

## Emily D. Niemeyer

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### Education

- 1998 Ph.D., Analytical Chemistry, State University of New York at Buffalo  
Dissertation Advisor: Professor Frank V. Bright
- 1993 B.S., Chemistry, Ohio Northern University, cum laude

### Areas of Teaching Specialization

Instrumental Methods of Analysis; Quantitative Analysis; Environmental Chemistry for science majors and non-majors; General Chemistry

### Teaching Positions and Other Related Experience

- 2006-present Chair, Department of Chemistry and Biochemistry, Southwestern University  
2004-present Associate Professor, Department of Chemistry and Biochemistry, Southwestern University  
1999-2002 Chair, Environmental Studies Program, Southwestern University  
1998-2004 Assistant Professor, Department of Chemistry and Biochemistry, Southwestern University  
1996 Instructor, Educational Opportunity Program, State University of New York at Buffalo

### Research Pursuits

Mass spectrometry and analysis of flavonoids and phytochemicals; Quantification of environmentally-significant chemicals in complex matrices; Molecular spectroscopy; Solvation in modified supercritical fluid systems including polymers and microheterogeneous media

### Academic Awards and Fellowships

- 2002-2003 Southwestern University Excellence in Academic Advising Award  
1997 American Chemical Society Division of Analytical Chemistry Graduate Fellowship  
1996 Mattern Tyler Award for Excellence in Teaching

### External Research and Teaching Grants

- 2007 Pittsburgh Conference Memorial National College Grant (\$10,000)  
2005 Co-author of Associated Colleges of the South Environmental Initiative Curriculum and Faculty Development Grant (\$1500)  
2004-2007 Co-investigator on Merck/AAAS Undergraduate Science Research Program Grant  
1999 Associated Colleges of the South Pilot Project Energy Challenge Grant (\$2100)  
1998-2003 Camille and Henry Dreyfus Faculty Start-up Grant Program for Undergraduate Institutions (\$20,000)  
1996 Air Force Office of Scientific Research Summer Research Extension Program Grant (\$25,000)

### University-Supported Professional Activity

- 2002 Fleming Collaborative Research and Creative Activity Grant  
2001-2002 Brown Faculty Fellowship  
2000 Mundy Faculty Fellowship  
1999 Cullen Faculty Development Grant

## Professional Service

2006-2007	American Chemical Society Division of Analytical Chemistry Graduate Fellowship Selection Committee
2003-2007	Panelist, National Science Foundation Graduate Research Fellowship Program
2003, 2004	Panelist, Women in the Natural Sciences Program, University of Texas at Austin
2003, 2004	Selection committee member, Pfizer Graduate Travel Awards
2003-2005	Reviewer, Earth and Sky radio series, National Public Radio

## Peer-Reviewed Publications (\* denotes Southwestern University undergraduate co-authors)

### Articles Under Review

- Johnson, Melissa A.; Niemeyer, Emily D. "Ambivalent Landscapes: Environmental Justice in the U.S.-Mexico Borderlands" submitted to *Human Ecology* (July 2007).
- Freeman, Jessica D.\*; Niemeyer, Emily D. "Quantification of Tea Flavonoids by High Performance Liquid Chromatography" submitted to *J. Chem. Ed.* (May 2007).

### Published Articles

- Niemeyer, Emily D.; Brodbelt, Jennifer S. "Isomeric Differentiation of Green Tea Catechins using Gas-Phase Hydrogen/Deuterium Exchange Reactions" *J. Amer. Soc. Mass Spectrom.* **2007**, in press.
- Owens, Janel E.\*; Niemeyer, Emily D. "Analysis of Chemical Contamination in a Canal within a Mexican Border *Colonia*" *Env. Pollution* **2006**, *140*, 506-515.
- Alter, Krystyn P.\*; Molloy, John L.\*; Niemeyer, Emily D. "Spectrophotometric Determination of the Dissociation Constant of an Acid-Base Indicator using a Mathematical Deconvolution Technique" *J. Chem. Ed.* **2005**, *82*, 1682-1685.
- Bonzagni, Neil J.; Baker, Gary A.; Pandey, Siddharth; Niemeyer, Emily D.; Bright, Frank V. "On the Origin of the Heterogeneous Emission from Pyrene Sequestered Within Tetramethylorthosilicate-Based Xerogels: A Decay-Associated Spectra and O<sub>2</sub> Quenching Study" *J. Sol-Gel Sci. Tech.* **2000**, *17*, 83-90.
- Daniel, Sheila N.; Niemeyer, Emily D.; Bright, Frank V., "Evidence for Chain Length Dependent Local Ordering Surrounding Perylene Dissolved in Poly(ethylene glycol)" *Macromolecules* **1999**, *32*, 8084.
- Niemeyer, Emily D.; Bright, Frank V., "Determination of the Local Environment Surrounding Pyrene in Supercritical Alkanes: A First Step Toward Solvation in Supercritical Aviation Fuels" *Energy & Fuels* **1998**, *12*, 823.
- Niemeyer, Emily D.; Bright, Frank V., "The pH Within PFPE Reverse Micelles Formed in Supercritical CO<sub>2</sub>" *J. Phys. Chem.* **1998**, *102*, 1474.
- Niemeyer, Emily D.; Bright, Frank V., "Effects of Gas Sorption on the Rotational Reorientation Dynamics of a Model Solute Dissolved in Poly(dimethylsiloxane)" *Macromolecules* **1998**, *31*, 77.
- Niemeyer, Emily D.; Dunbar, Richard A.; Bright, Frank V., "On the Local Environment Surrounding Pyrene in Near- and Supercritical Water" *Appl. Spectrosc.* **1997**, *51*, 1547.
- Rice, Jeanette K.; Niemeyer, Emily D.; Bright, Frank V., "Solute-Fluid Coupling and Energy Dissipation in Supercritical Fluids: 9-Cyanoanthracene in C<sub>2</sub>H<sub>6</sub>, CO<sub>2</sub>, and CF<sub>3</sub>H" *J. Phys. Chem.* **1996**, *100*, 8499.

• Rice, Jeanette K.; Niemeyer, Emily D.; Bright, Frank V., "Evidence for Density-Dependent Changes in Solute Molar Absorptivities in Supercritical CO<sub>2</sub>: Impact on Solubility Determination Practices" *Anal. Chem.* **1995**, *67*, 4354.

• Rice, Jeanette K.; Niemeyer, Emily D.; Dunbar, Richard A.; Bright, Frank V., "State-Dependent Solvation of Pyrene in Supercritical CO<sub>2</sub>" *J. Am. Chem. Soc.* **1995**, *117*, 5832.

### Book Contributions

• Kane, Maureen A.; Daniel, Sheila N.; Niemeyer, Emily D.; Bright, Frank V. "Spectroscopic Investigations of Intermolecular Interactions in Supercritical Fluids" in *New Trends in Fluorescence Spectroscopy: Applications to Chemical and Life Sciences*, **2001**, Springer-Verlag: New York, NY.

### Non-Peer Reviewed Publications

• Niemeyer, Emily D. "Victims of the Maquiladoras" in *Toward the Well-being of Humanity*, Southwestern University, **2002**.

• Owens, Janel E.;\* Niemeyer, Emily D. "Chemical Analysis of Industrial Pollution within an Open Canal Located in a Border *Colonia*" Brown Working Papers in the Arts & Sciences, Southwestern University, Volume II, Paper 5, **2002**.

### Invited Presentations and Lectures

2005 Niemeyer, Emily D.; Chipuk, Joseph E.; Brodbelt, Jennifer S. "Isomeric differentiation of common tea catechins using gas-phase hydrogen/deuterium exchange reactions" Eastern Analytical Symposium, Somerset, NJ

2003 Niemeyer, Emily D. "Message in a (plastic) bottle: phthalate ester concentrations in PET bottles exposed to UV radiation" University of Texas at Austin Analytical Division Fall Faculty Seminar Series

2003 Niemeyer, Emily D.; Hobgood-Oster, Laura; Johnson, Melissa "Toxic waters, polluted landscapes: developing an interdisciplinary understanding of the environmental complexities within a Mexican *colonia*" *Science and Society: Linking Chemistry with Service Learning and Public Policy Issues*; 226<sup>th</sup> American Chemical Society National Meeting, New York, NY

### National Conference Presentations (\* denotes Southwestern University undergraduate co-authors)

2007 Freeman, Jessica D.;\* Niemeyer, Emily D. "Analysis of common black tea theaflavins using normal-phase high performance liquid chromatography" 233<sup>rd</sup> American Chemical Society National Meeting, Chicago, IL

2007 Nguyen, Phuong M.;\* Niemeyer, Emily D. "Effects of nitrogen application on the antioxidant properties of basil (*Ocimum basilicum* L.)" 233<sup>rd</sup> American Chemical Society National Meeting, Chicago, IL

2006 Niemeyer, Emily D.; Brodbelt, Jennifer S. "Isomeric differentiation of common tea catechins using gas-phase hydrogen/deuterium exchange reactions" 232<sup>nd</sup> American Chemical Society National Meeting, San Francisco, CA

2005 Casterline, Blithe A.;\* Sher, Sarah R.;\* Niemeyer, Emily D. "Quantification of phthalate ester leaching from clean and tinted poly(ethylene terephthalate) bottles as a function of ultraviolet light exposure" Council on Undergraduate Research Posters on the Hill, Washington, D.C.

2005 Casterline, Blithe A.;\* Niemeyer, Emily D. "Quantification of phthalate ester leaching from tinted poly(ethylene terephthalate) bottles as a function of UV light exposure" 229<sup>th</sup> American Chemical Society National Meeting, San Diego, CA

2005 Sher, Sarah R.;\* Niemeyer, Emily D. "UV exposure to clear PET water bottles and its effects on the migration of phthalate ester plasticizers" 229<sup>th</sup> American Chemical Society National Meeting, San Diego, CA

- 2005 Hobgood-Oster, Laura; Johnson, Melissa; Niemeyer, Emily D. "Challenges to sustainability: A multidisciplinary perspective on U.S.-Mexico borderland environmental injustice" International Conference on Environmental, Cultural, Economic and Social Sustainability, East-West Center, University of Hawai'i
- 2004 Martin, Heather;\* Niemeyer, Emily D. "Determination of phthalate ester concentrations in PET bottles exposed to UV radiation" 227<sup>th</sup> American Chemical Society National Meeting, Anaheim, CA
- 2004 Hatley, Jade;\* Bruns, Kerry A.; Niemeyer, Emily D. "Detection of tetracycline antibiotics and tetracycline-resistant genes in surface water and topsoil surrounding livestock operations" 227<sup>th</sup> American Chemical Society National Meeting, Anaheim, CA
- 2003 Alter, Krystyn P.;;\* Hayter, Wendy M.;;\* Niemeyer, Emily D. "Investigation of the microenvironment and microviscosity surrounding a model solute randomly dispersed in poly(dimethylsiloxane)" 225<sup>th</sup> American Chemical Society National Meeting, New Orleans, LA
- 2002 Owens, Janel E.;;\* Niemeyer, Emily D. "Analysis of Industrial Water Pollution within a Mexican *Colonia*" 224<sup>th</sup> American Chemical Society National Meeting, Boston, MA
- 2002 Alter, Krystyn P.;;\* Niemeyer, Emily D. "Acid-Base Reaction Chemistry within a Reverse Micelle System Formed in Supercritical CO<sub>2</sub>" 224<sup>th</sup> American Chemical Society National Meeting, Boston, MA
- 2002 Niemeyer, Emily D.; Hobgood-Oster, Laura; Johnson, Melissa "Relating Chemical Analysis to Environmental Justice in a Border *Colonia*" 224<sup>th</sup> American Chemical Society National Meeting, Boston, MA
- 2002 Niemeyer, Emily D. "A Collaborative Project to Examine Environmental Justice in a Local Community" 17<sup>th</sup> Biennial Conference on Chemical Education, Bellingham, WA
- 2001 Molloy, John L.;;\* Niemeyer, Emily D. "Acid-Base Reaction Chemistry within Reverse Micelles Formed in Liquids and Supercritical CO<sub>2</sub>" 221<sup>st</sup> American Chemical Society National Meeting, San Diego, CA
- 2001 Hayter, Wendy M.;;\* Niemeyer, Emily D. "Investigation of the Microenvironment Surrounding Model Solutes Randomly Dispersed in Poly(dimethylsiloxane)" 221<sup>st</sup> American Chemical Society National Meeting, San Diego, CA
- 2001 Au, Christie;\* Niemeyer, Emily D. "Analysis of Organochlorine Pesticides on the Shoreline of Town Lake in Austin, TX" 221<sup>st</sup> American Chemical Society National Meeting, San Diego, CA

### Selected University Service

- 2006-present Chair, Department of Chemistry and Biochemistry
- 2006, 2007 Brown Scholars Committee
- 2005 Faculty Search Committee, Department of Chemistry and Biochemistry
- 2003 Faculty Search Committee, Department of Chemistry and Biochemistry
- 2003 Faculty Search Committee, Department of Psychology
- 2002-2004 Honorary Degrees Committee
- 2002-2003 Faculty sponsor, Environmental Action Committee
- 2001 Search Committee, Southwestern University Provost and Dean of Faculty
- 2001-2002 Associated Colleges of the South Environmental Initiative Faculty Fellow
- 2001 Search Committee, Head Women's Basketball Coach
- 2001-2005 Faculty representative, Morris K. Udall Scholarship
- 2000-2002 Faculty Affairs Council
- 2000 Coordinator of the Southwestern University Fleming Lectures in Science
- 1999-2002 Chair, Environmental Studies Program
- 1999-2001 Program Committee, Associated Colleges of the South Environmental Initiative
- 1999 Diversity Enrichment Committee
- 1999 Perspectives on Knowledge Committee
- 1998-2006 Faculty sponsor, student affiliates of the American Chemical Society
- 1998-2006 Environmental Studies Committee