

Fereshteh Haddadian Billiot

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Education

- Ph.D Analytical Chemistry (Organic/Analytical) (Dissertation Title: *Chiral Recognition Using Polymeric and Monomeric Amino Acid Based Surfactants*) (GPA 4.0), Louisiana State University, Baton Rouge LA, Summer 2000
- M.S. Analytical Chemistry (Analytical/Bioanalytical) (Thesis Title: *Capillary Electrophoresis of Phospholipids and Phosphoamino Acids Via Indirect Photometric Detection*) (GPA 3.6), Miami University, Oxford OH, Summer 1997
- M.S. Organic Chemistry (Organic/Organometallic) (Thesis Title: *The Synthesis and Characterization of Phosphine Functionalized Crown Ethers by Use of Spectroscopic and x-ray Methods*) (GPA 3.8), Ball State University, Muncie IN, Fall 1995
- B.S. Industrial Chemistry (GPA 3.5), Shariff University of Technology, Tehran-Iran, Spring 1989

Work Experience

Texas A&M University-Corpus Christi

Professor of Environmental/Analytical Chemistry

9/20018 – present

Associate Professor of Environmental/Analytical Chemistry

9/2006 – 2018

Assistant Professor of Chemistry

9/2000 – 8/2006

Quality Control and Research and Development Chemist

Sian Daru-Iran (Pharmaceutical Company)

1989-1992

Teaching Experience (Courses taught at Texas A&M University-Corpus Christi)

Undergraduate Courses:

General Chemistry I and lab (CHEM 1411)

General Chemistry II and lab (CHEM 1412)

Instrumental Analysis and lab (CHEM 4312)
Organic Chemistry I and lab (CHEM 3411)
Organic Chemistry I and lab (CHEM 3412)
Environmental Chemistry and lab (CHEM 3443)
Advanced Instrumental Analysis and lab (CHEM 4109)
Advanced Instrumental Analysis and lab (CHEM 4309)
Senior Research I (CHEM 4291)
Independent Study (CHEM 4696)

Graduate Courses:

Advanced Environmental Chemistry (CHEM 5417)
Environmental Instrumental Analysis (CHEM 5431)

Research Interest:

Texas A&M University Corpus Christi-2000-Present

Research interests:

Examination of trapping efficiency of poly aromatic hydrocarbons (PAHs) with PUF/cyclodextrin (CD) sorbent in modified high volume air sampling- The ultimate goal of this study was to create an accurate and cost-effective high volume air sampling method for the analysis of PAHs. The purpose of this study was to investigate the interaction of solid CDs with vapor phase PAHs, including pyrene, naphthalene, and anthracene. This project resulted in a master thesis for Youkari Watanabe.

Examination of the interactions of endocrine disruptors with the human chorionic growth hormone using fluorescence spectroscopy- In this study, we were utilizing fluorescence spectroscopy to study the interaction of suspected endocrine disruptors with proteins linked with the endocrine system. This project is completed.

Analysis of Organic versus Total Heavy Metal Content in Water, Sediment, and Aquatic Species in Corpus Christi Area- In this study we investigated trace toxic metal distribution in sediment, water, and select aquatic species in Corpus Christi area. In particular, the research focused on determining the distribution of trace toxic metals in the local environment and determining the ratio of inorganic versus organic metals in the sediment and water samples compared to the various aquatic species examined in this study. This project is completed.

Synthesis and Characterization of Novel Amino Acid Based Surfactants for the Enantiomeric Separation of Chiral Compounds Using Capillary Electrophoresis- The research focuses on the synthesis, characterization and evaluation of a variety of amino acid-based surfactants to be used as pseudostationary phases for the analytical separation of chiral compounds using capillary electrophoresis. In particular, the objective of the research is to gain insight into the factors that govern chiral selectivity with these novel pseudostationary phases. Several undergraduate students are currently working on different aspects of this project.

Sensory and Chemical Assessment of Wild Harvest and Pond Raised Shrimp- The purpose of the research was to examine the chemical basis for differences in taste of farm raised shrimp versus gulf caught shrimp. This project is completed.

Development of a “rapid” bioassay to screen for estrogenic activity using zebrafish embryos- This research was conducted in collaboration with Dr. Eugene Billiot, Dr. Joe Fox, and Dr. David Moury. This research resulted in a thesis for Andrew Baker, a manuscript which is in preparation.

Retention Time Locking Method for Analysis of Endocrine Disruptors- A collaborative project (with Dr. Eugene Billiot) involves the use of a new method called “Retention Time Locking” developed by Agilent Technologies. We have used this method to screen “qualitatively” for around 600 known or suspected EDCs in sediment and water samples in the Coastal Bend region. One manuscript is submitted to Texas Journal of Science.

Anti-Microbial activity of Chiral Amino Acid Surfactants- A recent collaboration with a biology faculty to study anti-microbial activities of amino acid surfactants developed for chiral separations. Currently, three undergraduate students are working on this project.

PUBLICATIONS / PRESENTATIONS

- I. Peer Reviewed Published Manuscripts- Student names are marked with (*)**
1. Zoe Ramos*, Gabrielle A. Rothbauer*, Johnathan Turner*, Corbin Lewis*, Kevin Morris, Eugene Billiot, **Fereshteh Billiot**, Yayin Fang “Chiral Recognition of Leucine/Arginine and Effect of pH on Binding of Arginine to Leucine Bases Surfactants. Journal of Chromatographic Sciences (2019) 57(1), 54.
2. Gabriel Rothbauer*, Elisabeth Rutter*, Chelsea Reuter*, Eugene J. Billiot, Yayin Fang, **Fereshteh H. Billiot**, and Kevin F. Morris “Nuclear Magnetic Resonance Investigation of the Effect of pH on Micelle Formation by the Amino Acid-Based Surfactant Undecyl L-Phenylalaninate” Journal of Dispersion Science and Technology (2018) 21(1), 1369-153.
3. Kevin F. Morris, Eugene J. Billiot, **Fereshteh. H. Billiot**, Jordan A. Ingle*, Stephanie R. Zack*, Kevin B. Krause*, Kenny B. Lipkowitz, William M. Southerland & Yayin Fang, *Investigation of chiral recognition by molecular*

micelles with molecular dynamics simulations Journal of Dispersion Science and Technology, (2018), 39(1), 45-54.

4. Kevin F. Morris, Eugene J. Billiot, **F. H. Billiot**, Jordan A. Ingle*, Stephanie R. Zack*, Kevin B. Krause*, Kenny B. Lipkowitz, William M. Southerland & Yayin Fang, *Investigation of chiral recognition by molecular micelles with molecular dynamics simulations* Journal of Dispersion Science and Technology, published Feb 16, **2017**.
5. C. Lewis*, B. Hughes*, B., M. Vasquez*, A. Wall, V. Northrup*, K. F. Morris, **F. H. Billiot**, E. J. Billiot, Y. Fang “Effect of pH on Binding of Sodium, Lysine, and Arginine Counterions to an L-Undecyl Leucinate, Journal of Surfactants and Detergents, September, **2016**; 1175-1188
6. K. F. Morris, E. J. Billiot, **F. H. Billiot**, K. B. Lipkowitz, W. M. Southerland, Y. Fang “Molecular Dynamics Simulation and NMR Investigation of the Association of the β -Blockers Atenolol and Propranolol with a Chiral Molecular Micelle” Chemical Physics, **2015**, 457, 133-146.
7. K. F. Morris, E. J. Billiot, **F. H. Billiot**, A. Garcia*, K. B. Lipkowitz, W. M. Southerland and Y. Fang, A molecular dynamics simulation study of the association of 1,1'-binaphthyl-2,2'-diyl hydrogenphosphate enantiomers with a chiral molecular micelle, Chemical Physics, **2014**, Vol. 439, 36-43.
8. K. F. Morris, E. J. Billiot, **F. H. Billiot**, K. B. Lipkowitz, W. M. Southerland and Y. Fang “A Molecular Dynamics Simulation Study of Two Dipeptide Based Molecular Micelles: Effect of Amino Acid Order” Open Journal of Physical Chemistry” **2013**, Vol. 3 No. 1, 20-29.
9. K. F. Morris, E. J. Billiot, **F. H. Billiot**, K. B. Lipkowitz, W. M. Southerland and Y. Fang, *Investigation of Chiral Molecular Micelles by NMR Spectroscopy and Molecular Dynamics Simulation*, Open Journal of Physical Chemistry, **2012**, Vol. 2 No. 4, 240-251.
10. E. J. Billiot, **F. H. Billiot**, I. M. Warner “Optimization of 12 Chiral Analytes with 8 Polymeric Surfactants” Journal of Chromatographic Science, **2008**, 46(9), 757-763.
11. **F. H. Billiot**, E. J. Billiot, Y. Ng*, I. M. Warner “Chiral Separation of Norlaudanosoline, Laudanosoline, Laudanisone, Chlorothalidone, and three Banzoin Derivatives Using Amino Acid Based Molecular Micelles” Journal of Chromatographic Science, **2006**, 44(2), 64-69.

12. **F. H. Billiot**, M. C. McCarroll, E. J. Billiot, I. M. Warner “Chiral recognition of binaphthyl derivatives using electrokinetic chromatography and steady-state fluorescence anisotropy: effect of temperature. *Electrophoresis*, **2004**, 25(4-5), 753-757.
13. B. C. Valle, **F. H. Billiot**, S. A. Shamsi, X. Zhu, A. M., I. M. Warner “Combination of cyclodextrins and polymeric surfactants for chiral separations. *Electrophoresis*, **2004**, 25, 743-756.
14. **F. H. Billiot**, M. E. McCarroll, E. J. Billiot, I. M. Warner “Effect of Temperature on Chiral Recognition of Binaphthyl Derivatives in Electrokinetic Chromatography and Steady State Fluorescence Anisotropy” *Electrophoresis*, **2004**, 25, 753-757.
15. **F. H. Billiot**, M. E. McCarroll, E. J. Billiot, I. M. Warner “Chiral recognition of binaphthyl derivatives using electrokinetic chromatography and steady-state fluorescence anisotropy: effect of temperature” *Electrophoresis* **2004**, 25(4-5), 753-757.
16. J. Tarus, R. Agbaria, K. Morris, **F. H. Billiot**, A. Williams, T. Chatman, I. M. Warner “Enantioselectivity of alcohol-modified polymeric surfactants in micellar electrokinetic chromatography” *Electrophoresis*, **2003**, 24, 2499-2504.
17. S. A. Shamsi, B. C. Valle, **F. H. Billiot**, I. M. Warner “Polysodium N-Undecanoyl-L-leucylvalinate: A Versatile Chiral Selector for Micellar Electrokinetic Chromatography. *Anal. Chem.*, **2003**, 75, 379-782.
18. **F. H. Billiot**, M. McCarroll, E. Billiot, J. Rugutt, I. M. Warner “Comparison of the Aggregation Behavior of 15 Polymeric and Monomeric Dipeptide Surfactants in Aqueous Solution” *Langmuir* **2002**; 18(8); 2993-2997.
19. K. F. Morris, R. S. Hickock, **F. H. Billiot**, I. M. Warner, I. M. “A Pulsed Field Gradient NMR Study of Solubilization Equilibria in Chiral Micellar and Polymeric Surfactant Solutions” *Meg. Reson. In Chemistry*, **2002**, 40, 755-762.
20. **F. H. Billiot**, M. E. McCarroll, E. J. Billiot, J. K. Rugutt, I. M. Warner, I. M. “Comparison of the Aggregation Behavior of 15 Polymeric and Monomeric Dipeptide Surfactants in Aqueous Solution” *Langmuir*, **2002**, 18(8), 2993-2997.
21. **F. H. Billiot**, E. J. Billiot, I. M. Warner “Site of Interaction of Binaphthyl Derivatives with Sodium N-undecanoyl leucyl-leucinate” *Chromatogr. A*, **2002**, 950, 233.

22. M. C. McCarroll, **F. H. Billiot**, I. M. Warner "Measuring Chiral Recognition with Fluorescence Anisotropy" *J. Am. Chem. Soc.*, **2001**, 123(13), 3173.
23. M. T. Mizwicki, **F. Haddadian**, B. S. Muehl, B. N. Storhoff, J. C. Huffman "Synthesis and Study of Triphenylphosphines Functionalized at the 4-Positions through the Nitrogen Atoms in 1,4,7,10-Tetraoxa-13-azacyclopentadecane and the X-ray Structure of the Oxide of the Molecule Substituted at All Three Positions" *Organometallics*, **2001**, 20(5), 963.
24. **F. H. Billiot**, E. J. Billiot, I. M. Warner "Comparison of monomeric and polymeric amino acid based surfactants for chiral separations" *J. Chromatogr. A* **2001**, 922(1-2), 329-338.
25. **F. H. Billiot**, F. Franzek, F., S. Watkins "A Chiral Furocumarin" *Acta Crystal C*, **2000**, C, 136.
26. **F. Haddadian**, S. A. Shamsi, I. M. Warner, "Chiral Separations Using Polymeric Dipeptide Surfactants: Effect of Number of Chiral Centers and Steric Centers", *Journal of Chromatography A*, **1999**, 858, 219-227.
27. **F. Haddadian**, E. J. Billiot, S. A. Shamsi, I. M. Warner "Chiral Electrokinetic Chromatography Using Dipeptide Polymeric Surfactant" *Electrophoresis*, 20, **1999**, 2011
28. **F. Haddadian**, S. A. Shamsi, I. M. Warner "Separation of Saturated and Unsaturated Free Fatty Acids Using Capillary Electrophoresis with Indirect Photometric Detection" *J Chromatogr Sci* 37, **1999**, 103.
29. W. Crowder, **F. Haddadian**, M. Weitzel, N. Danielson "Capillary Electrophoresis of Phosphoamino Acids with Indirect Photometric Detection" *Anal Chim Acta*, 384, **1999**, 127
30. N. Danielson, C. Heenan, **F. Haddadian** "Fluorometric Determination of Fructose, Glucose, and Sucrose using Zirconyl Chloride" *Microchem. J.* 63, **1999**, 405.
31. **F. Haddadian**, S. A. Shamsi, N. Danielson "Capillary Electrophoresis of Phospholipids with Indirect Photometric Detection" *J. Chrom. Sci.* 36, **1998**, 395.

II. List of Non-Peer Reviewed Publications- Student names are marked with (*)

1. Z. Ramos*, F. Billiot, E. Billiot, Effect of pH and Counterion Choice on Chiral Separation of Binaphthyl Derivatives by L-Undecyl Leucine Surfactant, Texas A&M University McNair Research Journal, Volume III, Summer 2016, pp81-87.

III. Published Abstracts and Meeting Proceedings

1. Benson, A. (Author & Presenter), Billiot, E. J. (Author), Billiot, F. H. (Author), Morris, K. F. (Author), "Chiral recognition of single amino acid surfactants leucine, isoleucine, and norleucine in the presence of diamine counterion with different chain lengths," 255th ACS National Meeting & Exposition, American Chemical Society, New Orleans, LA. (March 19, 2018).
2. Nguyen, N. (Author & Presenter), Billiot, E. J. (Author), Billiot, F. H. (Author), Morris, K. F. (Author), "Effect of diamine counterion chain length and pH on the physical properties and chiral recognition ability of amino acid based macromolecular assemblies," 255th ACS National Meeting & Exposition, American Chemical Society, New Orleans, LA. (March 19, 2018).
3. Riskey, A. (Author & Presenter), Billiot, E. J. (Author), Morris, K. F. (Author), Billiot, F. H. (Author), Fang, Y. (Author), "Effect of pH and counterion on chiral recognition of undecylenic leucine surfactant," 255th ACS National Meeting & Exposition, American Chemical Society, New Orleans, LA. (March 19, 2018).
4. Tubbs, S. (Author & Presenter), Billiot, E. J. (Author), Morris, K. F. (Author), Billiot, F. H. (Author), "Investigation of chiral recognition of dipeptide based micellar systems," 255th ACS National Meeting & Exposition, American Chemical Society, New Orleans, LA. (March 19, 2018).
5. Subniak, S. (Author & Presenter), Billiot, F. H. (Author), Billiot, E. J. (Author), Morris, K. F. (Author), "Physical properties of undecyl valine surfactant at different pHs," 255th ACS National Meeting &

Exposition, American Chemical Society, New Orleans, LA. (March 19, 2018).

6. Aleksich, M. (Author & Presenter), Billiot, E. J. (Author), Morris, K. F. (Author), Billiot, F. H. (Author), "Study of amino acid surfactant undecyl leucine using diffusion ordered spectroscopy technique," 255th ACS National Meeting & Exposition, American Chemical Society, New Orleans, LA. (March 19, 2018).
7. Szczepanski, A. (Author), Billiot, F. H., Deborah, T., Brownholland, D., "Organic synthesis of O-acylated amino acid surfactants to examine antibacterial properties," 255th ACS National Meeting & Exposition, 255th ACS National Meeting & Exposition, American Chemical Society, New Orleans, LA. (March 18, 2018).
8. Ingle, J. (Author), Kevin, K. (Author & Presenter), Billiot, E. J. (Author), Morris, K. F. (Author), Billiot, F. H. (Author), Fang, Y. (Author), "Effect of pH on properties of amino acid based surfactants," 253rd ACS National Meeting & Exposition, American Chemical Society, San Francisco, CA. (April 3, 2017).
9. Ramos, Z. (Author & Presenter), Lewis, C. (Author), Billiot, E. J. (Author), Morris, K. F. (Author), Billiot, F. H. (Author), "Identification and characterization of analyte binding sites in chiral molecular micelles," 253rd ACS National Meeting & Exposition, American Chemical Society, San Francisco, CA. (April 3, 2017).
10. Lewis, C. (Author & Presenter), Billiot, F. H. (Author), Billiot, E. J. (Author), Morris, K. F. (Author), Fang, Y. (Author), "Investigation of micelle formation using molecular modeling and NMR," 253rd ACS National Meeting & Exposition, American Chemical Society, San Francisco, CA. (April 3, 2017).
11. Kevin, K. (Author & Presenter), Billiot, E. J. (Author), Ingle, J. (Author), Morris, K. F. (Author), Billiot, F. H. (Author), Fang, Y. (Author), "Molecular dynamics simulation study of chiral recognition by dipeptide-based molecular micelles," 253rd ACS National Meeting & Exposition, American Chemical Society, San Francisco, CA. (April 3, 2017).

12. Rothbauer, G. (Author & Presenter), Rutter, E. (Author), Billiot, E. J. (Author), Morris, K. F. (Author), Billiot, F. H. (Author), Fang, Y. (Author), "NMR investigation of the effect of pH on micelle formation by an amino acid-based surfactant," 253rd ACS National Meeting & Exposition, American Chemical Society, San Francisco, CA. (April 3, 2017).
13. Lovato, Devin*; Iglesias, Jonnie*; Turner, Jeffrey; Buck, Gregory; Billiot, Fereshteh; Billiot, Eugene, "*Antibacterial analysis of an isoleucine based surfactant*", 251st ACS National Meeting & Exposition, San Diego, CA, March 13-17, 2016
14. Billiot, Fereshteh H.; Vera, Simon*; Ramos, Zoe*; Morris, Kevin F.; Lewis, Corbin*; Billiot, Eugene, "*Effect of pH on physical properties of an amphiphilic leucine valine molecule*" 251st ACS National Meeting & Exposition, San Diego, CA, March 13-17, 2016
15. Lewis, Corbin*; Billiot, Eugene; Billiot, Fereshteh; Morris, Kevin; Fang, Yayin, "*Investigation of polymerized molecular micelle formation with molecular modeling and NMR*", 251st ACS National Meeting & Exposition, San Diego, CA, March 13-17, 2016
16. Ingle, Jordan*; Billiot, Fereshteh; Billiot, Eugene; Fang, Yayin; Morris, Kevin, "*Molecular dynamics simulation study of the binding of chlorthalidone enantiomers to a chiral molecular micelle*", 251st ACS National Meeting & Exposition, San Diego, CA, March 13-17, 2016
17. Witzleb, Tyler*; Billiot, Fereshteh; Billiot, Eugene; Morris, Kevin, "*NMR investigation of micelle formation by a chiral dipeptide surfactant*", 251st ACS National Meeting & Exposition, San Diego, CA, March 13-17, 2016
18. Hughes, Burgoyne*; Billiot, Fereshteh; Billiot, Eugene; Morris, Kevin "*NMR Investigation of the effect of pH on aggregation, counterion binding, and amide proton exchange in amino-acid-based surfactants*", 251st ACS National Meeting & Exposition, San Diego, CA, United States, March 13-17, 2016
19. Georgiadis, D. *, Billiot, F. H., Billiot, E. J., "Effect of pH on isocyanate amino acid based surfactants", 249 American Chemical Society, American Chemical Society, Denver Colorado. (March 20, 2015).

20. Hoffman, C. *, Billiot, E. J., Billiot, F., "Investigation of β -blocker association with a chiral molecular micelle by means of molecular dynamics simulations", 249 American Chemical Society, American Chemical Society, Denver Colorado. (March 20, 2015).
21. Zack, Z. *, Billiot, E., Billiot, F., "Investigation of the mechanism of chiral recognition by molecular modeling", 249th American Chemical Society National meeting, American Chemical Society, Denver Colorado. (March 20, 2015).
22. Lewis, C*, Billiot, F. H., Billiot, E. J., "Investigation of the aggregation and amide proton exchange in monomeric amino-acid-based surfactants" 249 American Chemical Society Meeting, American Chemical Society, Denver Colorado" (March 20, 2015).
23. Lewis, C. *, Billiot, F. H., Billiot, E. J., NMR "Investigation of the effect of pH on aggregation, counterion binding, and amide proton exchange in amino-acid-based surfactants" 249 American Chemical Society Meeting, American Chemical Society, Denver Colorado. (March 20, 2015).
24. Lewis, C. *, Billiot, E. J. , Billiot, F. H. , Morris, K. , Heller, W., Turner, J., Vasquez, M. *, Apacible, S. *, "Characterization of Amino Acid Based Surfactants (effect of pH, and concentration)," 247th ACS National Meeting & Exposition, American Chemical Society, Dallas, TX. (March 16, 2014).
25. Vasquez, M. *, Turner, J. *, Billiot, E. J. , Billiot, F. H., Morris, K., Olson, M. A. , "Effect of pH on Physical and Chemical Properties of Undecylenic and Undecanoic Amino Acid Based Surfactants," 2014 Pittsburgh Conference, Chicago, Il. (March 3, 2014).
26. Northrop, V. *, Billiot, E. J., Billiot, F. H. , Morris, K. , Fang, Y. "Investigation of chiral amino acid-based micelles by means of NMR spectroscopy," 247th ACS National Meeting & Exposition, American Chemical Society, Dallas, TX. (March 16, 2014).
27. Gladis, A. *, Flanigan, M. *, Billiot, E. J., Billiot, F. H. , Morris, K. , Fang, Y. , "Molecular dynamics simulation study of β -blocker binding to a chiral molecular micelle," 247th ACS National Meeting & Exposition, American Chemical Society, Dallas, TX. (March 16, 2014).

28. Flanigan, M. *, Billiot, E. J., Billiot, F. H. , Morris, K. , Fang, Y.
 "Investigation of the effect of pH on the aggregation of an amino acid based surfactant" 247th ACS National Meeting & Exposition, American Chemical Society, Dallas, TX. (March 16, 2014).

29. Georgiadis, D. *, Billiot, F. H., Billiot, E. J., Georgiadis, J. *, Synthesis and Characterization of Isocyanate Amino Acid Based Surfactants, SACNAS 2014, Los Angeles California. (October 20, 2014).

30. Lewis, C. *, Billiot, F. H., Billiot, E. J., Wall, A. *, Morris, K., Effect of pH on Aggregation and Amide Proton Exchange in Amino-Acid-based Surfactants " 2014 UTSA College of Science Conference, UTSA, San Antonio, Texas. (October 4, 2014)

31. Lewis, Corbin*; Billiot, Eugene; Billiot, Fereshteh; Morris, Kevin; Heller, William; Turner, Jonathan*; Vasquez, Mariela*; Apacibele, Scilyne*, *Characterization of Amino Acid Based Surfactants (effect of pH, and concentration)*: Abstracts of Papers, 247th ACS National Meeting & Exposition, Dallas, TX, United States, March 16-20, 2014

32. Northrup, Victoria*; Billiot, Fereshteh; Billiot, Eugene; Morris, Kevin; *Investigation of chiral amino acid-based micelles by means of NMR spectroscopy*; Abstracts of Papers, 247th ACS National Meeting & Exposition, Dallas, TX, United States, March 16-20, 2014

33. Gladis, Ashley*; Fang, Yayin; Billiot, Eugene; Morris, Kevin; *Molecular dynamics simulation study of β -blocker binding to a chiral molecular micelle*, Abstracts of Papers, 247th ACS National Meeting & Exposition, Dallas, TX, United States, March 16-20, 2014

34. Flanigan, Mark*; Billiot, Fereshteh; Billiot, Eugene; Morris, Kevin; *NMR investigation of the effect of pH on the aggregation of an amino acid-based surfactant* Abstracts of Papers, 247th ACS National Meeting & Exposition, Dallas, TX, United States, March 16-20, 2014

35. Billiot, Fereshteh; Billiot, Eugene; Morris, Kevin; Turner, Jonathan*; Vasquez, Mariela*; Olson, Mark, *Effect of pH on Physical and Chemical Properties of Undecylenic and Undecanoic Amino Acid Based Surfactants*, Pittsburgh National Conference in Chicago, IL; March 3, 2014

36. Vasquez, M. *, Turner, J., Apacible*, S., Billiot, E. J. , Billiot, F. H. , Morris, K. , Heller, W., " pH and Physical Properties of Amino Acid

Based Surfactants" 2013 SACNAS National Conference, San Antonio, Texas, (October 2013).

37. Georgiadis, J. *, Georgiadis D. *, Billiot, F. , Billiot, E., Synthesis and Characterization of Isocyanate Amino Acid Based Surfactants, 2013 SACNAS National Conference, San Antonio, Texas, (October 2013).
38. Lai, Chinh*; Billiot Eugene and Fereshteh; Georgiadis, Jeremias*” Synthesis and characteristic of Undecyl-L-Glutamic surfactant” South Texas Chapter of Sigma Xi 12th Annual Undergraduate Research Symposium. Texas A&M University Corpus Christi, Corpus Christi, Texas, March 2013.
39. Kevin F. Morris, Eugene J. Billiot, Fereshteh H. Billiot, Kenny B. Lipkowitz, William M. Southerland, and Yayin Fang “Investigation of Chiral Molecular Micelles by Molecular Dynamics Simulation” 245 ACS National meeting, April 2013, New Orleans.
40. Turner, Jonathan*; Billiot, Eugene; Billiot, Fereshteh; Apacible, Scilyn*; Vazquez, Mariela*; Morris, Kevin, PhD; Olson, Mark, PhD “Effect of pH on micellization of Amino acid based Surfactants, 245 ACS National meeting, April 2013, New Orleans LA
41. Morris, Kevin; Billiot, Eugene; Billiot, Fereshteh; Lipkowitz, Kenny; Fang, Yayin; Southerland, William; Investigation of chiral molecular micelles by means of molecular dynamics simulation and NMR spectroscopy: Abstracts of Papers, 245th ACS National Meeting & Exposition, New Orleans, LA, United States, April 7-11, 2013.
42. Georgiadis, Jeremias*; Billiot, Eugene and Fereshteh, PhD ; Garza, Manuel “Characterization and separation of branched amino acid based surfactants using capillary electrophoresis” 2012 SACNAS National Conference. Seattle, Washington, October 2012.
43. Mariela Vasquez*, Jonathan Turner*, Scilyn Apacible*, Jeremias Georgiadis*, Feri Billiot, Billiot, E. J., Chiral Separation of Enantiomers Using Single and Double Bond Amino Acid Based Surfactants by Capillary Electrophoresis, 2012 SACNAS National Conference. Seattle, Washington, October 2012
44. Billiot, Fereshteh; Billiot, Eugene; Garza, Manuel*; Georgiadis, Jeremias*; *Synthesis and Characterization of Branched Amino Acid Based Surfactants for the Separation of Chiral Compounds in Capillary Electrophoresis*; Abstracts, 64th Southeast Regional Meeting of the

American Chemical Society, Raleigh, NC, United States, November 14-17 (2012)

45. Oscar Villarreal*, Solomon Bortey*, Manual Garza*, Nikolai Kraiouchkine, Eugene Billiot, Fereshteh Billiot, Synthesis Characterization and Utilization of Branched Amino Acid Based Surfactants as Pseudostationary Phases for the Enantiomeric Separation of Chiral Compounds with Capillary Electrophoresis, Penn State Summer Research Conference, 2009
46. De Santos, Janie L. *; Clark, Andrea*; Corpus, Celina*; Billiot, Fereshteh; Billiot, Eugene, Effect of pH on physical properties of amino acid-based surfactants Abstracts of Papers, 237th ACS National Meeting, Salt Lake City, UT, United States, March 22-26, 2009
47. Janie De Santos*, Melissa Van Dellan*, Lara Keeling*, Aldo Garcia*, Eugene Billiot and Fereshteh Billiot, *Synthesis and Characterization of "Branched" Amino Acid Based Surfactants*, SACNAS National Conference, 2008
48. Trevino, Amanda L*.; Garza, Gerardo*; Heinold, Janice*; Billiot, Eugene J.; Billiot, Fereshteh. *An examination of chiral interactions with amino acid based surfactants.* Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States, March 26-30, 2006 (2006)
49. Garza, Gerardo*; Croft, Michael*; Billiot, Eugene J.; Billiot, Fereshteh. *Characterization of amino acid based surfactants.* Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States, March 26-30, 2006 (2006)
50. Gonzales, Christine*; Arambide, Gerardo*; Billiot, Eugene J.; Billiot, Fereshteh. *Development of a rapid, low cost, semiquantitative, ultratrace GC/MS method for endocrine disruptors.* Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States, March 26-30, 2006 (2006)
51. Boyd, Cynthia*; Miles, Clark*; Billiot, Fereshteh; Billiot, Eugene J.. *Examination of the distribution of heavy metals in sediment and water in south Texas.* Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States, March 26-30, 2006 (2006)
52. Heinold, Janice*; Jiang, Ping; Lipkowitz, Kenny; Billiot, Eugene J.; Billiot, Fereshteh. *Molecular dynamics simulations of poly-(L,L) sodium undecyl valine-leucine and poly-(L,L) sodium undecyl leucine-valine in*

water. Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States, March 26-30, 2006 (2006)

53. Jiang, Ping; Lipkowitz, Kenny; Billiot, Eugene J.; Billiot, Fereshteh. *Molecular dynamics simulations of poly-sodium undecyl (L,L)-alanine-leucine and poly-sodium undecyl (L,L)-leucine-alanine in water.* Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States, March 26-30, 2006 (2006),
54. Gonzales, Christine M. *; Swargam, Sridahr*; Billiot, Eugene J.; Billiot, Fereshteh 229th ACS National Meeting, San Diego, CA, March 13-17, 2005 “*Qualitative analysis of endocrine disrupting chemicals (EDCs) in water bodies of southeastern parts of Texas using retention time locking technique (RTL) on GC/MS*”
55. Trevino, Amanda L. *; Watanabe, Yukari*; Billiot, Fereshteh; Billiot, Eugene J. 229th ACS National Meeting, San Diego, CA, March 13-17, 2005 “*Development of a modified air sampling technique for the measurement of PAHs using a PUF/cyclodextrin sorbent*”
56. Mark Olson*, Mike Forst*, Mikhail Faybyshev*, Eugene Billiot, Fereshteh Billiot Council of Undergraduate Research Posters on the Hill, April 20, 2004, Characterization and Comparison of the Physical Properties of a Novel Class of Branched Amino Acid Based Surfactants Versus Their Linear Counterparts,
57. Watanabe, Yukari*; Billiot, Fereshteh; Billiot, Eugene J. 227th ACS National Meeting, Anaheim, CA, United States, March 28-April 1, 2004, Investigation of Modified High Volume Air Sampling Technique for PAHs with Cyclodextrins,
58. Mark Olson*, Mike Forst*, Mikhail Faybyshev*, Eugene Billiot, Fereshteh Billiot Society for the Advancement of Chicanos and Native Americans in Science National Conference, 2003, *Characterization of Novel Linear and Branched Amino Acid Based Surfactants Using Steady State Fluorescence Spectroscopy*
59. Lowry, Roxy J. *; Billiot, Fereshteh; Lowe, Robert*: Billiot, Eugene J., 225th ACS National Meeting, New Orleans, LA, United States, March 23-27, 2003 *Examination of the Interactions of Endocrine Disruptors with the Human Chorionic Growth Hormone using Fluorescence Spectroscopy*,
60. Mark Olson*, Mike Forst*, Mikhail Faybyshev*, Eugene Billiot, Fereshteh Billiot; 2nd South Texas American Chemical Society Research Symposium at Texas A&M-Kingsville on November 21, 2003-

Characterization of Novel Linear and Branched Amino Acid Based Surfactants Using Steady State Fluorescence Spectroscopy,

61. Roxy Lowry*, Rob Lowe*, Fereshteh Billiot, Eugene Billiot ; The University of Texas Medical Branch Undergraduate Research Symposium, 2003; *An Examination of the Interactions of Endocrine Disruptors with the Human Chorionic Growth using Fluorescence Spectroscopy*
62. Steven Muniz*; Andrew Baker*; Shane Bokhary*; Anthony Perkins*; David Moury; Fereshteh Billiot; Eugene Billiot, Sigma Xi Undergraduate Research Symposium, Galveston TX, 2002 *Development of a Zebrafish Endocrine Disruption Bioassay*,
63. Jose Perez*, Jason Quesnel*, Jason Guerrero*, Fereshteh Billiot, Eugene Billiot; Society for the Advancement of Chicanos and Native Americans in Science National Conference, 2002, "*Method Development of Quantitative and Qualitative Identification of Endocrine Disruptors in Environmental Samples*
64. Tony Perkins*, Steven Muniz*, David Moury, Fereshteh Billiot, Eugene Billiot; Society for the Advancement of Chicanos and Native Americans in Science National Conference, 2002, "*The Development of Bioassays for Endocrine Disruptors Using Zebrafish*"
65. Mark Koekemoer*, Japheth Silvas*, Jason Quesnel*, Rachelle Landgraf *, Fereshteh Billiot, Eugene Billiot; Pittsburgh Conference in New Orleans Louisiana, 2001 "*Analysis of Endocrine Disruptor Chemicals in Sediment Samples along the Texas Gulf Coast.*"
66. Japheth Silvas*, Jason Quesnel*, Mark Koekemoer*, Fereshteh Billiot, Eugene Billiot; Regional American Chemical Society meeting in San Antonio, 2001; "*Endocrine Disruptors Found in Sediment Samples Along the Texas Gulf Coast and Rio Grande Regions*"
67. Jason Quesnel*, Japheth Silvas*, Mark Koekemoer*, Fereshteh Billiot, Eugene Billiot; Regional American Chemical Society meeting in San Antonio, 2001; *Gas Chromatography/Mass Spectrometry Analysis of Endocrine Disruptor Chemicals Found in Sediment Samples along the Texas Gulf Coast.*
68. Jose Perez*, Jason Quesnel*, Jason Guerrero*, Fereshteh Billiot, Eugene Billiot; The University of Texas Medical Branch Undergraduate Research Symposium, 2001; *Method Development of Quantitative and Qualitative Identification of Endocrine Disruptors in Sediment Samples*

69. Rachelle Landgraf*, Mark Koekemoer*, Lillian Waldbeser, Fereshteh Billiot, Eugene Billiot; The University of Texas Medical Branch Undergraduate Research Symposium, 2001; *Testing for Estrogenic Activity in the Environment via a Yeast Bioassay*.
70. Bertha Cedilo*, Fereshteh Haddadian, Isia Warner, Southwest Regional Meeting of American Chemical Society, 2001 “Studies of Synergistic Effects of Cyclodextrons and Polymeric Surfactants in Chiral Recognition Using Capillary Electrophoresis”.
71. Bertha Cedilo*, Fereshteh Haddadian, Isiah Warner, Pittsburgh Conference of Analytical Chemistry and Applied Spectroscopy, 2001, Studies of Synergistic Effects of Cyclodextrons and Polymeric Surfactants in Chiral Recognition Using Capillary Electrophoresis
72. Mark Koekemoer*, Japheth Silvas*, Jason Quesnel*, Rachelle Landgraf*, Lillian Waldbeser, Fereshteh Billiot, Eugene Billiot; American Chemical Society National meeting in Chicago, Illinois 2000 – *Endocrine Disruptors in South Texas Sediment Samples*
73. Kevin Morris, Fereshteh Billiot, Isiah Warner, American Chemical Society, San Francisco, 2000, A Pulse Field Gradient NMR Investigation of Polymeric Surfactants.
74. Bertha Cedilo, Fereshteh Haddadian, Isia Warner, Pittsburgh Conference of Analytical Chemistry and Applied Spectroscopy, 2000, New Orleans “Cyclodextrin and Polymeric Surfactants for Chiral Separation Using Capillary Electrophoresis”
75. Constantina Kapnissi, Fereshteh Haddadian, Isiah Warner, Pittsburgh Conference of Analytical Chemistry and Applied Spectroscopy, 2000, New Orleans “Separation of Benzodiazepines Using Capillary Electrophoresis”
76. Janet Tarus, Fereshteh Haddadian, Isia Warner, Pittsburgh Conference of Analytical Chemistry and Applied Spectroscopy, 2000, New Orleans “Chiral Separation Using Polymeric Surfactants Polymerized in Presence of Organic Modifiers”.
77. F Haddadian Billiot, Mathew McCarroll, Isiah Warner, Pittsburgh Conference of Analytical Chemistry and Applied Spectroscopy, 2000, Measurement of Physical Properties of Amino Acid Based Surfactants Using Spectroscopic Techniques”.

78. Bertha Cedilo, Fereshteh Haddadian, Isiah Warner, Pittsburgh Conference of Analytical Chemistry and Applied Spectroscopy, 2000, New Orleans “Dipeptide Micelle Polymers New Class of Chiral Selectors for Micellar Electrokinetic Chromatography”.
79. Isiah Warner, Eugene Billiot, Fereshteh Haddadian, Shahab Shamsi, American Chemical Society , San Diego, 1999, Polymeric Surfactants as Pseudostationary Phase in Electrokinetic Chromatography.
80. Fereshteh Billiot, Mathew McCarroll, Eugene Billiot, Isiah Warner, American Chemical Society , New Orleans, 1999, Understanding Enantiomeric Separation of Binaphthyl Phosphate Using Polymeric and Monomeric Amino Acid Based Surfactants with Capillary Electrophoresis
81. Mathew McCarroll, Fereshteh Billiot, Isiah Warner, American Chemical Society , New Orleans, 1999, Fluorescence Anisotropy Study of Chiral Interaction Between Polymerized Amino Acid Surfactants and Chiral Analytes.
82. Mathew McCarroll, Fereshteh Billiot, Isiah Warner, American Chemical Society 1999, Fluorescence Anisotropy Study of Chiral Interaction Between Polymerized Amino Acid Surfactants and Chiral Analytes.
83. Fereshteh Billiot, Eugene Billiot, Isiah Warner, 11th International Symposium of Chiral Discrimination 1999, Chicago, Enantiomer Separations Using Diastereomeric Surfactants.
84. Fereshteh Haddadian, Eugene Billiot, Isiah Warner, Pittsburgh Conference of Analytical Chemistry and Applied Spectroscopy, 1999, Orlando “Enantiomeric Separations of Chiral Compounds in Different Charge States Using Monomeric and Polymeric Amino Acid Based Surfactants”.
85. Fereshteh Haddadian, Eugene Billiot, Isiah Warner, American Chemical Society 1998, Baton Rouge, Effect of Steric Hindrance and Number of Stereogenic Centers in Chiral Recognition with Polymerized Dipeptide Surfactants
86. Fereshteh Haddadian, William Crowder, Matthew Weitze, Neil Danielson, Pittsburgh Conference of Analytical Chemistry and Applied Spectroscopy, 1998 , New Orleans “Capillary Electrophoresis of Phosphoamino Acids with Indirect Photometric Detection”.
87. Fereshteh Haddadian, Shahab Shamsi, Isiah Warner, Pittsburgh Conference of Analytical Chemistry and Applied Spectroscopy, 1998, New Orleans “Separation of Free Fatty Acids Using Capillary Electrophoresis.

88. Fereshteh Haddadian, Neil Danielson, Pittsburgh Conference of Analytical Chemistry and Applied Spectroscopy, 1997, Atlanta “Flow Injection Analysis of Fructose.

89. Fereshteh Haddadian, Shahb Shamsi, Neil Danielson, Pittsburgh Conference of Analytical Chemistry and Applied Spectroscopy, 2017, Atlanta “Capillary Electrophoresis of Phospholipids.

Graduate Advisees and Committee Chair

1. *Amber Maynard, 2017- Committee co-Chair*
Title: Chiral recognition of single amino acid surfactants leucine, isoleucine, and norleucine in the presence of diamine counterions with different chain lengths
2. *Savanna Tubbs, 2017- Committee co-Chair*
Title: Characterization of dipeptide based micellar systems undecanoic alanine-alanine and undecanoic alanine-glycine
3. *Nhi Nygen, 2017- Committee co-Chair*
Title: Effect of diamine counterion chain length and pH on the physical properties and chiral recognition of amino acid based surfactant
4. *Zoe Ramos, 2018- Committee Chair*
Title: Physical properties of dipeptide alanine leucine surfactants
5. *Olivia Deveraux, 2018- Committee Chair*
Title: Molecular modeling of amino acid based surfactants
6. *Maryam AlShaikh, 2018- Committee member*
Title: Effects of natural organic matter in the solubility of anthropogenic pollutants and Chemical characterization of trace metals organic ligands
7. Andrew Baker, 2003-Committee member
Title: *Development of a Short-term Bioassay to Screen for Endocrine Disruptors using Zebrafish Embryos*
8. Yukari Watanabe 2004-Committee Chair
Title: *Investigation of the Guest-Host Interactions of Solid Cyclodextrin with Gaseous PAHs: In Search of a Method to Analyze Atmospheric PAHs*
9. Sridhar Swargam 2005- Committee member
Title: *Use of Retention Time Locking Methodology to Screen for Endocrine Disruptors in South Texas Sediments*

Awards

- 2010** Texas A&M System Teaching Award
1998 Louisiana State University Departmental of Chemistry Award for Superior Performance and Productivity in Chemical Research
1999 American Chemical Society Graduate Student Fellowship
2000 Phi Lambda Upsilon Robert V. Nauman Award for Excellence in Research
1998 I. M. Warner Award For Outstanding Performance

OTHER RELATED ACTIVITIES:

Served on Faculty Core Curriculum Committee for Academic years 2013-2014 and 2014-2015.

Serve as General Chemistry coordinator since 2011

Serve as Chemistry Graduate program coordinator since 2007

Served as Chair Elect for the South Texas Chapter of the American Chemical Society in 2001

Served as Chair of the South Texas Chapter of the American Chemical Society in 2002.

Served on several NSF Advisory Panels for the evaluation of submitted proposals to various programs such as TUES and CL in 2007, 2009 and 2012

Review research proposals for NSF-RUI program NSF since 2005

Review for Journal of Chromatographic Sciences since 2000

ORGANIZATIONAL MEMBERSHIP:

- American Chemical Society

PROPOSALS / GRANTS AWARDED:

1. (PI :\$135,000) Welch Departmental Grant, Welch Foundation- 6/1/2019-6/31/2022. (Note: this is a departmental grant and we have been receiving it each year since 2002)

2. (PI :\$120,000) Welch Departmental Grant, Welch Foundation- 6/1/2016-6/31/2019. (Note: this is a departmental grant and we have been receiving it each year since 2002)
3. (PI: \$201,753) Collaborative Research: RUI: Toward Structure-Based Models of Chiral Recognition. (9/1/2017-8/31/2020) Note: This grant in in collaboration with two other universities with total funding of over \$400,000 with TAMUCC leading the project.
4. (PI: \$275,000) NSF-RUI-Effect of pH on Chiral Recognition of Amino Acid Based Micelles-9/1/2012-8/31/2016
5. (CoPI: \$61,137) MRI: Acquisition of a Capillary Electrophoresis Instrument for the Enhancement of Research and Teaching at Texas A&M University-Corpus Christi-9/1/2014-8/31/2017
6. (PI: \$599,993) NSF: Scholarships to Enhance Physical Sciences (STEPS) – Awarded by the National Science Foundation-09/23/2009-09/22/2014
7. (CoPI:\$999,998) NSF-STEP Phase 1: Recruitment, Retention, and Success in Science- Awarded by the National Science Foundation-09/18/2006-09/17/2009-I was a part of this grant for two years and because of the direction the grant was taking, I had to step out of it.
8. (CoPI: \$223,418) NSF-MRI: Acquisition of a 300 MHz NMR for the Enhancement of Research/Teaching at Texas A&M University-Corpus Christi – Awarded by the National Science Foundation-07/26/2005-07/25/2008
9. (CoPI: \$98,643) NSF – RUI/MRIS: Acquisition of an AA Graphite Furnace and Microwave Digestor for the Enhancement of Research/Teaching at Texas A&M University-Corpus Christi, Awarded by the National Science Foundation-08/06/2004-08/05/2007
10. (CoPI: \$142,385) NSF - RUI/MRI: Acquisition of a GC/MS for the Enhancement of Research at Texas A&M University-Corpus Christi: Awarded by the National Science Foundation-07/09/2002-07/06/2005
11. (PI: \$30,000) Sensory and Chemical Assessment of Wild Harvest and Pond Raised Shrimp: Awarded by The Gulf and South Atlantic Fisheries Foundation- (05/09/2005-07/08/2005)
12. (CoPI: \$180,710) NSF - MRI: Acquisition of Instrumentation for the Chemical and Biological Characterization of Factors Affecting the Distribution and Phytoremediation of Seagrasses in Coastal South Texas: Awarded by the National Science Foundation-08/21/2001-08/20/2004

Highlights of Service Related Activities

- Help faculty with their online course set up and evaluation (January 2014 - Present).
- Faculty Search Committee. (November 2012 - Present).
- Committee Chair, General Chemistry Class Coordinator. (August 2012 - Present).
- Learning Community member. (August 2011 - Present).
- Committee Chair, Welch Departmental Selection Committee. (May 2005 - Present).
- Committee Member, College Grade Appeal. (December 2013 - 2017).
- Member and Secretary, Steering Committee. (November 2013 – 2014)
- Steering Committee member. (November 2013 – 2016)
- Undergraduate Council member. (August 2013 - 2015).
- SOAR University Betterment Proposal Reviewer. (January 2012 - 2014).
- College Award Committee member. (August 2010 - September 2013)
- Chairperson, Core Curriculum Assessment. (August 2016 - Present).
- Committee Member, University Scholarship Committee. (December 2012 - 2015).
- Committee Member, Del Mar Chemistry Program review. (October 2012 - 2013).
- Reviewer, Grant Proposal, National Science Foundation. (April 2005 - Present).

- Help McGraw-Hill with new ALEKS development. (April 2017 - May 2017)
- Help McGraw-Hill with online organic chemistry development. (April 2016 - May 2016).
- Program Organizer, Science Club. (October 2015 - now).
- Presenting science experiment to CCISD, Chemistry Club. (October 2010 - April 2013).
- Committee Chair, Destination Imagination. (October 2011 - May 2012).
- Invited to attend Chancellor's Summit on Academic Technology.(June 22-June 23 2016)