

Wendy Clevenger Cory
<http://coryw.people.cofc.edu>

Academic Background

Doctor of Philosophy, August 1997

University of Florida, Gainesville, FL

Analytical Chemistry

Environmental Engineering concentration

Graduate Research Advisor: Dr. James Winefordner

Dissertation: "Ultratrace Detection of Mercury Using Resonance Ionization Spectroscopy"

Bachelor of Science, May 1993

University of Tennessee at Chattanooga, Chattanooga, TN

Chemistry

Undergraduate studies, September 1988 – May 1990

Furman University, Greenville SC

Appointments

William Marion Mebane Distinguished Teaching Chair in Chemistry, 8/2016 - present

Associate Chair, CofC, Department of Chemistry and Biochemistry, 1/2015 – present

Sabbatical Research Appointment, 1/2014-12/2015

Associate Professor, CofC, Department of Chemistry and Biochemistry, 8/2013 – present

Assistant Professor, CofC, Department of Chemistry and Biochemistry, 8/2007 – August 2013

(3-year break from career to welcome and care for daughter)

Senior Research Scientist, Pfizer Global Research and Development, Groton CT, 9/2001 – 9/2004

Assistant Professor, University of Tennessee at Chattanooga, Department of Chemistry, Chattanooga TN, 8/1998 – 8/2001

Visiting Assistant Professor, CofC, Department of Chemistry and Biochemistry, 8/1997 – 5/1998

Honors and Awards

Norine Noonan Award, SSM, C of C, 2016

William V. Moore Teacher-Scholar Award, College of Charleston, C of C, 2015

Outreach Volunteer of the Year, SC American Chemical Society, 2015

Outstanding Faculty Award for SSM, ExCEL Award for promoting excellence and diversity at C of C, 2014

Gordon E. Jones Distinguished Achievement Award, SSM, C of C, 2013

Environmental Protection Agency STAR grant fellow, 1996-1997

Phi Beta Kappa

Golden Key National Honor Society

Gamma Sigma Epsilon, National Chemistry Honor Society

1988 National Merit Scholar

Peer-Reviewed C of C Publications (Undergraduate co-authors underlined, masters student co-author denoted by *)

1. V.M. Vulava, W. Cory, V. Murphey, C. Ulmer, "Influence of Organic Matter on Sorption and Photodegradation Behavior of Naproxen and Ibuprofen in Soils and Water," *Science of the Total Environment*, 565 (2016) 1063-1070. doi:10.1016/j.scitotenv.2016.05.132.

2. L.P. Herbert, D.B. Becker-Krail, W.C. Cory, "Persistent Phototransformation Products of Vardenafil (Levitra) and Sildenafil (Viagra)," *Chemosphere*, 134 (2015) 557-562. doi:10.1016/j.chemosphere.2014.12.011
3. Z.J. Stansell*, M.W. Farnham, D. Coulliard, W. Cory, "Collard Landraces are Novel Sources of Glucoraphanin and Other Aliphatic Glucosinolates," *Plant Breeding*, 134 (2015) 350-355. doi: 10.1111/pbr.12263.
4. T. Henson*, W. Cory, M. Rutter, "Extensive Variation in Cadmium Tolerance and Accumulation among Natural Populations of *Chamaecrista fasciculata*," *PLoS ONE* 8(5): e63200. doi:10.1371/journal.pone.0063200.
5. W.C. Cory, R.E. Patterson, P.J. Mabe, E.N. Mitchell, "Development of a User-Friendly ESI-LC-MS Method for the Identification of Sildenafil and Vardenafil in Seized Evidence," *Forensic Science International*, 222 (2012) 83-88.
6. W. Cory, C. Harris, S. Martinez, "Accelerated Degradation of Ibuprofen," *Pharmaceutical Development and Technology*, 15 (2010) 636-643.

Non Peer-Reviewed C of C Publications (Undergraduate co-authors underlined, masters student co-author denoted by *)

1. W.C. Cory, R.E. Patterson, P.J. Mabe, E.N. Mitchell, "Combating Counterfeit Drugs, Forensic Analysis Using LC-MS: Forensic Determination of Sildenafil and Vardenafil in Seized Evidence," Invited article, *The Column (LCGC)* 7 (2011) 2-7.
2. W. Cory, A. DeSantis and C. Ulmer, "Photodegradation of Naproxen and Ibuprofen and the Formation of Ecotoxic Photoproducts in Natural Water Samples," Conference Proceedings, the 4th IWA Specialty Conference on Natural Organic Matter, July 27-30 2011, Costa Mesa CA.

External Research Presentations while at CofC (Undergraduate co-authors underlined)

1. "Analysis of the Degradation of Pharmaceuticals Stored on the International Space Station (ISS)," Wendy Cory*, Virginia James, Alisha Lamas, Katrina Mangiaracina, Jessica Moon, NASA Human Research Program (HRP) Investigator Workshop, January 2017, Galveston TX
2. "Pharmaceutical Analysis CURE – Classroom Undergraduate Research Experience – in the General Chemistry Laboratory," Wendy Cory, Southeast Regional Meeting of the American Chemical Society (SERMACS), October 2016, Columbia SC, invited
3. "When Pharmaceuticals Degrade in the Environment," Wendy Cory, Southeast Regional Meeting of the American Chemical Society (SERMACS), October 2014, Nashville TN
4. "Monitoring Solar Photodegradation of Pharmaceuticals in Environmental Samples: Analytical and Environmental Chemistry Research at the College of Charleston," Wendy Cory, National Meeting of the American Chemical Society, August 2014, San Francisco CA
5. "Investigation of Photochemical Degradates of Pharmaceuticals in Water Samples," Wendy Cory, Jessica Ramirez, Logan Herbert, Adam Jenkins, Allison Welch, Jonathan Brown, and Sarah Turner, Society of Environmental Toxicology and Chemistry (SETAC) Europe, May 2014, Basel, Switzerland
6. "When Pharmaceuticals Degrade in the Environment," Wendy Cory, invited Analytical Division Seminar, Department of Chemistry, February 2014, University of Florida, Gainesville FL
7. "Photochemical Degradation and Environmental Fate of Pharmaceutically Active Compounds in Simulated Natural Water Samples," Wendy Cory, Southeast Regional Meeting of the American Chemical Society (SERMACS), November 2013, Atlanta GA
8. "Photodegradation of Naproxen and Ibuprofen and the Formation of Ecotoxic Photoproducts in Natural Water Samples," Wendy Cory,* Andrea DeSantis, and Candice Ulmer, 4th IWA Specialty Conference on Natural Organic Matter, July 2011, Costa Mesa CA

9. "Pharmaceutical Analysis in the Quant Lab: The Potency and Degradation of Aspirin," Wendy Cory Southeast Regional Meeting of the American Chemical Society (SERMACS), October 2009, San Juan PR
10. "Undergraduate Research in Drug Development: Forced Degradation of Ibuprofen," Wendy Cory, Pittsburgh Conference on Analytical Chemistry, March 2008, New Orleans LA

External Mentored UG Student Research Presentations while at CofC (Undergraduate co-authors underlined, presenter name starred)

PittCon 2017, Pittsburgh Conference on Analytical Chemistry, March 2017, Chicago IL

Note: The Pittsburgh Conference is the premiere international conference for the field of Analytical Chemistry.

1. "Degradation of Sertraline in Space," Virginia James*, Wendy Cory
2. "Investigation into the Stability and Potency of Ibuprofen Stored Aboard the International Space Station," Katrina Mangiaracina*, Wendy Cory
3. "Chemical Analysis of Potency and Purity of Phenytoin Capsules Stored on the International Space Station," Jessica Moon*, Wendy Cory
4. "Investigating the Potential Degradation of Levofloxacin Following Exposure to Space," Alisha Lamas*, Wendy Cory

PittCon 2016, Pittsburgh Conference on Analytical Chemistry, March 2016, Atlanta GA

1. "Photodegradation of Bupropion and Gabapentin," Neha Muppala*, Kristina Tran, Wendy Cory
2. "Photodegradation and Ecotoxicity Studies of Sertraline, Fluoxetine, and their Photodegradants," Sylvia Davila*, Jessica Hinson, Allison Welch, Wendy Cory

PittCon 2015, Pittsburgh Conference on Analytical Chemistry, March 2015, New Orleans LA

3. "Solar Photodegradation of Diphenhydramine and Ranitidine in Simulated Natural Waters," Aliya Dumas*, Omorose Aighewi*, Wendy Cory
4. "Solar Photodegradation of Antidepressants in the Aquatic Environment," Taylor Domenick*, Lisa Kasprzak*, Caitlin Purvis*, Wendy Cory – first runner up for best undergraduate poster presentation

SERMACS 2014, Southeast Regional Meeting of the American Chemical Society, October 2014, Nashville TN

Note: SERMACS is the American Chemical Society's annual meeting for the southeast region. The American Chemical Society is the premiere organization for all areas of chemistry.

5. "Method Development for Metabolomic Analysis by LC-MS," Elizabeth Blankenship*, Wendy Cory, Jennifer Fox

SERMACS 2013, Southeast Regional Meeting of the American Chemical Society, November 2013, Atlanta GA

6. "Photodegradation of Diphenhydramine in Simulated Natural Waters," Aliya Dumas*, Wendy Cory
7. "Photodegradation Mechanisms of Vardenafil and Sildenafil," Logan Herbert*, Wendy Cory
8. "Photodegradation of Loratidine in Natural Water Samples," Adam Jenkins*, Wendy Cory
9. "Photodegradation of Naproxen and its Photodegradants in Simulated Natural Water Samples" Jess Ramirez*, Wendy Cory
10. "Method Development for Metabolomic Analysis of *Saccharomyces cerevisiae* by LC-MS," Samuel M. Elcik*, Wendy Cory, Jennifer Fox

Southeast Regional Meeting of the American Chemical Society, October 2012, Raleigh NC

11. "The Photodegradation of Sildenafil in Simulated Natural Waters," Darius Becker-Krail*, Wendy Cory
12. "Photodegradation Mechanism of Vardenafil, the Active Ingredient in Levitra," Logan Herbert*, Wendy Cory

13. "Investigation of the Products of Cetirizine Solar Photodegradation," Adam Jenkins*, Wendy Cory
Pittsburgh Conference on Analytical Chemistry, March 2012, Orlando FL
14. "Indirect Photodegradation of Naproxen in Simulated Natural Water Systems," Candice Ulmer*, Wendy Cory
15. "Forensic Degradation Analysis of Sildenafil Using ESI-LC-MS," Chase Mabe*, Wendy Cory
16. "Photochemical Degradation of Cetirizine in Simulated Natural Waters," Danielle White*, Wendy Cory

Pittsburgh Conference on Analytical Chemistry, March 2011, Atlanta GA

17. "Photodegradation of Ibuprofen and Naproxen in Natural Water Samples," Andrea DeSantis*, Wendy Cory
18. "Chiral Quantification of Naproxen by Electrospray Ionization - Tandem Mass Spectrometry: Kinetic Method," Stephen Ferguson*, Wendy Cory
19. "Solid Phase Microextraction and Gas Chromatography/ Mass Spectrometry Analysis of Organoleptic Compounds in Vodka," Chase Mabe*, Wendy Cory
20. "Forensic Determination of Erectile Dysfunction Drugs Using Electrospray Ionization - Liquid Chromatography - Mass Spectrometry," Rainey Patterson*, Wendy Cory
21. "Photodegradation of Cetirizine in Natural Water Samples," Akal Zeleke*, Wendy Cory

Northeastern/Southeastern Meeting of the Geologic Society of America, March 2011

22. "Binding of Naproxen and Ibuprofen in Organic- and Clay-Rich Soils," Virginia Murphey*, Vijay Vulava, Wendy Cory

Southeast Regional Meeting of the American Chemical Society, October 2009, San Juan PR

23. "Forced Degradation Studies of Cetirizine, Loratidine and Naproxen by HPLC," Andrea DeSantis*, Wendy Cory
24. "Development of a Stability Indicating Assay for Ibuprofen Tablets Using HPLC," Corbyn Harris*, Wendy Cory
25. "The Analysis of Glucosinolates Using HILIC-ESI-MS," Margaret Thomasson*, Wendy Cory

Southeast Regional Meeting of the American Chemical Society, October 2008, Nashville TN

26. "Predicting the Expiration Date of Ibuprofen Tablets: A Forced Degradation Study," Corbyn Harris*, Wendy Cory

Internal Poster Presentations

46 Convocation Day "Celebration of Summer Scholars" Posters, 2009-2016

27 SSM Day Posters, 2008-2016, three students given Award of Merit

My students have also given invited presentations to the Board of Trustees, at the SC Statehouse, at annual SCAMP banquets.

Grant Activity

External grant in review: NASA

External Funding as Principal Investigator (PI)

1. NASA, National Institute of Aerospace (NIA) grant, continuation of NIA-2B28, 2016-2017. "Analysis of Degradation of Pharmaceuticals Stored on the International Space Station," \$25,788. This grant includes samples of medications that were previously stored on the International Space Station, to be investigated in the Cory lab with 2-3 undergraduate students during Summer 2017.
2. NASA, National Institute of Aerospace (NIA) grant NIA-2B28, 2015-2016. "Analysis of Degradation of Pharmaceuticals Stored on the International Space Station," \$7393. This grant

includes samples of medications that were previously stored on the International Space Station, to be investigated in the Cory lab with four undergraduate students during Summer 2016.

3. NSF grant CBET 1236266, 2012-2016. "Photochemical Degradation, Soil Sorption, and Environmental Fate of Pharmaceutically Active Compounds in Simulated and Natural Water Samples," \$334,539. Co-PI: Vijay Vulava (Geology). This grant included undergraduate research stipends for over 20 students over four years.
4. NSF grant CHEM 1229559, 2012-2015. "Acquisition of an Ultra High Pressure Liquid Chromatograph – Mass Spectrometer for Interdisciplinary Undergraduate Research and Teaching in Chemistry and Related Fields," \$277,191. Co-PIs: Marcello Forconi (Chemistry), Jennifer Fox (Chemistry), Brooke Van Horne (Chemistry), Vijay Vulava (Geology)
5. NSF grant CHEM 0821426, 2008-2011. "Acquisition of HPLC with Diode Array Detection for Pharmaceutical and Forensic Chemistry at the College of Charleston," \$63,773.

External Funding as co-PI

1. NSF Grant CHEM 1429308, 2014-16. "MRI: Acquisition of a 400 MHz Nuclear Magnetic Resonance Spectrometer with a Multinuclear Probe and a Sample Changer," \$319,800. PI: Justin Wyatt. Co-PIs: myself, Marcello Forconi, Brooke Van Horn, Tim Barker (all chemistry).
2. South Carolina Water Resources Council 2014-15. "Effects of Pharmaceutical Photodegradation Products in Freshwater on Local Amphibians," \$20,051 awarded, reduced to 60% of that due to federal government budget sequestration. PI: Allison Welch. Co-PI: myself.

Internal Grant Activity

One Faculty Research and Development Grant, 2008

Six SURF (URCA) grants, 2008-2012

Twenty-six RPG (URCA) grants, 2009-2017 (4 in 2017)

Twenty-seven HHMI grants, 2009-2017

Service

To the Department of Chemistry and Biochemistry

1. Untenured Faculty Mentoring Committees, Jay Forsythe (2016-present), Kate Mullaugh (2014-present, committee chair), Jenn Fox (2013-present, Fall 2015-present, committee chair), Brooke Van Horn (2015-2016, committee chair), Marcello Forconi (2013-2015). Includes mentoring meetings and classroom evaluations.
2. Head of Faculty Search committee, Fall 2015 and Fall 2013.
3. 112L lab leader (updated research-based course), 2015-present. Includes leading pre-semester day of training/professional development for all instructors including adjunct faculty. Also involves providing course materials, syllabi, schedules, quizzes, pre-lab powerpoint presentations, and grading rubrics to all instructors, as well as communicating any week-to-week changes and information. Led 4-8 hour instructor training sessions (primarily adjuncts, professional development) before the Fall 2015 and Spring 2016 semesters.
4. 421L (formerly 521L) lab leader, 2013-present. Developed course materials, syllabi, schedule, and grading rubrics. Set up experiments each week, including preparation of solutions, unknowns, standards, and instrumentation.
5. 221L lab leader, 2009-2013. Includes providing course materials, syllabi, schedules, and grading rubrics to all instructors, as well as communicating any week-to-week changes and information.
6. Organized, with Pam Riggs-Gelasco and Jenn Fox, student travel for SERMACS 2013 in Atlanta (23 undergraduate students and six faculty) SERMACS 2014 in Nashville (22 undergraduate students and five faculty), SERMACS 2015 in Memphis, SERMACS 2016 in Columbia SC (31 students).

7. Chair of Adjunct Committee, 2015-present. Includes classroom evaluations as well as safety evaluations in laboratory courses, coordinating faculty visits to classes and writing reports compiling data.
8. Safety Committee member, 2010-2014, 2015-present; chair, 2010-2013, 2016-present. Includes conducting lab inspections of laboratory courses.
9. Participated in FYER Freshman Research Rotation, Spring 2013, Spring 2015, Spring 2016. Supervised eight freshmen students for two 3-hr periods on Friday afternoons in lab activities related to my research program.
10. Participated in upperclassman CHEM/BIOC major Research Rotation, Fall 2015. Supervised six students (including 4 URM students) for two 3-hr periods on Friday afternoons in lab activities related to my research program.
11. Instrument Committee Chair, 2010-2012. Kept inventory list and “wish list” prioritizing future instrumental purchases. Made recommendations to department head on priorities concerning new instrumentation.

To the College of Charleston

1. Chair of Distinguished Teacher-Scholar Distinguished Teacher-Scholar committee (to award William V. Moore award for 2016), Spring 2016
2. External Panel Member for EHHS T&P committee, Fall 2015
3. SCAMP Advisory Board, 2011-present
4. SURF grant reviewer for URCA, 2013-2015
5. Art Matters, 2014-2015
6. CofC STEM Day at the arena, performed liquid nitrogen magic show on arena floor, February 2014
7. Led seminar on “How to Write a Personal Statement” for the HHMI research community meeting, 2010-2014
8. Represented Department and performed demonstrations at C of C Boundless kickoff, November 2014
9. Faculty R&D Committee member, 2009-2010
10. Faculty Governance Committee member, 2008-2009

Service to the Scientific Community

1. NSF grant proposal reviewer – reviewed proposals in Arlington VA for NSF, 2016.
2. Organized and chaired a day-long symposium in honor of Dr. Frank Kinard, SERMACS, October 2014, Nashville TN, including many prominent alumni from our department.
3. NIH grant proposal reviewer – reviewed proposals in Bethesda MD for NIH/NIDA Small Business Innovation Research (SBIR) solicitation, 2013, 2014.
4. NSF grant proposal reviewer – reviewed proposals in Arlington VA for NSF, 2013.
5. Journal Article Reviewer – served as ad hoc reviewer for peer-reviewed journals, 2010-present.

Outreach Service

1. Haut Gap 5th grade Pre-magnet outreach – did hands-on activity involving paper chromatography for ink analysis of “ransom note,” for all 5th graders (40), October 2015, (My daughter attended Haut Gap 2015-2016.)
2. James Island Elementary School outreach – performed “science shows” (2011, 2012, 2013) and did hands-on activities (2014, 2015) with elementary students, including their “STEM night” festival. (My daughter attended JIES 2010-2015.)

3. Beach sweeps with LC students, 2009-2013, 2015, Service Learning – Participated with FYE LC students in Beach Sweep (cleaning the marsh) at Waterfront Park, in partnership with the SC Sea Grant Consortium as part of learning about ocean gyres and water conservation.
4. *The Frog Scientist* 2012, 2013, 2014 – In collaboration with CofC Literacy Outreach Initiative (now Honors Engaged), hosted a day of science activities for area fifth-graders (year 1, 400, years 2 and 3, 100) from Title I (high poverty) schools on the book *The Frog Scientist*, a children's book about SC native and world-renowned herpetologist Dr. Tyrone Hayes (funded through NSF grant CBET 1236266). Interviewed Dr. Hayes and produced a short video, in collaboration with former UG research student Andrea DeSantis, answering questions from year 1's fifth-graders, available at <https://www.youtube.com/watch?v=tpp5OfGr2Xs>
5. *Tracking Trash* 2013, 2014 - In collaboration with CofC Literacy Outreach Initiative (now Honors Engaged), hosted a day of science activities for area sixth-graders (years 1 and 2, 100 students) from Title I (high poverty) schools on the book *Tracking Trash*, a children's book about trash found in the ocean, especially the Great Pacific Garbage Patch (funded through NSF grant CBET 1236266).
6. STEAM Camp leader, June 23-27 2014, at the School of the Arts for elementary students from Charleston County School District. Developed and led five days of laboratory activities related to *Tracking Trash*.
7. Ashley Hall, 2012, 2013, 2014 – Worked with junior and senior students at Ashley Hall, gave seminar each year to 1-2 classes to describe my research on the photodegradation of pharmaceuticals in the environment. Provided (on loan) lab equipment so that they could perform studies on their campus related to the effect of pH and salinity on the degradation of pharmaceuticals. I analyzed their samples and helped them with data analysis. They also visited CofC each year and toured my lab. The students made posters describing their work that were hung in their science building at Ashley Hall.
8. Organized activities with Lowcountry Hall of Science and Math and Barbara Beckingham from Geology for National Chemistry Week, October 2014, involving hands-on activities for Charleston area students on topics related to *Tracking Trash*.