

Deborah C. Bromfield Lee
Associate Professor of Chemistry

Florida Southern College, Department of Chemistry, Biochemistry and Physics
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EDUCATION

Ph.D., Chemistry; North Carolina State University 2005-2009
Emphasis on Chemical Education (General and Organic Chemistry)
Raleigh, North Carolina
Advisor: Dr. Maria T. Oliver-Hoyo

M.S., Chemistry; Florida Atlantic University, Boca Raton, Florida 2002-2005
Emphasis on Organic Synthesis
Advisor: Dr. Salvatore D. Lepore

B.A. *cum laude*, Chemistry, Pre-medical sciences (minor); 1999- 2002
University of South Florida, Tampa, Florida
Advisor: Dr. Joseph Stanko

TEACHING EXPERIENCE

Florida Southern College - Associate Professor (2018-present)

- Chemistry, Biochemistry and Society, CHE 1110
- Chemistry of Food and Cooking Lecture, CHE 1005
- Chemistry of Food and Cooking Lab, CHE 1005
- Chemistry, Biochemistry and Society, CHE 1110
- Organic Chemistry Lecture I and II, CHE 2231 and 2232
- Organic Chemistry Laboratory I and II, CHE 2251 and 2252 (including majors only sections)
- Organic Chemistry Laboratory II for Majors, CHE 2254
- Medicinal Chemistry, CHE 3330
- Honor's Thesis, HON 4955 and 4956

Florida Southern College - Assistant Professor (2012- 2018)

- Introductory Chemistry, CHE 1000
- Introduction to General, Organic, and Biochemistry CHE 1012
- Introduction to Organic and Biochemistry and Laboratory, CHE 1015 and CHE 1015L
- Chemistry, Biochemistry and the Community, CHE 1110
- Organic Chemistry Lecture and Lab I and II, CHE 2221 and 2222 (including majors only lab sections)
- Independent Study: Introduction to Organic Synthesis and Modelling – CHE 3993
- Independent Study: Development of Chemical Education Models – CHE 3993

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- Independent Study: Application of Chemical Molecule Modelling – CHE 3994
- Honor's Research, HON 3955 and 3956
- Honor's Thesis, HON 4955 and 4956
- Introduction to Research Methods, CHE 4100
- Medicinal Chemistry, CHE 4425
- Senior Research, CHE 4999
- ALEKS, FSC 1997

Kennesaw State University, Kennesaw GA - Lecturer (2012)

- Organic Chemistry Laboratory II, CHEM 3362L (2012)
- Survey of Chemistry I (Chemistry for Nursing majors), CHEM 1151L (2012)
- Directed Applied Research, CHEM 4100 (2012).

Kennesaw State University, Kennesaw GA - Visiting Assistant Professor (2010-2012, 2 year term non-renewal position)

- General Chemistry I and II, CHM 1211 and 1212 (2010-2012)
- Teaching of Chemistry, CHED 4416 and 6416 (2010 - 2012)
- Teaching of Chemistry (6-12) Practicum (15 graduate students and 3 undergraduates students), CHED 4417 and 6417 (2010 - 2012)
- Teaching & Learning of Chemistry, CHEM 3400 and 5400 (2011)
- Teach of Chemistry (6-12) Practicum II (4 graduate and 1 undergraduate students), CHED 6475 (2011-2012)
- Organic Chemistry Laboratory I and II, CHEM 3361L and 3362L (2011-2012)
- Survey of Chemistry II Laboratory (Organic Chemistry and Biochemistry for Nursing majors), CHEM 1152L (2011)
- Directed Applied Research, CHEM 4100 (2011).

Elon University, Elon, NC - Visiting Assistant Professor (2009-2010, 1 year non-renewal position)

- General Chemistry I and II course and laboratory, CHM 111, 112 and 113 (2009 -2010)
- Kitchen Chemistry course CHM 172 (2010, course proposed and developed by instructor)
- Modification and implementation of changes to CHM 113 pre and post laboratory questions.
- Assist with the development of the rubric for senior chemistry student seminar.

North Carolina State University, Raleigh, North Carolina - Graduate Student (2005- 2009)

- Assisting in Organic Chemistry I & II SCALE-UP Lecture class (2008)
- Sensorial experiments in General and Organic chemistry laboratories (2006-2008)
- SCALE-UP General Chemistry I for Majors, Teaching Assistant (2005)
- Mentored and supervising research projects of four undergraduate students and one graduate student (2006-2009)

Florida Atlantic University, Boca Raton, Florida - Graduate Student (2002- 2005)

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- Trained and supervised a doctoral student (2005)
- Organic Chemistry I Recitation/Lab Coordinator's and Teaching Assistant (2004)
- Organic Chemistry I and II Lab Recitation Teaching Assistant (2003- 2004)
- General Chemistry II Lab Teaching Assistant (2002)

RESEARCH EXPERIENCE

Chemical Education and Organic Synthesis, Associate Professor, Florida Southern College

- Synthesis of small biologically relevant molecules and implementation of some of the methods into the teaching lab.
- Development of models for teaching chemistry concepts and evaluating students understanding of models.
- Development of greener synthetic strategies.
- Development and evaluation of electronic notebooks and lab report writing strategies

Chemical Education and Organic Synthesis, Assistant Professor, Florida Southern College

- Further development and implementation of lecture-based sensorial class activities. Explore and evaluate the results of the studies.
- Study of students conceptual understanding in general and organic chemistry using tangible models and engaged activities.
- Development of greener synthetic strategies.
- Development and evaluation of electronic notebooks and lab report writing strategies.

Chemical Education, Visiting Assistant Professor and Lecturer, Kennesaw State University

- Further development and implementation of lecture-based sensorial class activities. Explore and evaluate the results of the studies.
- Exploration into the mechanism of the commonly used cobalt chloride and aqua complexes and make comparison to other chloride and aqua metal complexes.
- Study of students conceptual understanding in general and organic chemistry.

Chemical Education, Visiting Assistant Professor, Elon University

- Development and implementation of lecture sensorial class activities. *Sensorial class activities* rely on multiple or different senses to make quantitative determinations to explore and reinforce in-class material.
- Assessment of students' metacognitive and self-thinking systems in General Chemistry using Webassign homework system.

Chemical Education, Research Assistant, North Carolina State University

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- Development and implementation of sensorial experiments in undergraduate laboratories, primarily organic chemistry laboratories.
Sensorial experiments rely on multiple or different senses to make quantitative determinations in the laboratory to replace or used in addition to traditional experiments.
- Involves manipulation of the chemistry in order to produce experiments that are precise, reproducible, adaptable, and safe experiments.
- Incorporate inquiry-based exploration for investigative type experiments and promote collaborative group work.
- Development of assessments to evaluate conceptual understanding of the materials and interventions for the misconceptions.

Organic Synthesis, Graduate Assistant, Florida Atlantic University

- Development of a novel Diels-Alder reaction involving allenyl carbonyls as heterodienes to be applied toward the total synthesis of an iridoid natural product.
- Studies on the manganese-mediated isomerization of alkynyl carbonyls to allenyl carbonyls, which can then be used to obtain a variety of allenyl carbonyls for the use in Diels-Alder reactions.

OTHER WORK EXPERIENCE

University of South Florida Grant External Evaluator 2014

- Review goals of the grants and the results
- Judge posters of the REU students
- Interview students involved in the grant
- Write a report to summarize the result of the grant.

Webassign Tutorial Author 2013

- Write tutorials for Organic Content
- Edit and Revise already developed tutorials

Organic Chemist, Custom Synthesis Incorporated, Delray Beach, Florida 2005

- Synthesis and characterization of organic molecules for clients.
- Research chemicals for and assist in development of synthetic route of organic compounds.

Research Associate (Organic) - Dr. Lepore Group; Florida Atlantic University, Boca Raton, Florida 2005

- Further studies on the manganese-mediated isomerization of alkynyl carbonyls to allenyl carbonyls as developed during master's degree.

PUBLICATIONS

Deborah C. D. Bromfield Lee

Deborah C. Bromfield Lee, Engaging Organic Students in the Message and Limitation of Models; ACS publication Volume: 1378: Engaging Students in Organic Chemistry. pages 37-58. Editors Barbara Murray and Patricia J. Kreke. **2021**; DOI:10.1021/bk-2021-1378.ch004

Deborah C. Bromfield Lee and Grace A. Beggs, Tactile Models for the Visualization, Conceptualization, and Review of Intermolecular Forces in the College Chemistry Classroom, *Journal of Chemical Education* **2021** 98 (4), 1328-1334. DOI: 10.1021/acs.jchemed.0c00460

Bromfield Lee, D. Re-Casting Traditional Organic Experiments into Green Guided-Inquiry Based Experiments: Student Perceptions" *Green Chemistry Letters and Review*, 12 (2), 107-116, **2019**. DOI: 10.1080/17518253.2019.1609598

Bromfield Lee, D. C. Implementation and Student Perceptions on Google Docs as an Electronic Laboratory Notebook in Organic Chemistry, **2018**, 95 (7), 1102-1111. DOI: 10.1021/acs.jchemed.7b00518

Bromfield Lee, D. C. Le, An-Phong, Undergraduate Research at Florida Southern College, Senior undergraduate research and assessment at Florida Southern College. In Best Practices for Supporting and Expanding Undergraduate Research in Chemistry; ACS Symposium Series Vol 1275; Chapter 19, pp 311-333, American Chemical Society: Washington, DC, **2018**. DOI: 10.1021/bk-2018-1275.ch019.

Oliver-Hoyo, M. T.; Bromfield Lee, D. C. Multi-sensory Chemical Equilibrium Investigation: A Learning Lab Report, *Chemical Educator*, **2010**, 15, 181-184.

Bromfield-Lee, D. C.; Oliver-Hoyo, M. T. Esterification Kinetics Experiment that Relies on the Sense of Smell, *J. Chem. Educ.* **2009**, 86, 82.

Hasan, S.; Bromfield-Lee, D.; Oliver-Hoyo, M. T.; Cintron-Maldonado, J. A. Using Laboratory Chemicals to Mock Illicit Drugs in a Forensic Chemistry Activity; *J. Chem. Educ.* **2008**, 85, 813.

Bromfield-Lee, D. C.; Oliver-Hoyo, M. T. A Qualitative Organic Analysis That Exploits the Senses of Smell, Touch and Sound; *J. Chem. Educ.* **2007**, 84, 1976.

Silvestri, M. A.; Bromfield, D. C.; Lepore, S. D.; Michael-Stork Addition of Cyclopentyl Enamine to Allenyl Ketones and Esters, *J. Org. Chem.*, **2005**; 70(20); 8239-8241.

Lepore, S. D.; Khoram, A.; Bromfield, D. C.; Cohn, P.; Jairaj, V.; Silvestri, M. A.; Studies on the Manganese-Mediated Isomerization of Alkynyl Carbonyls to Allenyl Carbonyls, *J. Org. Chem.*, **2005**; 70(18); 7443-7446.

PRESENTATIONS

Isabel Augustine, Deborah Bromfield Lee, Green Chemistry in the Organic Lab: Evaluation of the Aldol Condensation, Florida Undergraduate Research Conference, February 20th 2021.

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Candace Metcalf, Deborah Bromfield Lee, Greener Synthesis and Examination of a Series of Pyrano[3,2-c] quinoline Analogues as Novel Anticancer Agents, Florida Undergraduate Research Conference, February 20th 2021.

Korinne Mills, Deborah Bromfield Lee, The Implementation of a Spartan Model's Effect on Students' Overall Understanding of Esterification Reactions, Florida Undergraduate Research Conference, February 20th 2021.

Alanya Nardone, Deborah Bromfield Lee, The Green Synthesis and Evaluation of isoindolinyl moiety variations exhibiting anti-cancer properties, Florida Undergraduate Research Conference, February 20th 2021.

Carrie Ann Hall, Deborah C. Bromfield Lee, A Campus Wide Quality Enhancement Plan to Connect Undergraduate Research into the Curriculum, CUR Virtual Biennial Conference, June 29th – July 1st 2021.

Deborah C. Bromfield Lee, Carrie Ann Hall, Assessing Research Across the Curriculum at Florida Southern College, CUR Virtual Biennial Conference, June 29th – July 1st 2021.

Engaging organic students in the message and limitations of models . Deborah Bromfield-Lee(1). 2020 Biennial Conference on Chemical Education. Abstract accepted March 31, 2020. Because of the global COVID-19 pandemic, the 2020 Biennial Conference on Chemical Education was terminated on April 2, 2020, by the Executive Committee of the Division of Chemical Education, American Chemical Society; and, therefore, this presentation could not be given as intended.

Deborah C. Bromfield Lee, Engaging students in green chemistry and sustainability in coursework, projects and outreach, Submission April 30th, 2020. <https://doi.org/10.1021/scimeetings.0c04842>

Deborah C. Bromfield Lee, Application of Green Chemistry to Undergraduate Research Projects Southeastern University, Lakeland FL, *February 20th, 2020*. (Invited - Oral)

Deborah C. Bromfield Lee, An Inquiry-based Esterification Experiment - using Computational Data to Justify Experimental Data, Florida Annual Meeting and Exposition, Palm Harbor, Florida, May 11th, 2019. (Oral)

Daniel Bolding, Deborah C. Bromfield Lee, Green synthesis of cholic acid derivatives as novel antimicrobials., to be given at 257th American Chemical Society National Meeting, Orlando, FL, *April 2019*. (Poster)

Nicole Glatz, Deborah C. Bromfield Lee, Toward the Synthesis of Stachybotrin D - a Potential Anti-HIV Drugs, to be given at 257th American Chemical Society National Meeting, Orlando, FL, *April 2019*. (Poster)

Luka Planinc, Deborah C. Bromfield Lee, Design, synthesis, and biological evaluation of isoindolinyl moieties, to be given at 257th American Chemical Society National Meeting, Orlando, FL, *April 2019*. (Poster)

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Amanda Wagler, Deborah C. Bromfield Lee, Extraction, purification, and characterization of a possible Prodigiosin, to be given at 257th American Chemical Society National Meeting, Orlando, FL, *April 2019*. (Poster)

Deborah C. Bromfield Lee, Engaging Students in Tools in the Organic Laboratory, University of Central Florida, Orlando FL, *October 26th, 2018*. (Invited - Oral)

Luka Planinc, Deborah C. Bromfield Lee, Toward the synthesis of Isoindolinonyl Moiety of Stachybotrin D and other derivatives, Physicians Breakfast, Florida Southern College, September 2018. (Poster)

Deborah C. Bromfield Lee, Re-casting Organic Experiments to engage students in the lab, Biennial Conference on Chemical Education, Notre Dame, Indiana, *August 1st, 2018*. (Oral)

Deborah C. Bromfield Lee, Green Chemistry as a Theme: Development of Green Inquiry Labs and students' impressions, 255th American Chemical Society National Meeting, New Orleans, LA, *April 2018*. (Oral)

Kurrdeige Alexander, Deborah C. Bromfield Lee, Synthesis of the isoindolinone moiety of stachybotrin D: Incorporating greener methods, 255th American Chemical Society National Meeting, New Orleans, LA, *April 2018*. (Poster)

Nottage, Chris, Goodmon, Leilani B., Bromfield-Lee, Deborah, Horton, Nicholas, & Trostle, Jordan., The relationship between intensive hands-on learning and 2-D and 3-D mental rotation ability in chemistry students. Poster submitted to the Annual Meeting of the Southeastern Psychological Association, Charleston, SC, *March 2018*. (Poster)

Deborah C. Bromfield Lee and An-Phong Le, Senior undergraduate research and assessment at Florida Southern, 253rd American Chemical Society National Meeting, San Francisco, California, *April 5th, 2017*. (Oral)

Shannon Coody and Deborah Bromfield Lee, Towards the Synthesis of Stachybotrin D, 253rd American Chemical Society National Meeting, San Francisco, California, *April 3rd, 2017*. (Poster)

Deborah C. Bromfield Lee, Implementing Pencasts coupled with Electronic Notebooks, Biennial Conference on Chemical Education, Greeley, Colorado, *August 4th, 2016*. (Oral)

Deborah C. Bromfield Lee, Electronic Notebooks in Organic Chemistry and Students Opinions on it's use, Florida Annual Meeting and Exposition, Palm Harbor, Florida, *May 7th, 2016*. (Oral)

Rubens Petite Homme and Deborah Bromfield Lee, Green Synthesis of CalareneFiat Lux, Florida Southern College, Lakeland, FL, *April 27th, 2016*. (Oral)

Suzanne Wilson and Deborah Bromfield Lee, Isolation and Identification of Antibacterial Compounds. Fiat Lux, Florida Southern College, Lakeland, FL, *April 26th, 2016*. (Poster)

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. Mary Crowe, Susan Serrano, Deborah C. Bromfield Lee. *Helping Students Succeed in Introductory STEM Courses by Improving Quantitative Skills*, JNGI Gateway Course Experience, Atlanta GA, April 5th, 2016. (Oral)

Rubens Petit Homme, Deborah C. Bromfield Lee, Development of a green multiweek synthesis for the organic lab: Total synthesis towards Calarene, Castle Conference, University of South Florida, Tampa, FL, April 3rd, 2016. (Poster)

Rubens Petit Homme, Deborah C. Bromfield Lee, Development of a green multiweek synthesis for the organic lab: Total synthesis towards Calarene, American Chemical Society National Meeting, San Diego CA, March 7th, 2016. (Poster)

Deborah C. Bromfield Lee, Does my model fit what I see? Debating your way to the answer. Florida Annual Meeting and Exposition, Palm Harbor, FL, May 9th, 2015. (Oral)

Rubens Petit Homme, Deborah C. Bromfield Lee, Greener Methods Towards Synthesis of Calarene as a Template of a Semester-Long Organic Project, Florida Annual Meeting and Exposition, Palm Harbor, FL, May 9th, 2015. (Poster)

Deborah C. Bromfield Lee, From the Bench to the Classroom: Organic Research at FSC, Florida Southern College Chemistry Seminar Series, Lakeland, Florida, April 16th, 2015. (Oral)

Wei Pin Teh, Deborah C. Bromfield Lee, Studies towards the synthesis of Stachybotrin D., Fiat Lux, Florida Southern College, Lakeland, FL, April 10th, 2015. (Oral)

Wei Pin Teh, Deborah C. Bromfield Lee, Studies towards the synthesis of Stachybotrin D., Castle Conference, University of South Florida, Tampa, FL, 11th April 2015. (Poster)

Wei Pin Teh, Deborah C. Bromfield Lee, Studies towards the synthesis of Stachybotrin D. American Chemical Society National Meeting, Denver CO, March 9th, 2015. (Oral)

Deborah C. Bromfield Lee, Carmen Gauthier, Outreach is More than an Arm's Length: Scientific Exploration through Chemistry, International Conference on Chemical Education. Toronto, Canada, July 15th, 2014. (Oral)

Deborah C. Bromfield Lee, Addressing Students' Understanding of Laboratory Content through the Learning Lab Report, Gordon Research Conference on Chemical Education, June 10th, 2013. (Poster)

Deborah C. Bromfield Lee, Addressing Students' Understanding in lab and lecture, Florida Annual Meeting and Exposition, Palm Harbor, Florida, May 11th, 2013. (Oral)

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Deborah C. Bromfield Lee Addressing students' understanding of laboratory and lecture content through the learning lab report, 245th ACS National Meeting, New Orleans, Louisiana, *April 10th, 2013*. (Oral)

Deborah C. Bromfield Lee Transition to Active Learning Experiences in Chemistry through Aromas, Organic Projects and the Learning Lab Reports, Florida Southern College Chemistry Seminar Series, Lakeland, Florida, *April 22nd, 2013*. (Oral)

Gregory T. Rushton, Scott E. Lewis, Michelle L Dean, Deborah C. Bromfield Lee, Improving the recruitment, retention, and progression of chemistry majors through the incorporation of chemistry education faculty members in a chemistry department, 243rd ACS National Meeting, *March 25th, 2012*, San Diego, CA. (Poster)

Gregory Rushton, Deborah Bromfield Lee, Michelle Dean, Recruiting and retaining the next generation of chemistry teachers: Successes, challenges, and a call to action, 242nd American Chemical Society National Meeting, Denver, Colorado, *August 31st, 2011*. (Oral)

Lara Pacifici, Deborah Bromfield Lee, Gregory Rushton, Michael Dias, David Rosengrant Beyond Teaching "Science" Teachers: Reflections on Discipline Specific Methods Courses., The Annual Conference of the Southeastern Association for Science Teacher education, Decatur, Georgia, *October 9th, 2010*. (Oral)

Deborah C. Bromfield Lee, Kitchen chemistry: A crash course for non-majors, Biennial Conference on Chemical Education, Denton, Texas, *August 4th, 2010*. (Oral)

Joan Rogue Peña, Deborah Bromfield Lee, Maria Oliver-Hoyo, Development of Three Novel Chemistry Experiments for Undergraduate Courses, Eighth Annual North Carolina State University Undergraduate Summer Research Symposium, *July 27th, 2009*. (Oral)

Deborah C. Bromfield Lee, Maria T. Oliver-Hoyo; Development of Sensorial Experiments for Undergraduate Laboratories, University of South Florida, Tampa, Florida, *April 22nd, 2009*. (Oral)

Joan Rogue Peña, Deborah Bromfield Lee, Maria Oliver-Hoyo, Olfactory Titrations using Glucosinolates Extracted from Rutabaga, Annual Biomedical Research Conference for Minority Students, *November 8th, 2008*. (Poster)

Joan Rogue Peña, Deborah Bromfield Lee, Maria Oliver-Hoyo, Olfactory Titrations using Glucosinolates Extracted from Rutabaga, Seventh Annual North Carolina State University Undergraduate Summer Research Symposium, *August 1st, 2008*. (Poster)

Deborah C. Bromfield Lee, Maria T. Oliver-Hoyo, Development of Sensorial Experiments for Undergraduate Laboratories, Biennial Conference on Chemical Education, Bloomington, IN, *July 28th, 2008*. (Oral)

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Deborah C. Bromfield Lee, Richard Kelley, et.al. Wolfpack Women In Science: Answering the 'Impossible' Question - Innovative Thinking through Themed Dialogues. Glaxo Smith Kline: 6th Annual Women's Leadership Initiative Conference, Cary, North Carolina, *March 17th, 2008*. (Oral)

José Cintrón-Maldonado, Deborah Bromfield Lee, Maria Oliver-Hoyo, Rutabaga as an Indicator for Olfactory Titrations; Sixth Annual North Carolina State University Undergraduate Summer Research Symposium, *August 2nd, 2007*. (Poster)

Deborah C. Bromfield Lee, Maria T. Oliver-Hoyo, Development of Sensorial Experiments for Undergraduate Laboratories, Local American Chemical Society Meeting, Duke University, North Carolina; *April 21st, 2007*. (Oral)

Maria T. Oliver-Hoyo, Deborah C. Bromfield Lee, Sensorial experiments: experiments that rely on senses other than eyesight, American Chemical Society National Meeting – Chicago; *March 27th, 2007*. (Oral)

Deborah C. Bromfield Lee, Maria T. Oliver-Hoyo, Development of Sensorial Experiments for Undergraduate Laboratories, Eighth Annual Poster Session, North Carolina State University, University Club, Raleigh, NC; *March, 2007*. (Poster)

Deborah C. Bromfield, Maximilian A. Silvestri, Salvatore D. Lepore, New Chemical Methods for the Synthesis of Geniposidic Acid, An Anticancer Marine Natural Product. Florida Marine Biotechnology Summit IV: BioFlorida Conference, Boca Raton, FL, *October 17th-18th 2004*. (Poster)

Salvatore D. Lepore and Deborah C. Bromfield, Flanagan High School Science Club, Pembroke Pines, Florida; *October 11, 2004*. (Oral)

Maximilian A. Silvestri, Deborah C. Bromfield, Salvatore D. Lepore, New Chemical Methods for the Total Synthesis of an Iridoid Natural Product with Anticancer Activity; XI Marine Natural Products Symposium, Boca Raton, Florida; *December 2004*. (Oral)

Maximilian A. Silvestri, Deborah C. Bromfield, Salvatore D. Lepore, The Development of a Novel Diels-Alder Reaction Involving Allenyl Esters as Heterodienes: Studies toward the Total Synthesis of an Iridoid Natural Product, XI Marine Natural Products Symposium, Sorrento, Italy, *August 2004*. (Oral)

Deborah C. Bromfield, Vinod Jairaj, Salvatore D. Lepore, Studies on the Manganese-Mediated Isomerization of Alkynyl Carbonyls to Allenyl Carbonyls, BioTech Meeting, Boca Raton, Florida; *March 2003*. (Poster)

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PROPOSALS FUNDED

Florida Southern College: Undergraduate Summer Research Grant. Funded, \$5,978.20, **2021**.

Florida Southern College: Undergraduate Summer Research Grant. Funded, \$5,814, **2020**.

Chemistry Collaborations Workshops and Communities of Scholars program (cCWCS) Travel Grant, \$781.60, **2018**.

ACS Division of Chemical Education Travel Award \$1,000, **2018**.

Chemistry Collaborations Workshops and Communities of Scholars program (cCWCS) implementation Grant, \$1,610, **2018**.

Florida Southern College: Undergraduate Summer Research Grant. Funded, \$6,000, **2018**.

Florida Southern College: Undergraduate Summer Research Grant. Funded, \$5,538, **2017**.

Florida Southern College: Undergraduate Summer Research Grant. Funded, \$1,348, **2016**.

The Mosaic Company Community Investments – Florida Annual Meeting and Exposition High School Teacher Program, \$1,000, **2015**.

Florida Southern College: Undergraduate Summer Research Grant, Funded, \$5,606, **2015**.

Florida Southern College: Undergraduate Summer Research Grant, Funded, \$5,000, **2014**.

The Mosaic Company Community Investments – Summer Experiences for High School Students (in collaboration with Carmen Gauthier). Funded, \$3,000. **2013**

Georgia Space Grant Consortium - Pre-college STEM Enrichment - KSU NASA Pre-college STEM Enrichment Program (in collaboration with Army Lester and Premila Achar); \$8,744, Co-PI; **2011**.

Georgia Space Grant Consortium - College STEM Enrichment - KSU NASA Applied Leadership Program (in collaboration with Army Lester and Premila Achar); \$8,953, Co-PI; **2011**

Georgia Space Grant Consortium - Graduate STEM Enrichment - KSU NASA Fellows Program (in collaboration with Army Lester and Premila Achar); \$6,000; Co-PI; **2011**

Co-PI Role in the above three Enrichment Grants– development and evaluation of STEM activities (primarily chemistry); training of the undergraduate who will teach high school students these activities; assessment of learning outcomes for pre-college and college students during this process.

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Improving Teacher Quality State Grants Title II, Part A of the No Child Left Behind Act Administered by the University of Georgia - Improving the Chemistry Education for All, (in collaboration with Michelle Head); \$53,357.16, Co-PI, **2011**.

Co-PI Role - Co-project director and contributed to the design, planning, evaluation materials and organization primarily during the summer workshop and Fall follow-up workshops. This role involved co-directing and managing all of the summer workshop activities and some contact with the teachers in the Fall 2012 semester.

PROPOSALS SUBMITTED

NSF - GO MOCS - Guidance and Mentoring On Careers in Science

Proposal Number: 1741917; PI; (in collaboration with Shameka Shelby and Mary Crowe) \$648,000 – Not Funded **2017**

NSF - Breaking the Comfort Zone: Diverse Learning Environments that Support All

Proposal Number: 1708952; Co-PI; (in collaboration with Nancy Morvillo, David Mathias and Mary Crowe) \$293,120 **2017**

HHMI - CREATE: Culturally Relevant Engaging Approaches to Teaching; Core Team Member; (in collaboration with Nancy Morvillo, David Mathias and Mary Crowe) \$ 1,000,000 – Not funded (to be re-submitted) **2017**

HONORS

Phi Lambda Upsilon National Chemistry Honor Society, (Spring 2010)

Carl Storm Underrepresented Minority Fellowship (Summer 2013)

Faculty Honoree for MAT University Scholar (Spring 2012)

Faculty Honoree for Honor MAT Student at Graduation (August 2011)

Faculty Honoree for President's 4.0 Freshman Student (Spring 2011)

Eli Lilly/WCC Travel Grant Awards (Fall 2008)

Golden Key International Honor Society (Spring 2001)

National Society of Collegiate Scholars (Spring 2000)

AFFILIATIONS AND ORGANIZATIONS

Council of Undergraduate Research (Member: 2017-present)

American Chemical Society (Member: 2004-present)

Phi Lambda Upsilon National Chemistry Honor Society, PLU (National Secretary, 2010- present)

National Science Teachers Association, NSTA (2010-present)

Gamma Sigma Epsilon Chemistry Honor Society (2013-present)

American Association for the Advancement of Science (2010-present)

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Association of Women in Science (2010-present)

SERVICE

- ACS Florida Section Chair Elect (2021)
- Proctor for UN
- Florida Undergraduate Research Consortium Board Member (2019)
- Florida Annual Meeting and Exposition Chemical Education Symposia (2019)
- American Chemical Society CHED Fall Program Co-Chair (2019)
- American Chemical Society CHED Fall Program Co-Chair (2018)
- Florida Annual Meeting and Exposition Chemical Education Symposia (2018-2019)
- ACS - Multidisciplinary Program Planning Group (2018-present)
- FSC- Quality Enhancement Place committee
- ACS – CHED Program Committee (2015 - present)
- FSC - Distance Education Committee (2016-present; Chair: 2016-2017)
- Poster judge for Castle Conference - University of South Florida (2013-2017)
- Faculty Advisor for Gamma Sigma Epsilon (2014-present)
- ALEKS implementation ad-hoc committee (2014-2017)
- Journal of Chemical Educator Reviewer (2009-present)
- Chemical Educator Reviewer (2017)
- Green Chemistry Letters and Review Reviewer (2019)
- FSC Biology Competition Poster Judge (2016).
- Florida Annual Meeting and Exposition Chemical Education Symposia Organizer and High School Teacher Program Chair (2015)
- Florida Southern College Library and Archives Committee (2013-2016; Chair: 2015-2016, 2014-2015)
- Florida Annual Meeting and Exposition High School Teacher Program Co-Chair (2014)
- American Chemical Society CHED Poster organizer (2014)
- Poster judge for Florida Annual Meeting and Exposition (2013-2014, 2018)
- MAT admissions interviewer (2010)
- Georgia Math Science Partnership (2010-2011)
- Co-Councilor of Beta Upsilon Student Chapter of Phi Lambda Upsilon (2010-present).

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- Assisted elementary school teachers (Fred Olds Magnet Elementary School University Connections) with University Science Connections Learning Units, inflatable star lab, and science fairs. (2008-2009)
- Student Diversity Advisory Council Representative (2007-2008)
- Academic Coordinator for KSU STEM Scholars - NASA and LMPSA students (2011-2012)
- KSU National Science Teachers Association Student Chapter Advisor (2011-2012)

WORKSHOPS ATTENDED

Food Chemistry workshop, Biennial Conference on Chemical education, Notre Dame, IN, August 2018.

Getting the most out of molecular-level visualization and simulation when teaching Organic Chemistry and Physical Chem – Biennial Conference on Chemical Education, Greeley, CO, August 2016

Hands-On Activities for the Organic Chemistry – Biennial Conference on Chemical Education, Greeley, CO, August 2016

Microwaves in Organic Chemistry - Biennial Conference on Chemical Education, Greeley, CO, August 2016

Leading Change, ACS Leadership Course, San Francisco, CA, April 2017

Food Chemistry workshop, Clarke University, Dubuque, IA between June 26 – July 1, 2016 - NSF funded – week long workshop.

Teaching Guided-Inquiry Organic Labs - recasting experiments, University of Minnesota, MN, June 8-13, 2016 - NSF funded – week long workshop.

Active Learning in Organic Chemistry workshop, Denver, CO, June 7-9, 2014 - NSF funded – 3 day workshop.

Food Chemistry miniworkshop (Baking), St. Joseph's College of Maine, Standish, ME, July 18-20, 2014 - NSF funded – 3 day workshop.

Leading Without Authority – American Chemical Society Leadership Learning System sponsored workshop, Dallas Texas, 2013

SKILLS

Laboratory Equipment: Autopol I, GC, HPLC, IR, NMR (H^1 NMR, C^{13} NMR, various 2D methods) CNO analyzer, UV-Vis, Microlab and other educational equipment, and other common organic equipment.

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Computer Skills: Hyperchem Molecular Modeling, ChemDraw, Spartan Molecular Modeling;
Windows OS, Microsoft Office, Adobe software, HTML-web based design.