

Laurence A. Angel

Chemistry Department

Texas A&M University-Commerce
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Qualifications

Doctor of Philosophy, Chemistry, 2000.
Bachelor of Science (Honors), Environmental Science with North American Studies (minor), 1996.

Professional Experience

June 2013 – Present, Associate Professor, Texas A&M University-Commerce.
Aug 2007 – May 2013, Assistant Professor, Texas A&M University-Commerce.
July 2003 – Aug 2007, Assistant Research Professor, University of Nevada, Reno.
Sept.1999 – July 2003, Postdoctoral Research, Professor K.M. Ervin, University of Nevada, Reno.

Education

Sept.1996 – Sept.1999, Doctor of Philosophy, Professor A.J. Stace, University of Sussex, U.K.
Oct.1992 – June 1996, BSc (Hons), Environmental Science with North American Studies, University of Sussex.

Professional Awards

1. D.Phil. research award, 1996-1999, Engineering and Physical Sciences Research Council, UK.
2. University of Nevada, Reno, 2006, Outstanding Professor and Researcher EB-1 visa award.
3. Texas A&M University – Commerce, 2011, Provost Award: Research and Creative Activity.
4. Texas A&M University – Commerce, 2016-2017, Faculty Senate Recognition Award for Professional Excellence: “Fearless Investigation”.

Professional Memberships

2005 – Present: American Society of Mass Spectrometry, Member.
2005 – Present: American Chemical Society, Member.

Classes Taught

General Chemistry Tutorial (I-II), General and Quantitative Chemistry(I-II), General and Quantitative Chemistry Labs (I-II), Quantitative and Instrumental Analysis, Quantitative and Instrumental Analysis Lab, Instrumental Chemistry, Instrumental Chemistry Lab, Physical Chemistry II, Physical Chemistry II Lab, Advanced Analytical Chemistry, Advanced Instrumental Analysis (I-II), Advanced Research Techniques and Design (I-II), Advanced Mass Spectrometry Techniques (I-III), Chemical Science and Profession, Graduate Seminar, Undergraduate Research, Graduate Thesis.

External Research Funding Acquired

1. PI, National Science Foundation: Chemical Structure, Dynamic & Mechanism B. CHE-1764436, RUI: Developing Ion Mobility Mass Spectrometry Techniques for Determining the Structure and Mechanisms of Metal Ion Recognition & Redox Activity of Metal Ion Binding Oligopeptides," \$216,267, 2018-2021.
2. PI, National Science Foundation – Major Research Instrumentation Grant. CBET-0821247, Acquisition of a IM-Q-TOF Mass Spectrometer, Laurence Angel, Ph.D., (PI), Nenad Kostic, Ph.D., (Co-PI), Frank Miskevich, Ph.D., (Co-PI), Stephen Starnes, Ph.D., (Co-PI), William Whaley, Ph.D., (Co-PI), Serge P. von Duvillard, Ph.D., (Co-PI), Lani Lyman-Henley, Ph.D., (Co-PI). \$310,000, 2008-2011

3. Co-PI, U.S. Department of Energy Grant.TX-W-20090427-0004-50. Advanced Artificial Science. The development of an artificial science and engineering research infrastructure to facilitate innovative computational modeling, analysis, and application to interdisciplinary areas of scientific investigation. S. Saffer, Ph.D., (PI), Derek Harter, Ph.D., (Co-PI), Sang Suh, Ph.D., (Co-PI), Laurence Angel, Ph.D., (Co-PI). \$291,600, 2010.

Internal Research Funding Acquired

PI, Research Enhancement Grant, Texas A&M University-Commerce, \$17,506, 2010-2011
PI, Research Enhancement Grant, Texas A&M University-Commerce, \$14,916, 2009-2010
PI, Integrated Research Proposal, Texas A&M University-Commerce, \$30,000, 2008-2009
PI, Research Enhancement Grant, Texas A&M University-Commerce, \$12,614, 2008-2009

Research Papers Submitted to Peer-Reviewed Scientific Journals 2018-2019

Weak Acid-Base Interactions of Histidine and Cysteine Affect the Charge States, Tertiary Structure, and Zn(II)-binding of Heptapeptides Yu-Fu, Lin, Enas N. Yousef, Efren Torres, Linh Truong, James M. Zahnow, Cole B. Donald, Ying Qin, and Laurence A. Angel *J. Am. Soc. Mass Spectrom.* submitted Feb 2019.

Weakly-bound dimers that underlie the crystal nucleation precursors in lysozyme solutions

Byington, M. C.; Safari, M. S.; Lubchenko, V.; McCabe, J. W.; Angel, L. A.; Hawke, D. H.; Bark, S. J.; Conrad, J. C. *bioRxiv, Biophysics* (2018), 1-20.

Publications in Peer-Reviewed Scientific Journals since joining TAMU-Commerce

1. Binding Selectivity of Methanobactin from *Methylosinus Trichosporium* OB3b for Copper(I), Silver(I), Zinc(II), Nickel(II), Cobalt(II), Manganese(II), Lead(II), and Iron(II)

McCabe, J. W.; Vangala, R. and Angel, L. A. *J. Am. Soc. Mass Spectrom.* **2017**, *28*, 2588-2601.

2. Applying Ion Mobility – Mass Spectrometry Techniques for Explicitly Identifying the Products of Cu(II) Reactions of 2His-2Cys Motif Peptides

Vytla, Y. and Angel, L.A. *Analytical Chemistry*, **2016**, *88*, 10925.

3. The Multiple Conformational Charge States of Zinc(II) Coordination by 2His-2Cys Oligopeptide Investigated by Ion Mobility - Mass Spectrometry, Density Functional Theory and Theoretical Collision Cross Sections

Wagoner, S. M.; Deconada, M.; Cumpian, K. L.; Ortiz, R.; Chinthala, S. and Angel, L. A., *J. Mass Spectrom.* **2016**, *51*, 1120.

4. Probing the Stability of Insulin Oligomers Using Electrospray Ionization - Ion Mobility - Mass Spectrometry

Boga Raja, U. K.; Injeti, S.; Culver, T.; McCabe, J. W.; Angel, L. A., *Eur. J. Mass Spectrom.* **2015**, *21*, 759.

5. Redox Activity and Multiple Copper(I) Coordination of 2His-2Cys Oligopeptides

Choi, D.; Alshahrani, A.; Vytla, Y.; Deconada, M.; Serna, V. J.; Saenz, R. F. and Angel, L. A., *J. Mass Spectrom.* **2015**, *50*, 316.

6. The pH Dependent Cu(II) and Zn(II) Binding Behavior of an Analog Methanobactin Peptide

Sesham, R.; Choi, D.; Balaji, A.; Cheruku, S.; Ravichetti, C.; Alshahrani, A.; Nasani, M.; Angel, L. A., *Eur. J. Mass Spectrom.* **2013**, *19*, 463.

7. Analysis of Methanobactin from *Methylosinus Trichosporium* OB3b via Ion Mobility Mass Spectrometry

Choi, D-W.; Sesham, R.; Kim, Y.; and Angel, L.A. *Eur. J. Mass Spectrom.*, **2012**, *18*, 509.

8. Ion Mobility - Mass Spectrometry Study of Metal Ion Labeling of the Conformational and Charge States of Lysozyme

Angel, L.A. *Eur. J. Mass Spectrom.*, **2011**, *11*, 207.

9. Metal Complexes as Artificial Proteases in Proteomics: A Palladium(II) Complex Cleaves Various Proteins in Solutions Containing Detergents

Miskevich, F.; Davis, A.; Leeprapaiwong, P.; Giganti, V.; Kostic, N.M.; Angel, L.A. *J. Inorg. Biochem.*, **2011**, *105*, 675.

10. Ion Mobility-Mass Spectrometry Study of Folded Ubiquitin Conformers Induced by Treatment with *cis*-[Pden(H₂O)₂]²⁺

Giganti, V.; Best, W.A.; Kundoor, S.; Angel, L.A. *J. Am. Soc. Mass Spectrom.*, **2011**, *22*, 300.

11. Effects of Transition Metal Ion Identity & π -Cation Interactions in Metal-Bis(Peptide) Complexes Containing Phenylalanine

Utley, B.; Angel, L.A. *Eur. J. Mass Spectrom.*, **2010**, *16*, 631.

12. Ion Mobility Mass Spectrometry of Au₂₅(SCH₂CH₂Ph)₁₈ Nanoclusters

Angel, L.A.; Majors, L.T.; Dharmaratne, A.C.; Dass, A. *ACS Nano*, **2010**, *4*, 4691.

13. Threshold Collision Induced Dissociation of Hydrogen-Bonded Dimers of Carboxylic Acids

Jia, B.; Angel, L.A.; Ervin, K.M. *J. Phys. Chem. A*, **2008**, *112*, 1773.

Publications in Peer-Reviewed Scientific Journals before joining TAMU-Commerce

14. Gas-Phase Acidity and the O-H Bond Dissociation Enthalpy of Phenol, 3-Methylphenol, 2,4,6-Trimethylphenol and Ethanoic Acid Angel, L.A.; Ervin, K.M. *J. Phys. Chem. A*, **2006**, *110*, 1039.

15. Gas-Phase Reactions of Iodide Ion with Chloromethane and Bromomethane; Competition Between Nucleophilic Displacement and Halogen Abstraction Angel, L.A.; Ervin, K.M. *J. Phys. Chem. A*, **2004**, *108*, 9827.

16. Competitive Threshold Collision-Induced Dissociation: Gas-Phase Acidity and O-H Bond Dissociation Enthalpy of Phenol Angel, L.A.; Ervin, K.M. *J. Phys. Chem. A*, **2004**, *108*, 8346.

17. Gas-Phase Hydrogen Atom Abstraction Reactions of S⁻ with H₂, CH₄ and C₂H₆ Angel, L.A.; Dogbevia, M.K.; Rempala, K.M.; Ervin, K.M. *J. Chem. Phys.* **2003**, *119*, 8996.

18. Gas-Phase S_N2 and Bromine Abstraction Reactions of Chloride Ion with Bromomethane: Reaction Cross Sections and Energy Disposal into Products Angel, L.A.; Ervin, K.M. *J. Am. Chem. Soc.* **2003**, *125*, 1014.

19. Dynamics of the Gas-Phase Reactions of Chloride Ion with Fluoromethane: High Excess Translational Activation Energy for an Endothermic S_N2 Reaction Angel, L.A.; Garcia, S.P.; Ervin, K.M. *J. Am. Chem. Soc.* **2002**, *124*, 336.

20. Dissociation Patterns of (H₂O)_n⁺ Cluster Ions, for n=2-6 Angel, L. Stace, A.J. *Chem. Phys. Lett.* **2001**, *345*, 277.

21. Dynamics of the Gas-Phase Reactions of Fluoride Ions with Chloromethane Angel, L.A.; Ervin, K.M. *J. Phys. Chem. A*, **2001**, *105*, 4042.

22. **A Re-Appraisal of the Contribution from $[\text{O}_2(\text{H}_2\text{O})_n]^+$ Cluster Ions to the Chemistry of the Ionosphere** Angel, L.; Stace, A.J. *J. Phys. Chem. A* **1999**, *103*, 2999.
23. **The Critical Hydration Reactions of NO^+ and NO_2^+** Angel, L. Stace, A.J. *J. Chem. Phys.* **1998**, *109*, 1713.
24. **Reactions of NO^+ in Heterogeneous Water Clusters** Angel, L.; Stace, A.J. *J. Phys. Chem. A* **1998**, *102*, 3037.
25. **The Reactions of NO_2^+ in Association with Heterogeneous Water Clusters** Angel, L.; Stace, A.J. *J. Chem. Soc. Faraday Trans.* **1997**, *93*, 2769.

Invited Speaker at Universities and Conferences since joining TAMU-Commerce

- Dynamical Impedances to Translational Energy Activation of Gas-Phase $\text{S}_\text{N}2$ Reactions of Halide Ion with Halomethane** Angel, Laurence A.; Ervin, Kent M. From Abstracts, 73rd Southwest Regional Meeting of the American Chemical Society, Lubbock, TX, United States, October 29-November 1 (2017), SWRM-182.
- Comparison of the Selected Transition Metal Binding Characteristics of Methanobactin and 2His-2Cys Motif Metal Binding Peptides** Yashodharani Vytla, Jacob W. McCabe, Stephanie M. Wagoner, Manogna Deeconda, Kayleah L. Cumpian, Rafael Ortiz, Swetha Chinthala, **Laurence A. Angel** *Physical Chemistry Seminar, Texas Tech University, November 18. 2016.*
- Methanobactin Analysis via Ion Mobility Mass Spectrometry** Yuri Kim, and DongWon Choi. **Laurence A. Angel** *Chemistry Seminar, Baylor University, February 2012.*
- Methanobactin Analysis via Ion Mobility Mass Spectrometry** Yuri Kim, and DongWon Choi. **Laurence A. Angel** *Research Symposium TAMU-Commerce, April 2012.*
- Gold Nanocluster Analysis via Ion Mobility Mass Spectrometry** Amala Dass and **Laurence A. Angel** *Research Symposium TAMU-Commerce, April 2011.*
- Gas-Phase Acidity and the O-H Bond Dissociation Enthalpy of Phenol** Kent M. Ervin and **Laurence A. Angel** *Physics Symposium TAMU-Commerce, November 2007.*

Organizer of National and Local Research Meetings

- Presiding organizer of the section “Mass Spectrometry and Related Technologies for Energy and Fuels” at the 247th American Chemical Society National Meeting and Exposition, Dallas TX March 16-20 2014.
- Organizing committee, judge and prize organizer for The 46th ACS DFW MEETING-in-MINIATURE, Texas A&M University-Commerce, Commerce, Texas, Saturday, April 27, 2013.

Student Research Awards

- Jacob McCabe “Investigation of selected metal ion binding characteristics of methanobactin from *Methyosinus trichosporium* OB3b” First Place** – Overall First Place for Posters – 13th Annual Texas A&M University System Pathways Symposium – November 2016.
- Jacob McCabe “Investigation of selected metal ion binding characteristics of methanobactin from *Methyosinus trichosporium* OB3b” First Place** – Physical Science – 13th Annual Texas A&M University System Pathways Symposium – November 2016.
- Jacob McCabe for his research poster “Investigation of the Cu(I), Ag(I), Pb(II), Co(II), Fe(III), Mn(II), Ni(II), and Zn(II) binding characteristics of methanobactin from *Methyosinus trichosporium* OB3b” Second place** in the Science, Technology, Engineering and Math category of the 7th Annual Federation Research Symposium held at Texas Women’s University April 8th, 2016 Texas.
- Jacob McCabe “Investigation of the Cu(I), Ag(I), Pb(II), Co(II), Fe(III), Mn(II), Ni(II), and Zn(II) binding characteristics of methanobactin from *Methyosinus trichosporium* OB3b” First Place** in the category for graduate research posters at the 2016 Annual Research Symposium held at Texas A&M University – Commerce, April 7th, 2016.
- Jacob McCabe “Competitive Binding of Copper(I) and Zinc(II) by Methanobactin from *Methylosinus trichosporium* OB3b” Second Place** in the Physical Sciences category for graduate

research posters at the 2015 Texas A&M System 12th Annual Pathways Student Research Symposium held at Texas A&M University-Corpus Christi on October 22nd - 23rd, 2015.

6. **Chirag Salva** won 2nd prize in the category graduate research poster at the 2013 Texas A&M University-Commerce Research Symposium.
7. **Amy Davis** won 3rd prize in the category of undergraduate research poster at the 2009 Texas A&M University – Commerce Science Symposium.
8. **Amy Davis** won 1st prize in the *overall* category of undergraduate research poster at the 2008 Texas A&M University System Pathways Student Research Symposium.
9. **Brandon Utley** won 3rd prize in the *overall* category of M.S. graduate research poster at the 2008 Texas A&M University System Pathways Student Research Symposium.

Oral and Poster Presentations at American Society Mass Spectrometry Meetings since joining A&M-Commerce

1. **Comparison of the selected metal binding characteristics of the methanobactin from *Methylosinus trichosporium* OB3b** Jacob W. McCabe, Rajpal Vangala, **Laurence A. Angel** 65th Conference on Mass Spectrometry and Allied Topics, June 4-8, **2017**, Indianapolis, Indiana.
2. **Copper-binding and redox activity and of a series of alternative methanobactin peptide** Yashodharani Vytla, Manogna Deeconda, Sravya Challa, Swetha Chintala, Rajpal Vangala, Jacob W. McCabe and **Laurence A. Angel**, 64th Conference on Mass Spectrometry and Allied Topics, June 5-9, **2016**, San Antonio, Texas.
3. **Investigation of the Cu(I), Ag(I), Pb(II), Co(II), Fe(II), Mn(II), Ni(II), and Zn(II) binding characteristics of methanobactin from *Methylosinus trichosporium* OB3b** **Jacob W. McCabe**, Rajpal Vangala, Laurence A. Angel, 64th Conference on Mass Spectrometry and Allied Topics, June 5-9, **2016**, San Antonio, Texas.

Oral and Poster Presentations at American Chemical Society Meetings since joining A&M-Commerce

1. **How the primary structure of related heptapeptides affects their charge states, tertiary structure, and collision-induced dissociation as investigated by ion mobility-mass spectrometry and density functional theory** Lin, Yu-Fu; Zahnow, James; Torres, Efren; Yousef, Enas N.; Angel, Laurence A. From Abstracts, 74th Southwest Regional Meeting of the American Chemical Society, Little Rock, AR, United States, November 7-10 (2018), SWRM-300.
2. **Comparison of the Zn(II) binding during pH 5 -10 of a series of sequence-related heptapeptides using ion mobility - mass spectrometry** Yousef, Enas N.; Donald, Cole; Zahnow, James; Angel, Laurence A. From Abstracts, 74th Southwest Regional Meeting of the American Chemical Society, Little Rock, AR, United States, November 7-10 (2018), SWRM-96.
3. **Integrating mass spectrometry with molecular dynamics simulations to elucidate Zn(II) coordination in 2Cys-2His model peptide** Abdul, Malik; Homayoon, Zahra; Pratihari, Subha; Angel, Laurence A.; Hase, William L. From Abstracts, 74th Southwest Regional Meeting of the American Chemical Society, Little Rock, AR, United States, November 7-10 (2018), SWRM-22.
4. **Comparison of selected metal binding by a series of related heptapeptides** Yousef, Enas; Qin, Ying; Angel, Laurence A. From Abstracts, 73rd Southwest Regional Meeting of the American Chemical Society, Lubbock, TX, United States, October 29-November 1 (2017), SWRM-336.
5. **Comparison of products from the collision-induced dissociation of a series of sequence related heptapeptides** Lin, Yu-Fu; Yousef, Enas; Qin, Ying; Angel, Laurence A. From Abstracts, 73rd Southwest Regional Meeting of the American Chemical Society, Lubbock, TX, United States, October 29-November 1 (2017), SWRM-294.
6. **Dynamical impedances to translational energy activation of gas-phase S_N2 reactions of halide ion with halomethane** Angel, Laurence A.; Ervin, Kent M. From Abstracts, 73rd Southwest Regional Meeting of the American Chemical Society, Lubbock, TX, United States, October 29-November 1 (2017), SWRM-182.
7. **Collision-induced dissociation to determine the influence on affinities of zinc ion towards peptides with different amino acid residues** Qin, Ying; Lin, Yu-Fu; Yousef, Enas; Angel, Laurence A. From

- Abstracts, 73rd Southwest Regional Meeting of the American Chemical Society, Lubbock, TX, United States, October 29-November 1 (2017), SWRM-56.
8. **Comparison of the selected transition metal binding characteristics of methanobactin and alternative metal binding peptides** Angel, Laurence A.; McCabe, Jacob W.; Vangala, Rajpal From Abstracts, 72nd Southwest Regional Meeting of the American Chemical Society, Galveston, TX, United States, November 10-13 (2016), SWRM-609.
 9. **Investigation of the selected transition metal binding characteristics of methanobactin from *Methylosinus trichosporium* OB3b** McCabe, Jacob W.; Vangala, Rajpal; Angel, Laurence A. From Abstracts, 72nd Southwest Regional Meeting of the American Chemical Society, Galveston, TX, United States, November 10-13 (2016), SWRM-250.
 10. **Investigation of metal binding properties of methanobactin and alternative methanobactin (amb7) peptides by fluorescence spectroscopy and ion-mobility mass spectrometry** Angel, Laurence A.; McCabe, Jacob W.; Vangala, Rajpal From Abstracts, 72nd Southwest Regional Meeting of the American Chemical Society, Galveston, TX, United States, November 10-13 (2016), SWRM-146.
 11. **Zinc(II) and copper(I/II) binding to alternative metal binding peptide using fluorescence and ion mobility: Mass spectrometry techniques** Angel, Laurence A.; Chinthala, Swetha From Abstracts, 72nd Southwest Regional Meeting of the American Chemical Society, Galveston, TX, United States, November 10-13 (2016), SWRM-148.
 12. **Competitive binding of copper(I) and zinc(II) by methanobactin from *Methylosinus trichosporium* OB3b and analog methanobactin peptide** McCabe, Jacob W.; Vangala, Rajpal; Angel, Laurence A.; From Abstracts, 67th Southeast/71st Southwest Joint Regional Meeting of the American Chemical Society, Memphis, TN, United States, November 4-7 (2015), SERMACS-SWRM-572.
 13. **pH Dependent Zn(II) binding behavior of an analog methanobactin peptide** Cumpian, Kayleah L.; Deeconda, Manogna; Ortiz, Rafael; Wagoner, Stephanie M.; Angel, Laurence A. From Abstracts of Papers, 249th ACS National Meeting & Exposition, Denver, CO, United States, March 22-26, 2015 (2015), CHED-266.
 14. **pH dependent Zn(II) binding behavior of an analog methanobactin peptide** Cumpian, Kayleah L.; Deeconda, Monogna; Ortiz, Rafael; Wagoner, Stephanie M.; Angel, Laurence A. From Abstracts, 70th Southwest Regional Meeting of the American Chemical Society, Fort Worth, TX, United States, November 19-22 (2014), SWRM-335
 15. **Porphyrin-based hosts that complement the shape of the target guest show enhanced selectivity in anion recognition: A UV/Vis, NMR and computational study** Makineni, Sirisha; Jackson, Vanessa; Battles, Paul; Bommidi, Anusha; Nalla, Kiran; Ramos, Maritza; Angel, Laurence; Starnes, Stephen From Abstracts of Papers, 247th ACS National Meeting & Exposition, Dallas, TX, United States, March 16-20, 2014 (2014), ORGN-159
 16. **The pH dependent Cu(II) and Zn(II) binding behavior of an analog methanobactin peptide** Angel, Laurence A.; Sesham, Ramakrishna; Choi, DongWon; Balaji, Anupama; Cheruku, Sahithi; Ravichetti, Chiranjeevi; Alshahrani, Aisha A.; Nasani, Maheshbabu From Abstracts, 69th Southwest Regional Meeting of the American Chemical Society, Waco, TX, United States, November 16-19 (2013), SWRM-345.
 17. **Enhanced selectivity in anion recognition through hosts that complement the shape of the target guest: A UV/Vis, NMR and computational study** Makineni, Sirisha; Bommidi, Anusha; Nalla, Kiran; Jackson, Vanessa; Angel, Laurence A.; Starnes, Stephen D. From Abstracts, 69th Southwest Regional Meeting of the American Chemical Society, Waco, TX, United States, November 16-19 (2013), SWRM-196. | Language: English, Database: CAPLUS
 18. **Structural analysis of methanobactin using ion mobility – mass spectrometry** Kim, Yuri; Choi, DongWon; Angel, Laurence A. From Abstracts, 67th Southwest Regional Meeting of the American Chemical Society, Austin, TX, United States, November 9-12 (2011), SWRM-614.
 19. **Interactions of Zn²⁺ on insulin oligomer formation and stability: Analysis using ESI-IM-MS** Culver, Tiffany L.; Konakanchi, Sruthi; Injeti, Srilakshmi; Angel, Laurence A. From Abstracts, 67th Southwest Regional Meeting of the American Chemical Society, Austin, TX, United States, November 9-12 (2011), SWRM-467.
 20. **Study of the stability of insulin oligomers in the presence and absence of zinc(II) using mass spectrometry** Injeti, Srilakshmi; Konakanchi, Sruthi; Culver, Tiffany L.; Angel, Laurence A. From

Abstracts, 67th Southwest Regional Meeting of the American Chemical Society, Austin, TX, United States, November 9-12 (2011), SWRM-201.

21. **Synthesis and extraction procedure of C₂H₂ type zinc finger proteins for analysis by ion-mobility mass spectrometry** Giganti, Virginia; Kim, Yuri; Hanna, Michael; Angel, Laurence A. From Abstracts, 67th Southwest Regional Meeting of the American Chemical Society, Austin, TX, United States, November 9-12 (2011), SWRM-40.
22. **Gene Cloning of zinc finger (zif268) and identification by ion mobility mass spectrometry** Kim, Yuri; Giganti, Virginia; Choi, DonWong, Hanna, Michael; Angel, Laurence A. From Abstracts, 67th Southwest Regional Meeting of the American Chemical Society, Austin, TX, United States, November 9-12 (2011), SWRM-40.
23. **Examining the effectiveness of IM-MS coupled with CID to determine metal ion binding sites on a series of small proteins and peptides** Davis, Amy N.; Angel, Laurence A. From Abstracts, Joint 66th Southwest and 62nd Southeast Regional Meeting of the American Chemical Society, New Orleans, LA, United States, December 1-4 (2010).
24. **Ion-mobility mass spectrometry study of Pd-ubiquitin** Angel, Laurence A.; Giganti, Virginia From Abstracts, Joint 66th Southwest and 62nd Southeast Regional Meeting of the American Chemical Society, New Orleans, LA, United States, December 1-4 (2010).
25. **Ion mobility - mass spectrometry study of metal ion labeling of the conformational and charge states of lysozyme** Angel, Laurence A.; Davis, Amy From Abstracts, Joint 66th Southwest and 62nd Southeast Regional Meeting of the American Chemical Society, New Orleans, LA, United States, December 1-4 (2010).
26. **Metal complexes as artificial proteases in Proteomics: Using [Pd(en)(H₂O)₂]²⁺ to selectively cleave proteins in zwitterionic detergents** Leeprapaiwong, Porntip; Davis, Amy; Giganti, Virginia; Kostic, Nenad M.; Angel, Laurence A. Miskevich, Frank From Abstracts, Joint 66th Southwest and 62nd Southeast Regional Meeting of the American Chemical Society, New Orleans, LA, United States, December 1-4 (2010).
27. **Chemistry of Transition Metal Cations & Phenylalanine-Containing Peptides Investigated by Mass Spectrometry** Utley, Brandon; Angel, Laurence A. From Abstracts, 64th Southwest Regional Meeting of the American Chemical Society, Little Rock, AR, United States, October 1-4 (2008).
28. **Palladium Complexes as Tools for Membrane Proteomics** Coon, John; Garza, Samantha; Kostic, Nenad M.; Angel, Laurence A.; Miskevich, Frank From Abstracts, 64th Southwest Regional Meeting of the American Chemical Society, Little Rock, AR, United States, October 1-4 (2008).
29. **Proteomics of the Cellular Membrane** Vatanpour, Lida; Davis, Amy; Angel, Laurence A. From Abstracts, 64th Southwest Regional Meeting of the American Chemical Society, Little Rock, AR, United States, October 1-4 (2008).
30. **A Biomimetic Study of the Active Site of Carbonic Anhydrase** Rainey, Ronald Andrew; Mathews, Mickey Lynn; Angel, Laurence A. From Abstracts, 64th Southwest Regional Meeting of the American Chemical Society, Little Rock, AR, United States, October 1-4 (2008).

Presentations at The 46th ACS DFW MEETING-in-MINIATURE, Texas A&M University-Commerce, Commerce, Texas, Saturday, April 27, 2013

1. **Chirag Savla** and Laurence A. Angel, "Quantification and Characterization of Glycolipids and Phospholipids of *Chlamydomonas reinhardtii* By HPLC-ESI-QTOF-MS."
2. **Uday Boga Raja** and Laurence A. Angel. "Conformation, stability and topology of insulin oligomers using electrospray ionization-ionmobility mass spectrometer (ESI-IMMS)."
3. **Sruthi Konakanchi** and Laurence A. Angel, "Comparative study of metal ion labeling of the conformational and charge states of native and disulfide reduced lysozyme."
4. **Maheshbabu Nasani** and Laurence A. Angel, "Comparative Metal Binding Studies of Methanobactin and Zinc Finger-like Peptide with Cu(II) and Zn(II) Metal Ions."
5. **Ramikrishna Sesham** and Laurence A. Angel. "Binding studies of methanobactin and zinc finger-like peptide."
6. **Swetha Bathula** and Laurence A. Angel. "Lipid profiling of *Chlamydomonas reinhardtii*: Quantification and characterization of glycolipids phospholipids and neutral lipids by RP-HPLC-ESI-TOF-MS."

7. **Singh Balaji** and Laurence A. Angel, “In Silico Binding Characteristics of Methanobactin Analog Peptides To First Row Transition Metal Ions.”

Presentations at Texas A&M University System Pathways Student Research Symposium.

1. **Jacob McCabe** Rajpal Vangala, Laurence A. Angel “Investigation of selected metal ion binding characteristics of methanobactin from *Methylosinus trichosporium* OB3b” 13th Annual Texas A&M University System Pathways Symposium – November 2016.
2. **Josh Pettibon**, Swetha Chinthala, Rajpal Vangala, and Laurence A. Angel “Methanobactin Analog Studied by Fluorescence and Mass Spectrometry in Response to Cu(I/II) and Various pH Environments” 13th Annual Texas A&M University System Pathways Symposium – November 2016.
3. **Vangala, Rajpal.** McCabe, Jacob W., Angel, Laurence A. “*Investigation of metal binding properties of methanobactin and alternative methanobactin (amb7) peptides by fluorescence spectroscopy and ion-mobility mass spectrometry*” 13th Annual Texas A&M University System Pathways Symposium – November 2016.
4. **Chinthala, Swetha**, Angel, Laurence A. “Zinc(II) and copper(I/II) binding to alternative metal binding peptide using fluorescence and ion mobility: mass spectrometry techniques” 13th Annual Texas A&M University System Pathways Symposium – November 2016.
5. **Jacob McCabe**, Rajpal Vangala, Francisco Rodgers, Laurence A. Angel “Competitive Binding of Copper(I) and Zinc(II) by Methanobactin from *Methylosinus trichosporium* OB3b” 12th Annual Pathways Student Research Symposium held at Texas A&M University-Corpus Christi on October 22nd - 23rd, 2015.
6. **Aisha Alshahrani**, Sesham, R.; Choi, D.; Balaji, A.; Cheruku, S.; Ravichetti, C.; Nasani, M.; Angel, L. A., “The pH dependent Cu(II) and Zn(II) binding behavior of an analog methanobactin peptide” 11th Annual TAMUS Pathways Student Research Symposium, Texas A&M University at Galveston, Galveston, Texas, 2013.
7. **Srilakshmi Injeti, Uday Kumar Boga Raja** and Laurence A. Angel, “Study of the stability of insulin oligomers in the presence and absence of Zn(II) using mass spectrometry” 10th Annual TAMUS Pathways Student Research Symposium, Texas A&M University at Galveston, Galveston, Texas, 2012.
8. **Sruthi Konakanchi, Sahithi Cheruku**, Laurence A. Angel “Comparative study of metal ion labeling of the conformational and charge states of native and disulfide reduced lysozyme” 10th Annual TAMUS Pathways Student Research Symposium, Texas A&M University at Galveston, Galveston, Texas, 2012.
9. **Swetha Bathula, Chirag Savla**, DongWon Choi, Laurence A. Angel "Quantification and characterization of hydrophobic and hydrophilic lipids of *Chlamydomonas Reinhardtii*" 10th Annual TAMUS Pathways Student Research Symposium, Texas A&M University at Galveston, Galveston, Texas, 2012.
10. **Ramakrishna Sesham, Mahesh Babu Nasani**, Laurence A. Angel "Copper Binding Studies of Methanobactin" 10th Annual TAMUS Pathways Student Research Symposium, Texas A&M University at Galveston, Galveston, Texas, 2012.
11. **Yuri Kim, Virginia Giganti** and Laurence A. Angel, “Gene cloning of zif268 and identification by ion mobility mass spectrometry” 9th Annual TAMUS Pathways Student Research Symposium, Texas A&M University, College Station, 2011.
12. **Tiffany Culver** and Laurence A. Angel, “Interactions of Zn²⁺ on insulin oligomer formation and stability: Analysis using ESI-IM-MS” 9th Annual TAMUS Pathways Student Research Symposium, Texas A&M University, College Station, 2011.
13. **Porntip Leeprapaiwong** and Laurence A. Angel, “Proteomics of the cellular membrane.” 8th Annual TAMUS Pathways Student Research Symposium, West Texas A&M, 2010.
14. **Amy Davis** and Laurence A. Angel, “Proteomics of the cellular membrane.” 7th Annual TAMUS Pathways Student Research Symposium, Texas A&M – Commerce, 2008.
15. **Hsin-Yi Tsai** and Laurence A. Angel, “Competitive dissociation channels and conformations of Zn(II) and Mn(II) bis-complexes containing amino acids and dipeptides of His, Cys, Asp, Tyr and Gly” 7th Annual TAMUS Pathways Student Research Symposium, Texas A&M – Commerce, 2008.

16. **Brandon Utley** and Laurence A. Angel, "Chemistry of transition metal cations & phenylalanine-containing peptides investigated by mass spectrometry" 7th Annual TAMUS Pathways Student Research Symposium, Texas A&M – Commerce, 2008.
17. **Ronald Rainey, Mickey Matthews,** and Laurence A. Angel, "A biomimetic study of the active site of carbonic anhydrase" 7th Annual TAMUS Pathways Student Research Symposium, Texas A&M – Commerce, 2008.

Annual Federation Graduate Student Research Symposium at Texas Woman's University, Denton, Texas

1. **Lin, Yu-Fu;** Yousef, Enas; Qin, Ying; Angel, Laurence A. "**Comparison of the charge states and products from the collision-induced dissociation of a series of alternative metal binding peptides**" Annual Federation Graduate Student Research Symposium, March 23, 2018 at Texas Woman's University, Denton, Texas.
2. **Chinthala, Swetha,** Angel, Laurence A. "**Copper(I/II) binding to alternative metal binding peptide using ion mobility - mass spectrometry and fluorescence techniques**" Annual Federation Graduate Student Research Symposium, March 31, 2017 at Texas Woman's University, Denton, Texas.
3. **Jacob McCabe,** Angel, Laurence A. "**Investigation of the Cu(I), Ag(I), Pb(II), Co(II), Fe(III), Mn(II), Ni(II), and Zn(II) binding characteristics of methanobactin from *Methyosinus trichosporium* OB3b**" Science, Technology, Engineering and Math category of the 7th Annual Federation Research Symposium held at Texas Women's University April 8th, 2016 Texas.

Presentations at A&M-Commerce Annual Research Symposium

1. **Lin, Yu-Fu;** Yousef, Enas; Qin, Ying; Angel, Laurence A. "Comparison of the charge states and products from the collision-induced dissociation of a series of alternative metal binding peptides" Annual Research Symposium, Texas A&M University -Commerce – April 3rd 2018.
2. **Jacob McCabe Rajpal Vangala,** Laurence A. Angel "Investigation of selected metal ion binding characteristics of methanobactin from *Methyosinus trichosporium* OB3b" Texas A&M University - Commerce – April 2017.
3. **Chinthala, Swetha,** Angel, Laurence A. "Copper(I/II) binding to alternative metal binding peptide using ion mobility - mass spectrometry and fluorescence techniques" Texas A&M University -Commerce – April 2017.
4. **Jacob McCabe Rajpal Vangala,** Laurence A. Angel "Investigation of Zn(II) and Cu(I) binding characteristics of methanobactin from *Methyosinus trichosporium* OB3b" Texas A&M University - Commerce – April 2016.
5. **Vangala, Rajpal, McCabe, Jacob W.,** Angel, Laurence A. "Investigation of metal binding properties of methanobactin and alternative methanobactin (amb₇) peptides by fluorescence spectroscopy and ion-mobility mass spectrometry" Texas A&M University -Commerce – April 2016.
6. **Chinthala, Swetha,** Angel, Laurence A. "Zinc(II) and copper(I/II) binding to alternative metal binding peptide using fluorescence and ion mobility - mass spectrometry techniques" Texas A&M University - Commerce – April 2016.
7. **Deeconda, Monogna;** Cumpian, Kayleah L.; Ortiz, Rafael; Wagoner, Stephanie M.; Angel, Laurence A. "Study of Zn(II) binding of an analog methanobactin peptide using IM-MS" TAMUC Research Symposium 2015.
8. **Aisha Alshahrani,** Angel, L. A., "The pH dependent Cu(II) Zn(II) and Ni(II) binding behavior of a series of analog methanobactin peptides" TAMUC Research Symposium 2014.
9. **Ramakrishna Sesham,** Laurence A. Angel "Copper Binding Studies of Methanobactin" TAMUC Research Symposium 2013.
10. **Anupama Singh Balaji,** Laurence A. Angel "*In Silico* Binding Affinities of Methanobactin Analogs to First Row Transition Metal Ions" TAMUC Research Symposium 2013.
11. **Chirag Salva,** Laurence A. Angel "Quantification and characterization of glycolipids and phospholipids of *Chalmydomonas reinhardtii* by HPLC-ESI-TOF-MS" TAMUC Research Symposium 2013.

12. **Maheshbabu Nasani**, Laurence A. Angel “Study of methanobactin and methanobactin analog peptides for selective binding of Cu(II) and Zn(II) ions” Research Symposium 2013.
13. **Chiranjeevi Ravichetti**, Laurence A. Angel “Density functional theory analysis of methanobactin analog peptides for Cu(II) selectivity” Research Symposium 2013.
14. **Swetha Bathula**, Laurence A. Angel “Lipid profiling of *Methylococcus capsulatus* (bath): quantification and characterization of phospholipids, glycolipids and free fatty acids by using RP-HPLC-ESI-MS” Research Symposium 2013.
15. **Archana Gujarri** and Laurence A. Angel, “Mass Spectrometry study of tetraglycine associated with selected metal ions (II): manganese, iron, cobalt, nickel, copper and zinc.” TAMUC Research Symposium 2012.
16. **Sruthi Konakanchi** and Laurence A. Angel, “Ion Mobility - Mass Spectrometry Study of Metal Ion Labeling of the Conformational and Charge States of Lysozyme” TAMUC Research Symposium 2012.
17. **Yuri Kim, Virginia Giganti** and Laurence A. Angel, “Gene cloning of zif268 and identification by ion mobility mass spectrometry” TAMUC Research Symposium 2011.
18. **Tiffany Culver** and Laurence A. Angel, “Interactions of Zn²⁺ on insulin oligomer formation and stability: Analysis using ESI-IM-MS” TAMUC Research Symposium 2011.
19. **Porntip Leerapawaiwong** and Laurence A. Angel, “Palladium complexes as proteomics reagents for the study of the cellular membrane” TAMUC Research Symposium 2011.
20. **Sriramu Kundoor** and Laurence A. Angel, “An ion mobility - mass spectrometry study of leucine-enkephalin (YGGFL) and ubiquitin associated with selected metal ions” TAMUC Research Symposium 2011.
21. **Tianran Shi** and Laurence A. Angel, “Ion mobility and mass spectrometry studies of the conformations of Zn(II) and Mn(II) *bis*-complexes containing the amino acids of His, Cys, Asp, Tyr, Glu and Gly.” TAMUC Research Symposium 2010.
22. **Amy Davis, Porntip Leerapawaiwong, Virginia Giganti** and Laurence A. Angel, “Proteomics of the cellular membrane.” TAMUC Research Symposium 2009.
23. **Brandon Utley** and Laurence A. Angel, “Chemistry of transition metal cations & phenylalanine-containing peptides investigated by mass spectrometry” TAMUC Research Symposium 2009.
24. **Hsin-Yi Tsai** and Laurence A. Angel, “Competitive dissociation channels and conformations of Zn(II) and Mn(II) *bis*-complexes containing amino acids and dipeptides of His, Cys, Asp, Tyr and Gly” TAMUC Research Symposium 2009.
25. **Ronald Rainey, Mickey Matthews**, and Laurence A. Angel, “A biomimetic study of the active site of carbonic anhydrase” TAMUC Research Symposium 2008.

Research Mentor for Graduated MS Thesis Students

1. **Swetha Chintala**, Zn(II) and Cu(I/II) Binding To Alternative Metal Binding Peptide Using Fluorescence and Ion Mobility- Mass Spectrometry Techniques. (graduated Summer 2017)
2. **Jacob McCabe**, “Investigation of Zn(II) and Cu(I) binding characteristics of methanobactin from *Methyosinus trichosporium* OB3b” (graduated Spring 2017)
3. **Vangala, Rajpal**, “Investigation of Metal Binding Properties of Methanobactin and Alternative Metal Binding (Amb₇) Peptides by Fluorescence Spectroscopy And Ion Mobility Mass - Spectrometry”(graduated Spring 2017)
4. **Sravya Challa**, “Analysis of Cu(II) and Zn(II) Binding of Selected Ambs as a Function of Varying pH and Metal Equivalents Employing Ion Mobility Mass Spectrometric Studies” (graduated summer 2016)
5. **Manogna Deconda**, “Study of Zn(II) Binding of an Analog Methanobactin Peptide Using Ion Mobility-Mass Spectrometry” (graduated summer 2016)
6. **Yashodharani Vytla**, “Ion Mobility – Mass Spectrometry Study of the Redox Activity of Methanobactin Analog Peptides” (graduated summer 2016)
7. **Aisha Alshahrani**, “Cu(II), Zn(II) and Ni(II) Binding Studies of a Series of Analog Methanobactin Peptides” (graduated Summer 2014)
8. **Hind Alsheri**, Study of the Metal Ions Binding Behavior of Methanobactin Analog Peptides by Traveling Wave Ion Mobility Mass Spectrometry (graduated Summer 2014)

9. **Ramakrishna Sesham**, “Investigation of Methanobactin and its Analog Peptides” (graduated Fall 2013)
10. **Sahithi Cheruku**, “Collision Cross Section Determination of Lysozyme and Methanobactin Analog Peptide by Travelling Wave Ion Mobility Mass Spectrometry” (graduated Fall 2013)
11. **Uday Kumar Boga Raja**, “Stability and Aggregation of Insulin Oligomers Analyzed by Electrospray Ionization - Ion Mobility Mass Spectrometry (ESI-IMMS).” (graduated Fall 2013)
12. **Anupama Singh Balaji**, “*In Silico* Binding Affinities of Methanobactin Analogs to First Row Transition Metal Ions” (graduated Fall 2013)
13. **Chirag Salva**, “Quantification and characterization of glycolipids and phospholipids of *Chalmydomonas reinhardtii* by HPLC-ESI-TOF-MS” (graduated Summer 2013)
14. **Maheshbabu Nasani**, “Study of methanobactin and methanobactin analog peptides for selective binding of Cu(II) and Zn(II) ions” (graduated Summer 2013)
15. **Chiranjeevi Ravichetti**, “Density functional theory analysis of methanobactin analog peptides for Cu(II) selectivity” (graduated Summer 2013)
16. **Swetha Bathula**, “Lipid profiling of *Methylococcus capsulatus* (bath): quantification and characterization of phospholipids, glycolipids and free fatty acids by using RP-HPLC-ESI-MS” (graduated Summer 2013)
17. **Sruthi Konachanchi**, “Comparative study of metal ion labeling of the conformational and charge states of native and disulfide reduced lysozyme” (graduated Summer 2013)
18. **Srilakshmi Injeti**, “Study of the stability of insulin oligomers in the presence and absence of Zn(II) using mass spectrometry” (graduated Fall 2012)
19. **Kiran Kumar Nalla**, “Mass Spectrometry and computational study of ubiquitin associated with different metal (II) ions: zinc, copper, nickel, cobalt, iron and manganese. (graduated Fall 2012)
20. **Archana Gujarri**, “Mass Spectrometry study of tetraglycine associated with selected metal ions (II): manganese, iron, cobalt, nickel, copper and zinc.”, (graduated Spring 2012)
21. **Porntip Leeprapaiwong**, “Palladium complexes as proteomics reagents for the study of the cellular membrane”, (graduated Spring 2012)
22. **Sriramu Kundoor**, “An ion mobility - mass spectrometry study of leucine-enkephalin (YGGFL) and ubiquitin associated with selected metal ions” (graduated Fall 2011)
23. **Tianran Shi**, “Ion mobility and mass spectrometry studies of the conformations of Zn(II) and Mn(II) *bis*-complexes containing the amino acids of His, Cys, Asp, Tyr, Glu and Gly.” (graduated Fall 2010)
24. **Brandon Utley**, “Chemistry of transition metal cations & phenylalanine-containing peptides investigated by mass spectrometry” (graduated Summer 2009)
25. **Hsin-Yi Tsai**, “Competitive dissociation channels and conformations of Zn(II) and Mn(II) *bis*-complexes containing amino acids and dipeptides of His, Cys, Asp, Tyr and Gly” (graduated Summer 2009)

Mentor of Current MS Graduate Research Thesis Students

1. **Lin, Yu-Fu**, “Tertiary structure of oligopeptides and the comparison of products from the collision-induced dissociation of a series of sequence related heptapeptides”
2. **Enas Yousef**, RUI-NSF funded graduate researcher, “Comparison of charge states and products from the selected metal binding by a series of related heptapeptides”
3. **Rafael Ortiz**, “IM-MS analyses of Wharton’s Jelly Stem Cells infected with cardiac inducing RNA”
4. **Ayobami Ilesanmi**, “Collision cross sections and charge states of a series of related oligopeptides”

Supervision of BS Undergraduate Research

1. **Efren Torres**, McNair Scholar and RUI-NSF funded undergraduate researcher, “Collision Cross Sections and the Tertiary Structure of OligoPeptides”
2. **James Zahnow**, “Comparison of collision-induced dissociation and collision cross sections from a series of sequence related heptapeptides”
3. **Ronald Donjuan** “Comparison of Ag⁺ binding by a series of related heptapeptides”
4. **Trevor Daugherty** “Cu(I), Pb(II), Ag(I), Co(II), Ni(II), Zn(II), Mn(II) Fe(III) pH titrations of methanobactin analog peptide-7 using ion mobility – mass spectrometry”

5. **Rafael Ortiz**, “Zn(II) titration and pH studies of a methanobactin analog peptide-5 using ion mobility – mass spectrometry”
6. **Robert Saenz** and **Victor Serna**, “Competitive Cu(II) titrations of methanobactin analog peptides 1-4 using ion mobility – mass spectrometry”
7. **Amanda Armstrong**, “Study of the molecular characteristics of methanobactin analog peptide-3 using density functional theory molecular modeling”
8. **Yuri Kim** “Ion mobility Mass Spectrometry of Methanobactin from *Methylosinus Trichosporium*”
9. **Virginia Giganti**, “Gene cloning of zif268 and identification by ion mobility mass spectrometry”
10. **Tiffany Culver**, “Interactions of Zn²⁺ on insulin oligomer formation and stability: Analysis using ESI-IM-MS”
11. **Ronald Rainey** “A biomimetic study of the active site of carbonic anhydrase”
12. **Mickey Matthews**, “Histidine Complexes of Zn(II)”
13. **Amy Davis, Porntip** “Pd(II) complexes as proteomic reagents for the cellular membrane”

Supervision of Students in the Research Experience for Undergraduates (NSF-REU) Program.

1. **Amy Davis** and **Lida Vatanpour**, summer 2008.
2. **Thandar Su Myint** and **Tam Phan**, summer 2009.
3. **Alex Best**, **Hossein Ganjizadeh** and **Josh Galloway**, summer 2010.
4. **Yuri Kim** and **Tiffany Culver**, summer 2011.
5. **Sean Hurlburt**, summer 2012.
6. **Kayleah Cumpian** and **Rafael Ortiz**, summer 2014.
7. **Francisco Rogers**, summer 2015.
8. **Joshua Pettibon**, summer 2016.
9. **Ying Qin**, summer 2017.
10. **Cole Donald** and **Jorge Ahumada** summer 2018.

Collaborations

Yelica Rodriguez (Biomedical Institute for Regenerative Research, Texas A&M University - Commerce) Cardioprotective effect of Wharton’s Jelly Stem Cells derived exosomes in Ossabaw miniature swine (*Sus scrofa*) model of metabolic syndrome.

Michael C. Byington and **Peter G. Vekilov** (Department of Chemical and Biomolecular Engineering, University of Houston) Weakly-bound Dimers that Underlie the Mesoscopic Protein-rich Clusters in Lysozyme Solutions

Touradj Solouki (Baylor University), **DongWon Choi** (Texas A&M University - Commerce) Characterization of solution and gas-phase behavior of methanobactin peptides.

Michael Hanna (Texas A&M University - Commerce) Gene Cloning of zinc finger (zif268) with conformational and binding analysis by ion mobility mass spectrometry.

Amala Dass (University of Mississippi) Ion mobility-mass spectrometry analysis of gold nanoclusters.

Frank Miskevich (Texas A&M University - Commerce) **Nenad Kostic** (Texas A&M University - Commerce) Metal ion complexes as proteomic reagents for cellular membranes and identifying glycolipids in stem cells.

Steven Starnes (Texas A&M University - Commerce) Characterizing and identifying porphyrin based receptors.

Services to the Chemistry Profession

Reviewer of Journal Manuscripts

1. *Rapid Communications in Mass Spectrometry*. (4 articles)
2. *Journal of The American Society for Mass Spectrometry*. (2 articles)
3. *Physical Chemistry Chemical Physics, Royal Society of Chemistry*. (1)
4. *Chemical Physics Letters*. (1)
5. *Coordination Chemistry Reviews*.(1)
6. *Small*. (1)
7. *International Journal of Rare Diseases and Disorders* (1)

Reviewed National Science Foundation Proposals

1. **Panelist National Science Foundation: Major Research Instrumentation Mass Spectrometry / Separations** Reviewed proposals. Traveled to panel meeting Alexandria, VA 04/23/2018 -04/24/2018 .
2. **National Science Foundation Graduate Research Fellowship Proposal** –served as a panelist and reviewed 20 graduate applications in the chemistry of life processes category. (December 2015)
3. **National Science Foundation Grant Proposal** - Chemical Measurements and Imaging CAREER (2011)

Organizer of National and Local Research Meetings

1. **Presiding organizer** of the section “Mass Spectrometry and Related Technologies for Energy and Fuels” at the 247th American Chemical Society National Meeting and Exposition, Dallas TX March 16-20 2014.
2. **Organizing committee**, judge and prize organizer for The 46th ACS DFW MEETING-in-MINIATURE, Texas A&M University-Commerce, Commerce, Texas, Saturday, April 27, 2013.

Services to the Chemistry Department

Chemistry Graduate Program Advisor, 2014 -Present. Review new M.S. student applications and make recommendations to the chemistry faculty. Advise students on course selections relating to M.S. Chemistry degrees, make changes in DegreeWorks and make petitions. Check all requirements had been met for graduating M.S. students, advise students of final requirements, and organize and administer the final comprehensive exam. I have developed the Masters’ Student Handbook which describes the class requirements, research steps to graduation and deadlines for completing proposal, thesis and the final comprehensive exam. This work continues in the summer where I organize the non-thesis examinations, graduation of students, review of new applications, and advising students. In the summer of 2015, I organized the graduation of twenty MS non-thesis students and about ten MS thesis students.

Department of Chemistry: BS Chemistry Program Institutional Effectiveness. Department Author and faculty liaison for the Institutional Effectiveness Results and Institutional Effectiveness Plans for years 2010-2018. I have worked as the lead with the other chemistry faculty and department head for developing and implementing capstone course assessments for continuously improving course activity and pedagogical skills. The challenge is to enhance student learning within the chemistry undergraduate BS programs and to meet the standards of Southern Association of Colleges and Schools (SACS). I have organized the discussions with faculty for developing the assessments, gathering the outcomes, and deciding on modifications to course activity and pedagogy. In particular I have developed the assessments and evaluations for the Analytical and Instrumental Chemistry courses, and the Global course Chemical Science & Profession and Graduate Seminar.

Chemistry Undergraduate Program Advisor 2012 -2014. Advised students on course selections relating to the BS Chemistry degrees. Worked with DegreeWorks to organize students’ degrees. Checked all requirements had been met for graduating students.

Served on the Chemistry Department Curriculum Committee. Developing and documenting the principles of the Chemistry Department’s curriculum. 2012-Present.

Served on the Chemistry Undergraduate and Graduate Scholarship Committee, 2010-Present. Review applications and make recommendations.

Served on the Chemistry Graduate Fellowship Endowment Committee, 2014-Present. Review applications and make recommendations.

Outreach Programs for Commerce Middle School 8th graders. (Two events: 5th May, 2017 and 9th March, 2018, 8am-12pm.) Instructed hands-on lab on municipal water treatment and Commerce’s Drinking Water Quality for 8 groups of 12-20 students.

Served on the ACS Committee on Professional Training. Completed course material reports for CHEM 340, CHEM 441 and CHEM 352 for the approval process for the department's ACS-approved chemistry program.

Organized the chemistry department's trip and drove students to the American Chemical Society regional meeting in Austin, TX in November 2011. Arranged for 30 students from TAMUC to attend the ACS meeting.

Organized the chemistry department's trip and drove students to the American Chemical Society regional meeting in New Orleans, LA in November 2010. Arranged for 28 students from TAMUC to attend the ACS meeting.

Organized the chemistry department's trip and drove students to the American Chemical Society regional meeting in Little Rock, Arkansas in 2008. Arranged for 26 students from TAMUC to attend the ACS meeting.

Worked with chemistry department faculty to organize classes and increase the department's student body. Implemented strategies and outreach programs to increase the Chemistry department's student body.

Faculty representative for the Chemistry Department at the TAMU-Commerce Mane events 2008-2012. Gave presentations, advised students, registered students and gave guided tours of the chemistry department.

Coordinated the chemistry departmental library funds with the Science Reference Librarian and ordered books for the department. (2008-2012) Collected book purchase requests and liaised with the library to purchase books from the chemistry library fund.

Organized chemistry demonstrations for the High School Science Event held in the Science Building 2009. Prepared chemistry demonstrations for high school students open evening event

Chemistry Masters, and Honors Committees Served On

Ekua Maame Anderson, MS committee, Chemistry, Committee Chair: Dr. Lance Whaley, 2008.

Josmalen Ramos, MS committee, Chemistry, Committee Chair: Dr. Stephen Starnes, 2009.

Ying Ji, MS committee, Chemistry, Committee Chair: Dr. Ben Jang, 2009.

Nathaniel Hanson, BSc Honors committee, Chemistry, Committee Chair: Dr. Ben Jang, 2011.

Lakshmi Koya, MS committee, Chemistry, Committee Chair: Dr. Stephen Starnes, 2011.

Himajarani Surapaneni, MS committee, Chemistry, Committee Chair: Dr. Stephen Starnes, 2011.

Juana Rivas, BSc Honors committee, Chemistry, Committee Chair: Dr. Ben Jang, 2012.

Jeffrey Sun, BSc Honors committee, Chemistry, Committee Chair: Dr. Stephen Starnes, 2012.

Prathima Kavuri, MS committee, Chemistry, Committee Chair: Dr. Stephen Starnes, 2012.

Ting Zhou, MS committee, Chemistry, Committee Chair: Dr. Ben Jang, 2012.

Lin Chen, MS committee, Chemistry, Committee Chair: Dr. Stephen Starnes, 2012.

Karthik Akinapelli, MS committee, Chemistry, Committee Chair: Dr. Stephen Starnes, 2012.

Anusha Bommidi, MS committee, Chemistry, Committee Chair: Dr. Stephen Starnes, 2012.

Sirisha Makineni, MS committee, Chemistry, Committee Chair: Dr. Stephen Starnes, 2014.

Elvis Boateng, MS committee, Chemistry, Committee Chair: Dr. Stephen Starnes, 2014.

Jayendra Chunduru MS committee, Chemistry, Committee Chair: Dr. Thomas West, 2017

Search Committee Participation

1. **Search committee for the Instructor/Stockroom Manager Chemistry position, September-December 2015.** Screened and interviewed applicants.
2. **Search committee member for Biochemist and Chemistry Head position, 2014.** Attended meetings, developed search criteria, screened applicants and made recommendations.
3. **Search committee member for the Instrumental Manager position, 2014.** Attended meetings, developed search criteria, screened and interviewed applicants.
4. **Chair for the search committee for the Assistant/Associate Professor for Inorganic Chemistry tenure-track position, February – May 2012.** Organized and implemented the search procedures for an inorganic chemist. Arranged meetings to screen and interview applicants.
5. **Served on the search committee member for the Instructor/Stockroom Manager Chemistry position, February – May 2012.** Attended meetings, developed search criteria, screened and interviewed applicants.
6. **Search committee member for the Assistant/Associate Professor for Biochemistry tenure-track position, 2009.** Attended meetings, developed search criteria, screened and interviewed applicants.
7. **Search committee member for the Visiting Professor for Chemistry 1-year position, 2009.** Attended meetings, developed search criteria, screened and interviewed applicants.

Services to the College

Member of the CoSE (formerly COSEA) College Curriculum Committee 2012 –Present. Review the curriculum changes made at the departmental level and assessing how they affect the curriculum of other departments in the CoSE College. Developing and documenting the principles of the CoSEA College curriculum and applying approval to those changes.

Member of the CoSEA Institutional Effectiveness Committee charged with developing program assessment criteria to meet the standards of SACS. Committee member developing and implementing degree and course assessment criteria.

Member of the Computational Science (CPS) committee for developing a proposal for introducing a new Ph.D Computational Science program to TAMU-Commerce. Developed the computational science program initiative with project descriptions at the interface of chemistry, biology and computer science.

Member of the Science Building safety committee a group charged with implementing improved standards and best practices into all aspects of safety for the Science Building. Committee member developing the science safety standards as applied to the Science Building.

Member of Biology Master's Thesis Committees

John Coon, MS committee, Biology, Committee Chair: Dr. Frank Miskevich, 2009.

Emmanuel Williams, MS committee, Biology, Committee Chair: Dr. Jeff Kopachena, 2010.

Faculty Search Committee Participation

1. **Served on the search committee for the Professor of Agronomy, Agricultural Department tenure-track position, 2014.** Developed search procedures and screened and interviewed applicants.
2. **Search committee member for the Head of Biology tenure-track position, 2013-2014.** Implemented the search procedures for Head of Biology. Screened and interviewed applicants.
3. **Search committee member for the Head of Biological and Environmental Sciences 2012.** Attended meetings, developed search criteria, screened and interviewed applicants.

Services to the University

Served on the Graduate Council 2013-2016. Attended on a monthly basis the meetings of the Graduate Council and discussed and voted on Graduate laws and bylaws. Served as an active member of the graduate curriculum committee who reviewed and made recommendations to changes to the graduate programs from the departments.

Served on the Faculty Development Committee 2012-2016. Evaluated applications and made recommendations for faculty development funds for enhancing research and creativity. Developed guidelines for the evaluation of Development Grant applications and implementations for increasing awareness of A&M-Commerce faculty of the opportunities of funding.

Served on the Student Appeals Committee, 2011-2016. Listened to student academic appeals and made decisions relating to their appeal, academic record and university standing.

Member of the SACS Education Committee 2012 –2014. Developed and documented the principles of accreditation foundations for quality enhancement. Primary responsibility was for section 3.4.10: Responsibility for curriculum.

Member of the K-12 group for developing the proposal “Improving Science Education in the North-East Texas Region “ NSF GK-12 grant, \$2,844,584, Dr. Li, Dr. Reid, Dr. Kopachena and Dr. Angel (Co-PI) Developed the chemistry contribution to the proposal based on instrumental and computational chemistry projects designed for high school students.

Served on Proposal Defenses as Graduate Council Representative: Doctoral Committees

1. **Ruth Whitely**, PhD defense, Psychology, Graduate Council Representative, Committee Chair: Sandra Kimbrough, 2010.
2. **Anjeanette Newville**, PhD defense, Supervision, Curriculum & Instruction-Higher Education, Graduate Council Representative, Committee Chair: Dr. Leah Wickersham, 2010.
3. **Melissa Hawthorne**, PhD defense, Educational Psychology, Grad. Council Rep., Com. Chair: Dr. Karin Tochkov, 2012.
4. **Jan Mallett**, Proposal Defense, Graduate Council Representative: Dr. Laurence Angel 2013.
5. **Camille Malone**, Proposal Defense Graduate Council Representative: Dr. Laurence Angel 2014.