *Attendee*.
1. **229th ACS National Meeting**, San Diego, CA March 13-17, 2005, *Attendee*.

F. Funding

(i) External grants, funded or pending

<u>Funding Agency</u>	<u>Amount</u>	<u>Period</u>
4. Affordable Learning Georgia Textbook Transformation Grant	\$10,800	2020.07- 2021.06

PI: Megumi Fujita, co-PIs: Victoria Geisler and Partha Ray

Adopting a no-cost textbook for Organic Chemistry I and II and creating no-cost online homework at UWG

3. National Science Foundation, Research in Undergraduate Institutions (RUI) \$29,473 2014
Research Opportunity Award (ROA) Award No. 1310402*

Primary Author: Megumi Fujita (visiting researcher)

PI/summer research host: Dr. Douglas Vander Griend (Calvin College, Grand Rapids, MI)

Characterizing new indole-containing cation sensors with equilibrium-restricted factor analysis: a summer research visit

*This funding was provided as a supplemental grant to Dr. Vander Griend's NSF RUI grant (Grant No. 1310402)

2. National Science Foundation, Major Research Instrumentation Grant \$344,325 2009-2012
Award No. 0821504

PI: Megumi Fujita, co-PIs: Partha S. Ray; Spencer J. Slattery, Victoria Geisler

Acquisition of a 400 MHz NMR Spectrometer to Enhance Faculty and Undergraduate Research and Chemical Education at the University of West Georgia

1. American Chemical Society, Petroleum Research Fund Type G, **Funded** \$35,000 2006-2009
Proposal: Development of Transition Metal Catalysts for Selective and Environmentally Clean Oxidation of Hydrocarbons by N₂O

(ii) External grants, not funded

- | <u>Funding Agency</u> | <u>Amount</u> | <u>Submitted</u> |
|---|---------------|------------------|
| 11. National Science Foundation, Research in Undergraduate Institutions
<i>RUI: Synthesis of indole-based colorimetric sensors for metal ions</i> | \$319,872 | October 2016 |
| 10. National Science Foundation, Research in Undergraduate Institutions
<i>RUI: New carbazole-based ion-pair receptors and ligands for asymmetric catalysis</i> | \$297,063 | November 2011 |
| 9. American Chemical Society, Petroleum Research Fund UR
<i>New carbazole-based receptors/ligands for ion-pair binding, coordination chemistry, and catalysis</i> | \$65,000 | March 2011 |
| 8. National Science Foundation, Faculty Early Career Development (CAREER) Program
<i>CAREER: New carbazole-based receptors/ligands for ion-pair binding, coordination chemistry and catalysis, and greening chemistry education at UWG</i> | \$412,038 | July 2010 |
| 7. American Chemical Society Petroleum Research Fund, Undergraduate (ACS-PRF, UR), <i>Proposal: Carbazole Coordination Chemistry: Chiral Mononuclear Complexes, dinuclear Complexes on a Preorganized Framework, and Coordination Polymers</i>
*Proposal was not reviewed because previous PRF grant was still active | \$65,000 | Feb. 2009 |
| 6. National Science Foundation, Major Research Instrumentation Grant, | \$386,500 | Jan. 2007 |

PI: Partha S. Ray; Investigators: **Megumi Fujita**, Spencer J. Slattery, Victoria J. Geisler
Acquisition of a 400 MHz NMR Spectrometer to Enhance Undergraduate Chemical Research

- | | | | |
|----|--|-----------|-----------|
| 5. | Research Corporation, Cottrell College Science Award
<i>Proposal: Homogeneous Catalysts for Selective Oxidation of Organic Compounds with N₂O</i> | \$46,861 | May 2006 |
| 4. | National Science Foundation, Major Research Instrumentation Grant
PI: Partha S. Ray; Investigators: Megumi Fujita , Spencer J. Slattery, Victoria J. Geisler, Andrew J. Leavitt
<i>Acquisition of a 300 MHz NMR Spectrometer to Enhance Undergraduate Chemical Research</i> | \$393,000 | Jan. 2006 |
| 3. | Research Corporation, Cottrell College Science Award
<i>Proposal: Homogeneous Catalysts for Selective Oxidation of Organic Compounds with N₂O</i> | \$46,861 | May 2005 |
| 2. | National Science Foundation, Major Research Instrumentation Grant
PI: Gigi B. Ray; Co-PI: Partha S. Ray, Investigators: Megumi Fujita , Spencer J. Slattery, Victoria J. Geisler, Andrew J. Leavitt
<i>Acquisition of a 300 MHz NMR Spectrometer to Enhance Undergraduate Chemical Research</i> | \$321,850 | Jan. 2005 |
| 1. | Camille and Henry Dreyfus Foundation Start-up Award
<i>Proposal: Development of Transition Metal Catalysts for Selective and Environmentally Clean Oxidation of Hydrocarbons by N₂O</i> | \$50,000 | May 2004 |

(iii) Internal Grants, Funded

<u>Grant</u>	<u>Amount</u>	<u>Grant Period</u>
52. Student Research Assistant Program Grant (SRAP) <i>(1) Polymer additive analysis using HPLC and (2) Sustainable chemical synthesis in supercritical carbon dioxide</i>	\$1,536	2019-2020
51. COSM Faculty Research Grant (COSM FRG) <i>Enzyme-catalyzed organic synthesis reactions in supercritical carbon dioxide</i>	\$1,800	2019-2020
50. VPAA Faculty Research Grant <i>High Performance Liquid Chromatography (HPLC): new analytical instrument to benefit student training, faculty research, and outreach</i>	\$5,000	2019-2020
49. Summer REU (Faculty mentor for Xeniah Sillie, Recipient) <i>Analysis of amino acids in soy sauce and alternatives</i>	\$5,000	2019 summer
48. Summer SRAP <i>Analysis of amino acids in food</i>	\$1,680	2019 summer
47. VPAA Faculty Research Grant *voluntarily relinquished due to funding made available from year-end money <i>Green chemistry research using supercritical carbon dioxide</i>	\$5,000*	2018-2019
46. COSM Faculty Research Grant (COSM FRG) <i>New research direction: supercritical carbon dioxide for green chemistry</i>	\$1,500	2018-2019
45. Student Research Assistant Program Grant (SRAP) <i>Green chemistry research using supercritical carbon dioxide</i>	\$1,450	2018-2019
44. COSM Faculty Research Grant (COSM FRG) <i>Synthesis of pyridine-tethered 2,3-fused indoles as new colorimetric sensors</i>	\$1,400	2017-2018
43. Student Research Assistant Program Grant (SRAP) <i>Synthesis of pyridine-tethered 2,3-fused indoles as new colorimetric sensors</i>	\$1,475	2017-2018

42.	UWG SEEP Undergraduate Research and Mentoring Program <i>NMR Spectroscopic Titration Studies of Antibiotic Monensin A</i>	\$1,700	2016-2017
41.	COSM Faculty Research Grant (COSM FRG) <i>Synthesis of indole-tethered macroazacycles as size-selective cation sensors</i>	\$1,400	2016-2017
40.	Student Research Assistant Program Grant (SRAP) <i>Synthesis and testing of new design of colorimetric ion sensors</i>	\$1,475	2016-2017
39.	Student Research Assistant Program Grant (SRAP) <i>Indole-pyridine couples as metal ion sensors</i>	\$1,700	2015-2016
38.	UWise, Undergraduate Research Grant <i>Indole-pyridine couples as metal ion sensors</i>	\$5,000	2015-2016
37.	ORSP Faculty Research Grant (FRG) <i>Indole-Pyridine Couples as Metal Ion Sensors</i>	\$5,000	2015-2016
36.	COSM Faculty Research Grant (COSM FRG) <i>Natural and synthetic cation receptors: Application of NMR and UV-Vis titration to study complex ion-binding equilibria</i>	\$1,250	2014-2015
35.	UWise, Undergraduate Research Grant <i>Natural and synthetic cation receptors: Application of NMR and UV-Vis titration to study complex ion-binding equilibria</i>	\$5,000	2014-2015
34.	Student Research Assistant Program Grant (SRAP) <i>Development of new indole-based cation sensors</i>	\$1,800	2014-2015
33.	UWise, Undergraduate Research Grant <i>Colorimetric studies of indole-cation interaction and synthesis of new indole-containing cation receptor</i>	\$4,800	Spring 2014
32.	COSM Faculty Research Grant (COSM FRG) <i>A molecular compound with two purposes: a synthetic ion-pair receptor and a ligand for metal catalysts</i>	\$1,250	2013-2014
31.	Student Research Assistant Program Grant (SRAP) <i>From ion-pair receptor to amino-acid sensors: Toward a practical application</i>	\$2,000	2013-2014
30.	ORSP Internal Development Grant (IDG) <i>From ion-pair receptor to amino-acid sensors: Toward a practical application</i>	\$7,447	Spring 2013 -Summer 2013
29.	UWise, Undergraduate Research Grant <i>Spectroscopic and computational studies of a synthetic ion-pair receptor</i>	\$7,600	Spring 2013
28.	COSM Grant Development Initiative <i>Chemical recycling of polystyrene</i>	\$2,000	2012-2013
27.	Student Research Assistant Program Grant (SRAP) <i>Spectroscopic analysis of new ion-pair receptors</i>	\$2,000	2012-2013
26.	COSM Faculty Research Grant (COSM FRG) <i>A molecular compound with two purposes: a synthetic ion-pair receptor and a ligand for metal catalysts</i>	\$1,500	2012-2013
25.	Student Research Assistant Program Grant (SRAP) <i>Synthetic optimization of a newly designed ion-pair receptor</i>	\$2,000	2011-2012
24.	Faculty Research Grant (FRG) <i>Synthetic optimization of a newly designed ion-pair receptor</i>	\$2,000	2011-2012
23.	Faculty Research Enhancement Award (FREA, SOFREA)	\$1,451	2010-2011

Synthesis of New Indolocarbazole Derivatives as Ligands for Dinuclear Metallic Complexes

22.	Faculty Research Grant (FRG) <i>Cation AND Anion Binding Studies with New "Ambi-Receptor" Molecules</i>	\$1,500	2010-2011
21.	College of Arts and Sciences Faculty Teaching Innovation Grant <i>Incorporating Green Chemistry into Chemistry Education</i>	\$ 500	2010
20.	Faculty Research Enhancement Award (FREA, SOFREA) <i>Synthesis of New Indolocarbazole Derivatives as Ligands for Dinuclear Metallic Complexes and Coordination Polymers</i>	\$2,500	2009-2010
19.	Faculty Research Grant (FRG) <i>Exploration of New Carbazole Chemistry</i>	\$1,500	2009-2010
18.	Student Research Assistant Program Grant (SRAP) <i>New Carbazole Coordination Chemistry: Synthesis of New Ligands for Chiral Metal Complexes</i>	\$2,100	2009-2010
17.	Faculty Research Enhancement Award (FREA, SOFREA) <i>Design and development of new molybdenum complexes to mimic active sites of mononuclear molybdenum enzymes</i>	\$2,800	2008-2009
16.	Faculty Research Grant (FRG) <i>"Green" Oxidation Catalysts: Preparation of Novel Metal Complexes and Their Catalysis Testing for Oxidation of Hydrocarbons by Nitrous Oxide</i>	\$1,450	2008-2009
15.	Student Research Assistant Program Grant (SRAP) <i>Development of Transition Metal Catalysts for Small Molecule Activation and Useful Application</i>	\$2,100	2008-2009
14.	Tech Fee Funds <i>Video camera for chemistry classroom demonstration</i>	\$1,200	2007-2008
13.	Faculty Research Grant (FRG) <i>Catalysts for Environmentally Benign Oxidation Reactions by Nitrous Oxide</i>	\$1,500	2007-2008
12.	Student Research Assistant Program Grant (SRAP) Project 1 <i>Development of New Alkene Polymerization Catalysts</i>	\$2,100	2007-2008
11.	Student Research Assistant Program Grant (SRAP) Project 2 <i>Catalysts for Environmentally Benign Organic oxidation Reactions by Nitrous Oxide</i>	\$2,100	2007-2008
10.	Faculty Research Grant (FRG) <i>Catalysts for Environmentally Benign Oxidation Reactions by Nitrous Oxide</i>	\$1,500	2006-2007
9.	Student Research Assistant Program Grant (SRAP) <i>Catalysts for Environmentally Benign Organic Oxidation Reactions by Nitrous Oxide</i>	\$2,100	2006-2007
8.	Faculty Research Enhancement Award (FREA, SOFREA) <i>Development of Oxidation Catalysts by "Green" Oxidant N₂O</i>	\$3,000	2006-2007
7.	Faculty Research Grant (FRG) <i>Bio-inspired Transition Metal Catalysts for Environmentally Benign Organic Oxidation Reactions</i>	\$1,500	2005-2006
6.	Student Research Assistant Program Grant (SRAP) <i>Bio-inspired Transition Metal Catalysts for environmentally Benign Organic Oxidation Reactions</i>	\$1,950	2005-2006
5.	Faculty Research Enhancement Award (FREA, SOFREA)	\$975	2005-2006

Transition Metal Catalysts for Organic Oxidation Reactions with Environmentally Benign Oxidant N₂O

4.	Student Research Assistant Program Grant (SRAP) <i>Utilizing Dioxygen in Organic Oxidation Reactions: Biomimetic Catalysts Modeled After Iron-Containing Enzymes</i>	\$1,950	2004-2005
3.	Faculty Research Enhancement Award (FREA, SOFREA) <i>Development of Bio-inspired Aerobic Oxidation Catalysts with Co-reductant Approaches</i>	\$2,685	2004-2005
2.	Center for Teaching and Learning Laptop Computer Project	Dell Laptop	2004-2005
1.	Start-up Funds	\$30,000	2004-2005

G. Other Research Enhancement

- Summer visiting research at Calvin College (research host: Dr. Douglas Vander Griend) for two months (June and July 2014); learned new UV-Vis titration technique and use of the Matlab-based data analysis program “SIVVU™” developed by Dr. Vander Griend. Funded by NSF RUI Research Opportunity Award.
- NSF-GEMS Summer Research 2007: Supervised one student (Addie Summitt) for 8 weeks; faculty research fund/stipend of \$1,000 was provided.
- NSF-GEMS Summer Research 2006: Supervised one student (Katelyn Perkins) for 8 weeks; faculty research fund of \$1,000 was provided.
- NSF-REU Summer Research 2005: Supervised one UWG student (Ivan Batishchev) and one external student (Robert Kutlik) for 8 weeks; faculty stipend was provided.

H. Professional Development Workshops and Activities

- Attended **HIP-Aligned Faculty Course Design Institute workshop**, hosted by CTL at UWG, June 2021 (six sessions)
- Attended **LSAMP Mentoring training workshop**, March 17, 2021.
- Attended **AACU Institute on Integrative Learning and Signature Work** at Emory University, July 16-19, 2019.
- Attended **NSF RUI Grant Writing Workshop**, sponsored by UWG and Georgia College, Rock Eagle 4H Center on October 14-16, 2016.
- Attended **GAIN Symposium** (Georgia Inorganic Symposium) at Emory University on August 1, 2015.
- Completed the **faculty cohort training for online instruction** which also included an introduction to the new learning management system Desire 2 Learn (D2L). As a result I was awarded the designation of **Certified Online Instructor**. Professional development money of \$1000 was provided upon completion. Summer & Fall 2012.
- **M. Fujita** and S. Swamy-Mruthinti, “NSF Major Research Instrument (MRI) Grant: What Worked and What Didn’t,” **The Regional STEM Institute: Engaging the STEM Student In and Out of the Classroom**, Carrollton, GA, February 19-20, 2010, **Oral Presentation**.
- F. A. Khan, **M. Fujita** and S. Swamy-Mruthinti, **The Regional STEM Institute: Engaging the STEM Student In and Out of the Classroom**, Carrollton, GA, February 19-20, 2010, **Grant Focus Group leader**.

- NSF-GEMS Faculty Development Workshop: Inquiry in Science and Education, College of Arts and Sciences, University of West Georgia, Carrollton, GA, February 25-26, 2005, Attendee.
- Balanced Academic Life: Careers at Predominantly Undergraduate Institutions, A Workshop for Future Chemistry and Biochemistry Faculty. Minneapolis, September 6, 2003, Attendee.
- Preparing Future Faculty Retreat, held by Teaching Learning Services, University of Minnesota, Twin Cities. Minneapolis, January 16, 2002, Attendee.
- University of Minnesota Chemistry Outreach, Demonstration at Minnesota State Fair, August 2002, Volunteer performer.

I. Awards and Recognitions

- 2017 Community Award (University of West Georgia) for efforts in developing and teaching a Green Chemistry course.
- 2015-2016 Excellence in Research Award (College of Science and Mathematics, University of West Georgia) in recognition of outstanding contributions in scholarship.