Edward Turos, Ph.D.

Professor of Chemistry

Business: Department of Chemistry
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Research Interests

Development of new synthetic methodologies and their application to problems in biology. Current efforts are on the design of novel antibacterial and anticancer agents.

Academic Appointments

2003-Present	Professor of Chemistry, University of South Florida
1996-2003	Associate Professor of Chemistry, University of South Florida
1989-1996	Assistant Professor of Chemistry, State University of New York, Buffalo

Educational Background

1987-1989	National Institutes of Health Postdoctoral Fellow, Yale University, Professor Samuel J. Danishefsky (Sponsor), natural products synthesis
1985-1986	American Chemical Society Graduate Fellow, Dow Chemical Company Foundation, Pennsylvania State University
1982-1986	Pennsylvania State University, University Park, Ph.D. in Chemistry, "Stereoselective Synthesis of Vicinal Diamines Using Sulfur *bis*-Imide Dienophiles", Professor Steven Weinreb (Thesis Advisor)
1982-1983	Eastman Kodak Graduate Fellow, Pennsylvania State University
1982	Towson State University, B.S. in Chemistry, *Summa Cum Laude*
1981	National Institutes of Health Federal Summer Intern, National Cancer Institute, Frederick Cancer Research Facility, Fort Detrick, MD

Professional Activities and Honors

2011-Present	Co-coordinator of Graduate Studies, Faculty Affairs, Department of Chemistry, University of South Florida
2011-Present	Co-Founder, KeriCure, Inc., Tampa, FL
2011, 1998	Undergraduate Teaching Award, Department of Chemistry, USF
2009-Present	Advisory Board Member, Nanomaterials and Nanomaterials Research Center, University of South Florida
2009-Present	Member, USF Center for Nanomedicine, University of South Florida
2006-2009	Acting Director, USF Center for Molecular Diversity in Drug Design, Discovery, and Delivery, University of South Florida
2006-2009	Co-investigator (with Peter Stroot, Daniel Lim, and Richard Heller), Florida Center of Excellence in Biomolecular Identification and Targeted Therapeutics
2006-2007	Associate Chair, Department of Chemistry, University of South Florida
1998-2008	Organic Chemistry Division Coordinator, Department of Chemistry, University of South Florida
2003-Present	Co-Founder, Nanopharma Technologies, Inc., Tampa, FL
2002	Outstanding McNair Faculty Research Mentor, University of South Florida
2000	Visiting Professor, Department of Chemistry, University of Oviedo, Spain
1998-Present	Member of the H. Lee Moffitt Cancer Center and Research Institute, University of South Florida

Service on Grant Review Panels and Editorial Boards

NIH, Drug Metabolism and Pharmacology, Ad hoc member (Feb 2004, 2005)

Grant reviewer for National Science Foundation, Petroleum Research Fund

International Editorial Board of *Heterocyclic Communications*

Symposia and Meetings Organized

Florida Center of Excellence in Biomolecular Identification and Targeted Therapeutics (FCoE-BITT) Research Symposium (2007, 2009)

Raymond N. Castle Graduate Research Symposium (1999, 2001, 2013)

Florida Organic Chemistry Faculty Conference (1998-2001)

Chemistry Graduate Research Symposium, SUNY Buffalo (1989)

Research Support

(1) Agency: **Petroleum Research Fund, American Chemical Society**
Amount: $21,000 (Type G with summer supplement)
Duration: June 1, 1991-August 31, 1993
Title: *An Organotransition Metal Strategy for Polypropionate Construction*

(2) Agency: **Wendy Will Case Cancer Fund**
Amount: $16,500
Duration: January 1, 1993-December 31, 1993
Title: *Development of New Enzyme Inhibitors and Synthetic Reagents Using Organosulfur Chemistry*

(3) Agency: **Invention Commercialization Enhancement Program** (SUNY Buffalo)
Amount: $9,500
Duration: June 1, 1994-May 30, 1995
Title: *Design and Synthesis of Novel Penicillin and Penem Analogues*

(4) Agency: **Petroleum Research Fund, American Chemical Society**
Amount: $50,000 (Type AC)
Duration: September 1, 1995-August 31, 1997
Title: *Design and Synthesis of Novel β-Lactams*

(5) Agency: **NATO Collaborative Research Grant**
Amount: $5,600 for travel
Co-PI: Dr. Francisco Gonzalez (Universidad de Oviedo, Spain)
Duration: July 1996-June 1998
Title: *Design, Synthesis, and Biological Evaluation of Novel Bicyclic β-Lactams*

(6) Agency: **Research Council and Creative Scholarship Award** (University of South Florida)
Amount: $7,500
Duration: January 1, 1997-August 31, 1997
Title: *Novel Inhibitors for Probing the Biochemical Basis of Cancer*

(7) Agency: **Layton Bioscience, Inc.**
Amount: $5,000
Duration: June 1, 1998-August 31, 1998
Title: *Synthesis of Selected Inhibitors of the Nicotine Receptor for Studies on Tourette's Syndrome*

(8) Agency: **McNair Scholars Program** (University of South Florida)
Amount: $1,300
Duration: September 1, 1998-July 31, 1998
Title: *Faculty Mentor and Research Advisor of Alex Paloma*

(9) Agency: **University Honors Program** (University of South Florida)
Amount: $400
Duration: January 1, 1998-December 31, 1998
Title: *Research Advisor of Alex Paloma*

(10) Agency: **McNair Scholars Program** (University of South Florida)
Amount: $500
Duration: June 1999-August 31, 1999

Title: *Faculty Mentor of Gil Brito*

(11) Agency: **Research Council and Creative Scholarship Award**, (University of South Florida)
Amount: $7,500
Duration: May 1, 1999-April 30, 2000
Title: *Antibiotics for Controlling Drug-Resistant Bacterial Infections*

(12) Agency: **McNair Scholars Program** (University of South Florida)
Amount: $1,300
Duration: September 1, 2001-July 31, 2002
Title: *Faculty Mentor and Research Advisor of Arturo Torres*

(13) Agency: **National Institutes of Health**
Amount: $1,637,500
Duration: March 15, 2002-March 14, 2007
Title: *N-Thiolated β-Lactams*

(14) Agency: **Department of Defense**
Amount: $491,999
Duration: March 24, 2003-March 23, 2006
Title: *Synthetic β-Lactam Antibiotics as a Selective Breast Cancer Cell Apoptosis Inducer: Significance in Breast Cancer Prevention and Treatment*

(15) Agency: **National Science Foundation, STTR Phase I**
Amount: $100,000 shared 50/50 with Nanopharma Technologies
Duration: July 1, 2004-June 30, 2005
Title: *Antibacterially-Active Nanoparticles*

(16) Agency: **National Institutes of Health, STTR Phase I**
Amount: $99,750 shared 50/50 with Nanopharma Technologies
Duration: October 1, 2004-March 31, 2005
Title: *A Mechanistically Novel Antibiotic for Anthrax*

(17) Agency: **National Science Foundation, STTR Phase II**
Amount: $500,000 shared 50/50 with Nanopharma Technologies
Duration: August 1, 2006-July 31, 2008
Title: *Antibacterially-Active Nanoparticles*

(18) Agency: **Florida High Tech Corridor**
Amount: $56,000
Duration: August 1, 2005-June 30, 2006
Title: *Antibacterially-Active Nanoparticles*

(19) Agency: **Florida High Tech Corridor**
Amount: $250,000
Duration: January 1, 2007-December 31, 2008
Title: *Antibacterially-Active Nanoparticles*

(20) Agency: **State of Florida Center of Excellence**
Amount: $8,000,000 (one of four PI's)

Duration: January 1, 2007-December 31, 2009
Title: *Florida Center of Excellence in Biomolecular Identification and Targeted Therapeutics*

(21) Agency: **University of South Florida**
Amount: $3,000,000 (one of four PI's)
Duration: January 1, 2007-December 31, 2009
Title: *THRUST Initiative in the Life Sciences*

(22) Agency: **Florida Center of Excellence for Biomolecular Identification and Targeted Therapeutics Seed Grant**
Amount: $60,000 (shared with Dr. Dennis Kyle, USF Public Health)
Duration: August 1, 2007-July 31, 2008
Title: *Nanoparticle-based Delivery of Chloroquine-Resistance Reversal Agents for Malaria*

(23) Agency: **DARPA Defense Sciences Research and Technology**
Amount: $1,200,000 (shared with Drs. Rich Heller, Burt Anderson, Mark McLaughlin)
Duration: August 29, 2008-February 23, 2010
Title: *Drug Discovery, Design and Delivery*

(24) Agency: **National Science Foundation, STTR Phase IIb**
Amount: $50,001 of the $120,974 awarded to Nanopharma Technologies
Duration: August 1, 2008-July 31, 2009
Title: *Antibacterially-Active Nanoparticles*

(25) Agency: **Florida High Tech Corridor**
Amount: $50,001 of the $58,401 awarded to Nanopharma Technologies
Duration: November 1, 2008-June 30, 2009
Title: *Antibacterially-Active Nanoparticles*

(26) Agency: **Kericure, Inc.**
Amount: $32,500
Duration: Novemeber 1, 2012-September 30, 2013
Title: *Nanoparticles for Drug Delivery*

Publications

A. RESEARCH ARTICLES

From Graduate Studies (Penn State University)

(1) "An Alternative Procedure for the Aluminum-Mediated Conversion of Esters to Amides," Jeremy I. Levin, Edward Turos, and Steven M. Weinreb, *Synthetic Communications* **12**, 989 (1982).

(2) "Stereochemical Studies of Thermal Intermolecular and Intramolecular N-Sulfonylimine Ene Reactions," David M. Tschaen, Edward Turos, and Steven M. Weinreb, *Journal of Organic Chemistry* **49**, 5058 (1984).

(3) "Further Studies on Stereoselective Synthesis of Vicinal Diamines from 3,6-Dihydrothiazine-1-imines," Hideaki Natsugari, Edward Turos, Steven M. Weinreb, and Raymond J. Cvetovich, *Heterocycles* **25**, 19 (1987).

(4) "An Attempted Synthesis of Biotin," Edward Turos, M. Parvez, Ravi S.Garigipati, and Steven M. Weinreb, *Journal of Organic Chemistry* **53**, 1116 (1988).

From Postdoctoral Studies (Yale University)

(5) "The Total Synthesis of the *Fusarium* Toxin, Equisetin: Proof of the Stereochemical Relationship of the Tetramate and Terpenoid Sectors," Edward Turos, James E. Audia, and Samuel J. Danishefsky, *Journal of the American Chemical Society* **111**, 8231 (1989).

(6) "An Entry to the (B:C Bis-Hydroquinone) Leucodaunomycin Series Containing an Intact Carbohydrate," Gary A. Sulikowski, Edward Turos, and Samuel J. Danishefsky, *Journal of the American Chemical Society* **113**, 1371 (1991).

As an Independent Investigator (SUNY Buffalo)

(7) "Lewis Acid-Promoted Addition of Allyl(cyclopentadienyl)iron(II) Dicarbonyl to Aldehydes: A New Allylation Method," Gregory E. Agoston, Maria P. Cabal, and Edward Turos, *Tetrahedron Letters* **32**, 3001 (1991).

(8) "Lewis Acid-Promoted Addition of Allyl(cyclopentadienyl)iron(II) Dicarbonyl to Unactivated Ketones," Songchun Jiang and Edward Turos, *Tetrahedron Letters* **32**, 4639 (1991).

(9) "A Simple Three-Component Olefin Coupling Procedure," Edward Turos, Kenneth Boy, and Xiaofeng Ren, *Journal of Organic Chemistry* **57**, 6667 (1992).

(10) "Halogenation Reactions of Epoxides," Monika I. Konaklieva, Michele L. Dahl, and Edward Turos, *Tetrahedron Letters* **33**, 7093 (1992).

(11) "Novel Ion Molecule Reactions of C_{60}^{2+} with NH_3," James J. Stry, M. Todd Coolbaugh, Edward Turos, and James F. Garvey, *Journal of the American Chemical Society* **114**, 7914 (1992).

(12) "Regiochemical Studies of Halocyclization Reactions of Unsaturated Sulfides," Xiaofeng Ren, and Edward Turos, *Tetrahedron Letters* **34**, 1575 (1993).

(13) "[3+2]-Cycloaddition Reactions of Allyl(cyclopentadienyl)iron(II) Dicarbonyl with Unactivated Carbonyl Compounds," Songchun Jiang and Edward Turos, *Organometallics* **12**, 4280 (1993).

(14) "Synthesis of a Novel Class of β-Lactams Related to the Penicillin and Penem Antibiotics," Xiao-Feng Ren and Edward Turos, *Journal of Organic Chemistry* **59**, 5858 (1994).

(15) "Lewis Acid Catalyzed [3+2]-Cycloaddition Reactions of Allyl(cyclopenta-dienyl)iron(II) Dicarbonyl With Carbonyl Compounds," Songchun Jiang and Edward Turos, *Tetrahedron Letters* **35**, 7889 (1994).

(16) "Allylation and [3+2]-Cycloaddition Reactions of Imines With Allyl(cyclopenta-dienyl)iron(II) Dicarbonyl Complexes," Ti Chen, Songchun Jiang, and Edward Turos, *Tetrahedron Letters* **35**, 8325 (1994).

(17) "Triethylsilyl Chloride" in *Encyclopedia of Reagents for Organic Synthesis*, L. Paquette, Ed.; Wiley.

(18) "Triethylsilyl Perchlorate" in *Encyclopedia of Reagents for Organic Synthesis*, L. Paquette, Ed.; Wiley.

(19) "Triethylsilyl Trifluoromethanesulfonate" in *Encyclopedia of Reagents for Organic Synthesis*, L. Paquette, Ed.; Wiley.

(20) "Triphenylsilyl Chloride" in *Encyclopedia of Reagents for Organic Synthesis*, L. Paquette, Ed.; Wiley.

(21) "Studies on the Reactions of Episulfides with Tributyltin Hydride," Mark H. Izraelewicz, Mohomod Nur, Richard T. Spring, and Edward Turos, *Journal of Organic Chemistry* **60**, 470 (1995).

(22) "Synthesis of Inversely-Fused Bicyclic β-Lactams," Xiao-Feng Ren, Monica I. Konaklieva, and Edward Turos, *Journal of Organic Chemistry* **60**, 4980 (1995).

(23) "Regiochemical and Stereochemical Studies on Halocyclization Reactions of Unsaturated Sulfides," Xiao-Feng Ren, Edward Turos, Charles H. Lake, and Melvyn Rowen Churchill, *Journal of Organic Chemistry* **60**, 6468 (1995).

(24) "Studies on Halogen-Induced Ring Expansions of Unsaturated Episulfides," Xiao-Feng Ren, Monika I. Konaklieva, Edward Turos, Lynn M. Krajkowski, Charles H. Lake, Thomas S. Janik, and Melvyn Rowen Churchill, *Journal of Organic Chemistry* **60**, 6484 (1995).

(25) "BF_3-Etherate Promoted Reactions of Allyl(cyclopentadienyl)iron(II) Dicarbonyl Complexes

with Carbonyl Compounds," Songchun Jiang, Gregory E. Agoston, Ti Chen, Maria-Paz Cabal, and Edward Turos, *Organometallics* **14**, 4697 (1995).

(26) "New Methodology for the Synthesis of Furans, Pyrrolidines, and 1,3-Polyols Using Allyl(cyclopentadienyl)iron(II) Dicarbonyl Complexes," Songchun Jiang, Ti Chen, and Edward Turos, *Organometallics* **14**, 4710 (1995).

As an Independent Investigator (University of South Florida)

(27) "New Allylation and [3+2]-Cycloaddition Methodology Using Allylic (Cyclopentadienyl)iron(II) Dicarbonyl Complexes," Songchun Jiang, Gregory E. Agoston, Ti Chen, Maria Paz-Cabal, Uzma Riaz, Khalid Ahsan, and Edward Turos, *Recent Research Developments in Organic Chemistry* **1**, 229-237 (1997).

(28) "Palladium-Promoted Derivatizations of Novel C-Fused Penem Ring Systems," Monika I. Konaklieva, Hongchang Shi, and Edward Turos, *Tetrahedron Letters* **38**, 8647-8650 (1997).

(29) "Studies on Nonconventionally Fused Bicyclic Beta-Lactams," Xiao-Feng Ren, Monika I. Konaklieva, Hongchang Shi, Sonja Dickey, Daniel V. Lim, Javier Gonzalez, and Edward Turos, *Journal of Organic Chemistry* **63**, 8898-8917 (1998).

(30) "Silyl-Accelerated 1,5-Hydrogen Migrations in Vinylcyclopropanes," Yi-Lun Lin and Edward Turos, *Journal of the American Chemical Society* **121**, 856-857 (1999).

(31) "N-Thiolated Bicyclic and Monocyclic β-Lactams," Edward Turos, Monika I. Konaklieva, Rex X.-F. Ren, Hongchang Shi, Javier Gonzalez, Sonja Dickey, and Daniel Lim, *Tetrahedron* **56**, 5571-5578 (2000).

(32) "Rhodium-Catalyzed Cyclopropanations of Allylsilanes and Allylstannanes: The Role of the Silyl/Stannyl Group in Trans-Cis Stereoselection," Yi-Lun Lin and Edward Turos, *Journal of Organometallic Chemistry* **630**, 57-66 (2001).

(33) "Studies of Silyl-Accelerated 1,5-Hydrogen Migrations in Vinylcyclopropanes," Yi-Lun Lin and Edward Turos, *Journal of Organic Chemistry* **66**, 8751-8759 (2001).

(34) "A Novel β-Lactam Antibiotic Activates Tumor Cell Apoptotic Program by Inducing DNA Damage," David M. Smith, Aslamussaman Kazi, Lisa Smith, Timothy E. Long, Bart Heldreth, Edward Turos, and Q. Ping Dou, *Molecular Pharmacology* **61**, 1348-1358 (2002).

(35) "*N*-Thiolated β-Lactams," Timothy E. Long and Edward Turos, *Current Medicinal Chemistry-Anti-Infective Agents* **1**, 251-268 (2002).

(36) "*N*-Thiolated β-Lactams: Novel Antibacterial Agents for Methicillin-resistant *Staphylococcus aureus*," Edward Turos, Timothy E. Long, Monika I. Konaklieva, Cristina Coates, Jeung-Yeop

Shim, Sonja Dickey, Daniel V. Lim, and Andrew Cannons, *Bioorganic and Medicinal Chemistry Letters* **12**, 2229-2231 (2002).

(37) "*N*-Thiolated β-Lactam Antibacterials: Defining the Role of Unsaturation in the C_4 Side Chain," Cristina Coates, Timothy E. Long, Edward Turos, Sonja Dickey, and Daniel V. Lim, *Bioorganic and Medicinal Chemistry* **11**, 193-196 (2003).

(38) "Effect of Aryl Ring Fluorination on the Antibacterial Properties of C_4 Aryl-Substituted *N*-Methylthio β-Lactams," Timothy E. Long, Edward Turos, Monika I. Konaklieva, Allison L. Blum, Amal Amry, Ejae A. Baker, Lita S. Suwandi, Melodie D. McCain, Miti F. Rahman, Sonja Dickey, and Daniel V. Lim, *Bioorganic and Medicinal Chemistry* **11**, 1859-1863 (2003).

(39) "Lipase-Catalyzed Resolution of Racemic Substituted 4-Aryl β-Lactams," Jason A. Carr, Talal F. Al-Azemi, Timothy E. Long, Jeung-Yeop Shim, Cristina A. Coates, Edward Turos, and Kirpal S. Bisht, *Tetrahedron* **59**, 9147-9160 (2003).

(40) "Novel *N*-Thiolated β-Lactam Antibiotics Selectively Induce Apoptosis in Human Leukemic, but Not Non-Transformed Natural Killer Cells and Inhibit the Transforming Activity of Prostate Cancer Cells," Aslamuzzaman Kazi, Randy Hill, Timothy E. Long, Deborah J. Kuhn, Edward Turos, and Q. Ping Dou, *Biochemical Pharmacology* **67**, 365-374 (2004).

(41) "β-Lactams and Their Potential Use as Novel Anti-Cancer Chemotherapeutic Drugs," Deborah Kuhn, Cristina Coates, Kenyon Daniel, Di Chen, Mohammad Bhuiyan, Edward Turos, and Q. Ping Dou, *Frontiers in Bioscience*, **9**, 2605-2617 (2004).

(42) "Structure-Activity Relationships of *N*-Methylthiolated β-Lactam Antibiotics with C_3 Substitutions and Their Selective Induction of Apoptosis in Human Cancer Cells," Deborah Kuhn, Yang Wang, Vesna Minic, Cristina Coates, G. Suresh Kumar Reddy, Kenyon G. Daniel, Jeung-Yeop Shim, Di Chen, Kristin R. Landis-Piwowar, Fred R. Miller, Edward Turos, and Q. Ping Dou, *Frontiers in Bioscience* **10**, 1183-1190 (2005).

(43) "Microbiological Properties and Modes of Action of Organosulfur-Based Anti-infectives," Bart Heldreth and Edward Turos, *Current Medicinal Chemistry-Anti-Infective Agents* **4**, 295-315 (2005).

(44) "*N*-Methylthio β-Lactam Antibacterials: Effects of the C_3/C_4 Ring Substituents on Anti-MRSA Activity," Edward Turos, Cristina Coates, Jeung-Yeop Shim, Yang Wang, J. Michelle Roettgers, Timothy E. Long, G. Suresh Kumar Reddy, Alex Ortiz, Marci Culbreath, Sonja Dickey, Daniel V. Lim, Eduardo Alonso and Javier Gonzalez, *Bioorganic and Medicinal Chemistry* **13**, 6289-6308 (2005).

(45) "β-Lactams," Cristina Coates, Jasmine Kabir, and Edward Turos, Compounds with Four and

Three Carbon-Heteroatom Bonds, *Science of Synthesis, Houben-Weyl Methods of Molecular Transformations*, Volume 21, Section 21.9, 609-646 (2005).

(46) "N-Thiolated 2-Oxazolidinones: A New Family of Antibacterial Agents for Methicillin-Resistant *Staphylococcus aureus* (MRSA) and *Bacillus anthracis*," Rajesh K. Mishra, Kevin D. Revell, Cristina M. Coates, Edward Turos, Sonja Dickey, Daniel V. Lim, *Bioorganic and Medicinal Chemistry Letters* **16**, 2081-2083 (2006).

(47) "N-Thiolated β-Lactams: A New Family of anti-*Bacillus* Agents," Edward Turos, Timothy E. Long, Bart Heldreth, Jeanne M. Leslie, Suresh K.R. Guntireddygari, Yang Wang, Cristina Coates, Monika Konaklieva, Sonja Dickey, Daniel V. Lim, Eduardo Alonso, Javier Gonzalez, *Bioorganic and Medicinal Chemistry Letters* **16**, 2084-2090 (2006).

(48) "N-Thiolated β-Lactam Antibacterials: Effects of the N-Organothio Substituent on anti-MRSA Activity," Bart Heldreth, Timothy E. Long, Seyoung Jang, Suresh K.R. Guntireddygari, Edward Turos, Sonja Dickey, Daniel V. Lim, *Bioorganic and Medicinal Chemistry* **14**, 3775-3784 (2006).

(49) "Antibiotic-Conjugated Polyacrylate Nanoparticles: New Opportunities for Development of Anti-MRSA Agents," Edward Turos, Jeung-Yeop Shim, Yang Wang, Kerriann Greenhalgh, G. Suresh Kumar Reddy, Sonja Dickey, Daniel V. Lim, *Bioorganic and Medicinal Chemistry Letters* **17**, 53-56 (2007).

(50) "*N*-Thiolated β-Lactams: Studies on the Mode of Action and Identification of a Primary Cellular Target in *S. aureus*," Kevin D. Revell, Bart Heldreth, Timothy E. Long, Seyoung Jang, and Edward Turos, *Bioorganic and Medicinal Chemistry* **15**, 2453-2467 (2007).

(51) "Synthesis of 2-Oxazolidinones from β-Lactams: Stereospecific Total Synthesis of (-)-Cytoxazone and All of its Stereoisomers," Rajesh Kumar Mishra, Cristina M. Coates, Kevin D. Revell, and Edward Turos, *Organic Letters* **9**, 575-578 (2007).

(52) "Glycosylated Polyacrylate Nanoparticles by Emulsion Polymerization," Sampath Abeylath and Edward Turos, *Carbohydrate Polymer*s, **70**, 32-37 (2007).

(53) "Penicillin-Bound Polyacrylate Nanoparticles: Restoring the Activity of β-Lactam Antibiotics Against MRSA," Edward Turos, G. Suresh Kumar Reddy, Kerriann Greenhalgh, Praveen Ramaraju, Sampath C. Abeylath, Seyoung Jang, Sonja Dickey, Daniel V. Lim, *Bioorganic and Medicinal Chemistry Letters* **17**, 3468-3472 (2007).

(54) "Total Syntheses of (-)-α-Kainic Acid and (+)-α-Allokainic Acid via Stereoselective C-H Insertion and Efficient 3,4-Stereocontrol," Young Chun Jung, Cheol Hwan Yoon, Edward Turos, Kyung Soo Yoo, and Kyung Woon Jung, *Journal of Organic Chemistry* **72**, 10114-10122 (2007).

(55) "Glyconanobiotics: Novel Carbohydrated Nanoparticle Antibiotics for MRSA and *Bacillus anthracis*," Sampath Abeylath, Edward Turos, Sonja Dickey, and Daniel V. Lim, *Bioorganic and Medicinal Chemistry* **16**, 2412-2418 (2008).

(55) "Methods for Purifying and Detoxifying Sodium Dodecyl Sulfate-Stabilized Polyacrylate Nanoparticles," Julio C. Garay-Jimenez, Ashley Young, Danielle Gergeres, and Edward Turos, *Nanomedicine: Nanotechnology, Biology, and Medicine*, **4**, 98-105 (2008).

(56) **"**Anti-tumor Activity of N-Thiolated β-Lactam Antibiotics," Di Chen, Samuel C. Falsetti, Michael Frezza, Vesna Milacic, Aslamussaman Kazi, Qiuzhi Cindy Cui, Timothy E. Long, Edward Turos, and Q. Ping Dou, *Cancer Letter*s, **268**, 63-69 (2008).

(57) "Drug Delivery Approaches to Overcome Bacterial Resistance to β-Lactam Antibiotics," Sampath C. Abeylath and Edward Turos, *Expert Opinion on Drug Delivery*, ***5***, 931-949 (2008).

(58) "Studies on the Antifungal Properties of *N*-Thiolated β-Lactams," Marci O'Driscoll, Kerriann Greenhalgh, Ashley Young, Edward Turos, Sonja Dickey, and Daniel V. Lim, *Bioorganic and Medicinal Chemistry*, **16**, 7832-7837 (2008).

(59) "Unsymmetrical Aryl-alkyl Disulfide Growth Inhibitors of Methicillin-resistant *Staphylococcus aureus* and *Bacillus anthracis*," Edward Turos, Kevin D. Revell, Praveen Ramaraju, Danielle Gergeres, Kerriann Greenhalgh, Ashley Young, Sonja Dickey, Daniel Lim, Nalini Sathyanarayan, Mamoun M. Alhamadsheh, and Kevin Reynolds, *Bioorganic and Medicinal Chemistry*, **16**, 6501-6508 (2008).

(60) "Induction of Tumor Cell Apoptosis by a Novel Class of N-Thiolated β-Lactam Antibiotics with Structural Modifications at N1 and C3 of the Lactam Ring," Michael Frezza, Julio Garay, Di Chen, Cindy Cui, Edward Turos, Q Ping Dou, *International Journal of Molecular Medicine*, **21**, 689-695 (2008).

(61) "*In vivo* Studies of Polyacrylate Nanoparticle Emulsions for Topical and Systemic Applications," Kerriann Greenhalgh and Edward Turos, *Nanomedicine: Nanotechnology, Biology, and Medicine*, **5**, 46-54 (2009).

(62) "A General Route to Cyclopeptide Alkaloids: Total Syntheses and Biological Evaluation of Paliurines E and F, Ziziphines N and Q, Abyssenine A, Mucronine E, and Analogues," Mathieu Toumi, Vincent Rincheval, Ashley Young, Danielle Gergeres, Edward Turos, François Couty, Bernard Mignotte, and Gwilherm Evano, *European Journal of Organic Chemistry*, **20**, 3368-86 (2009).

(63) "Physical Properties and Biological Activity of Poly(butyl acrylate–styrene) Nanoparticle Emulsions Prepared with Conventional and Polymerizable Surfactants," Julio C. Garay-Jimenez,

Danielle Gergeres, Ashley Young, Sonja Dickey, Daniel V. Lim, and Edward Turos, *Nanomedicine: Nanotechnology, Biology, and Medicine*, **5**, 443-451 (2009).

(64) "Glycosylated Vinyl Ethers by the Julia-Lythgoe-Kocienski Olefination: Application to the Synthesis of 2´,5´-Dideoxydisaccharides and Carbohydrated β-Lactams," Iván Pérez-Sánchez and Edward Turos, *Tetrahedron: Asymmetry*, **20**, 1646-1660 (2009).

(65) "Nanobiotics to Combat Bacterial Drug Resistance, " Sampath C. Abeylath and Edward Turos, "Antibiotic Resistance: Causes and Risk Factors, Mechanisms and Alternatives" edited by Adriel R. Bonilla and Kaden P. Muniz, Nova Science Publishers, 425-465 (2009).

(66) "Studies on the Preparation and in vitro Properties of Poly(vinyl benzoate) Nanoparticles for Molecular Delivery," Raphaël Labruère, Renaud Sicard, Ryan Cormier, Leigh West, and Edward Turos, *Journal of Controlled Release* **148**, 234-240 (2010).

(67) "A Convenient Method to Prepare Emulsified Polyacrylate Nanoparticles from Powders for Drug Delivery Applications," Julio C. Garay-Jimenez and Edward Turos, *Bioorganic and Medicinal Chemistry Letters* **21**, 4589-4591 (2011).

(68) "The Impact of Fatty Acids on Antibacterial Properties of N-Thiolated β-Lactams," Katherine R. Prosen, Ronan K. Carroll, Whittney N. Burda, Christina N. Krute, Biplob Bhattacharya, My Lien Dao, Edward Turos, and Lindsey N. Shaw, *Bioorganic and Medicinal Chemistry Letters* **21**, 5293-5295 (2011).

(69) "Synthesis and Antimicrobial Activities of Structurally Novel S,S'-Bis(heterosubstituted) Disulfides," Praveen Ramaraju, Danielle Gergeres, Edward Turos, Sonja Dickey, Daniel V. Lim, John Thomas, and Burt Anderson, *Bioorganic and Medicinal Chemistry Letters* **22**, 3623-3631 (2012).

(70) "Studies on the Antimicrobial Properties of N-Acylated Ciprofloxacin Derivatives," Ryan Cormier, Whittney N. Burda, Lacey Harrington, Jordan Edlinger, Karthik M. Kodigepalli, John Thomas, Rebecca Kapolka, Glen Roma, Burt E. Anderson, Edward Turos, and Lindsey N. Shaw, *Bioorganic and Medicinal Chemistry Letters* **22**, 6513-6520 (2012).

(71) "Synthesis and Biology of N-Thiolated β-Lactams," Biplob Bhattacharya and Edward Turos, *Tetrahedron* **68**, 10665-10685 (2012).

(72) "Attenuating the Size and Molecular Carrier Capabilities of Polyacrylate Nanoparticles by a Hydrophobic Fluorine Effect," Raphaël Labruère and Edward Turos, *Bioorganic and Medicinal Chemistry* **20**, 5042-5045 (2012).

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B. TALKS AT RESEARCH CONFERENCES

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(19) "Antibiotics in the Twentieth Century," Jennifer Ascher and Edward Turos, Florida Academy of Sciences, Tampa, Florida, March 6, 1999

(20) "Synthesis and Characterization of New Monocyclic β-Lactams," Edward Carpenter and Edward Turos, Florida Academy of Sciences, Tampa, Florida, March 6, 1999

(21) "Unusual Monocyclic β-Lactams Having Staphylococcus-Activity," Timothy Long and Edward Turos, Florida Academy of Sciences, Tampa, Florida, March 6, 1999

(22) "Design and Synthesis of Thiosugar Disaccharides," Shimin Xu and Edward Turos, Florida Academy of Sciences, Tampa, Florida , March 6, 1999

(23) "A New Class of β-Lactam Antibacterials," Edward Turos, 17th International Congress of Heterocyclic Chemistry, Vienna, Austria, August 2, 1999

(24) "Current Research on a Novel Class of β-Lactam Antibacterials," Timothy E. Long, Edward Turos, Raymond N. Castle Student Research Conference, University of South Florida, Tampa, Florida, April 28, 2001

(25) "Studies on the Effect of Thioalkyl Substitution on the Antibacterial Properties of N-Thiolated β-Lactams," Bart Heldreth, Edward Turos, Raymond N. Castle Student Research Conference, University of South Florida, Tampa, Florida, April 28, 2001

(26) "Effects of the C-4 Side Chain: Unsaturation Versus Saturation in N-Thiomethyl β-Lactams," Cristina Coates, Edward Turos, Raymond N. Castle Student Research Conference, University of South Florida, Tampa, Florida, April 28, 2001

(27) "Studies of N-Thiolated β-Lactams: A Novel Family of Antibacterial Agents for Drug-Resistant Infections," Jeung-Yeop Shim, Edward Turos, Raymond N. Castle Student Research Conference, University of South Florida, Tampa, Florida, April 28, 2001

(28) "N-Thiolated β-Lactams: A Novel Family of Antibacterial Agents for MRSA," Timothy E. Long, Edward Turos, Sonja Dickey and Daniel V. Lim, 223rd American Chemical Society National Meeting, Orlando, Florida, April 11, 2002

(29) "Structure-Activity Studies on N-Thiolated β-Lactams: Effect of the Organothio Substituent on Antibacterial Activity," Bart Heldreth, Edward Turos, Timothy E. Long, Sonja Dickey and Daniel V. Lim, 223rd American Chemical Society National Meeting, Orlando, Florida, April 11, 2002

(30) "Probing the Effect of Unsaturation on the C-4 Side Chain of N-Thiolated β-Lactam Antibacterials," Cristina Coates, Edward Turos, Timothy E. Long, Sonja Dickey and Daniel V. Lim, 223rd American Chemical Society National Meeting, Orlando, Florida, April 11, 2002

(31) "Studies on the Influence Fatty Ester Side Chains Have on Antibacterial Activity of N-Thiolated β-Lactams," Jeung-Yeop Shim, Edward Turos, Timothy E. Long, Sonja Dickey, Daniel V. Lim, 223rd American Chemical Society National Meeting, Orlando, Florida, April 11, 2002

(32) "N-Thiolated β-Lactams: A Novel Family of Antibacterial Agents for MRSA," Timothy E. Long, Edward Turos, Raymond N. Castle Student Research Conference, University of South Florida, Tampa, Florida, April 13, 2002

(33) "Structure-Activity Studies on N-Thiolated β-Lactams: Effect of the Organothio Substituent on Antibacterial Activity," Bart Heldreth, Edward Turos, Timothy E. Long, Sonja Dickey, Daniel V. Lim, Raymond N. Castle Student Research Conference, University of South Florida, Tampa, Florida, April 13, 2002

(34) "Probing the Effect of Unsaturation on the C-4 Side Chain of N-Thiolated β-Lactam Antibacterials," Cristina Coates, Edward Turos, Timothy E. Long, Sonja Dickey, Daniel V. Lim, Raymond N. Castle Student Research Conference, University of South Florida, Tampa, Florida, April 13, 2002

(35) "Studies on the Influence Fatty Ester Side Chains Have on Anibacterial Activity of N-Thiolated β-Lactams," Jeung-Yeop Shim, Edward Turos, Timothy E. Long, Sonja Dickey, Daniel V. Lim, Raymond N. Castle Student Research Conference, University of South Florida, Tampa, Florida, April 13, 2002

(36) “Emulsified Polymer Nanoparticles: Applications to New Drug Delivery Vehicles,” Edward Turos, Nano/Bio Convergence Conference 2004, Hyatt Regency Cambridge, Cambridge, MA, March 28-30, 2004

(37) “Emulsified Polymer Nanoparticles: Applications to New Drug Delivery Vehicles,” Jeung-Yeop Shim and Edward Turos, Florida Annual Meeting and Exposition, Orlando, FL, May 6, 2004”Antibacterially-Active Polyacrylate Nanospheres,” Helen Wang and Edward Turos, Florida

Annual Meeting and Exposition, Orlando, FL, May 6, 2004

(38) "Sugar-Coated Nanoparticles," Sampath Abeylath and Edward Turos, Florida Annual Meeting and Exposition, Orlando, FL, May 6, 2004

(39) "New Nanoparticle Drug Delivery Platforms," Edward Turos, The 21st Annual International Technology Transfer Forum, Reston, VA, May 9-11, 2004

(40) "Emulsified Polymer Nanoparticles For Drug Delivery And Materials Research," Edward Turos, 2nd Annual Symposium on Nanomedicine and Drug Delivery, Brooklyn Polytechnical Institute, New York City, NY, August 19-20, 2004

(41) "Sugar-Coated Nanobiotics", Sampath Abeylath and Edward Turos, Fifth Annual Raymond N. Castle Student Research Conference, University of South Florida, April 29, 2006

(42) "Surfactant_Free Nanoparticles for Delivery of Antibiotics," Julio Garay and Edward Turos, Fifth Annual Raymond N. Castle Student Research Conference, University of South Florida, April 29, 2006

(43) "Penicillin-bound Nanoparticles: A Potential Way to Overcome Drug Resistance in Bacteria,; Praveen Ramaraju and Edward Turos, Fifth Annual Raymond N. Castle Student Research Conference, University of South Florida, April 29, 2006

(44) "New Functionalized Caprolactone Polymers for Biomedical Uses," Michelle Leslie and Edward Turos, Florida Annual Meeting and Exposition, May 11, 2006, Orlando, FL

(45) "'Surfactant-Free' Nanoparticles for Delivery of Antibiotics," Julio Garay and Edward Turos, Florida Annual Meeting and Exposition, May 11, 2006, Orlando, FL

(46) "Antibiotic-Conjugated Sugar Bearing Polyacrylate Nanoparticles," Sampath Abeylath and Edward Turos, Florida Annual Meeting and Exposition, May 11, 2006, Orlando, FL

(47) "Penicillin-Bound Nanoparticles: A Potential Way to Overcome Drug-Resistance in Bacteria," Praveen Ramaraju and Edward Turos, Florida Annual Meeting and Exposition, May 11, 2006, Orlando, FL

(48) "Inhibition of Type II Fatty Acid Synthesis by Small Aryl-Alkyl Disulfides: Mode of Action and SAR," Kevin Revell and Edward Turos, 58th Southeast Regional Meeting, November 1-4, 2006, Augusta, GA

(49) "Center for Molecular Diversity in Drug Design, Discovery, and Delivery," May 23, 2006, 3rd Annual Florida Tech Transfer Conference, Sarasota, FL

(50) "Polyacrylate Nanoparticle Antibiotics," Edward Turos, Conference on Advances in Nanotechnology: Biomedical Applications, December 8, 2006, H. Lee Moffitt Cancer Center, Tampa, FL

(51) “Florida Center of Excellence in Biomolecular Identification and Targeted Therapeutics,” Edward Turos, The 4th Annual Florida Tech Transfer Conference, Miami, FL, May 29, 2007

(52) “Nanobiotics,” Florida Organic Faculty Conference, Edward Turos, Florida Institute of Technology, Melbourne, FL, March 1, 2008

(53) “Polyacrylate Nanoparticles for Potential Delivery of Chloroquine-Resistance Reversal Agents,” Ryan Cormier, Jason Gause, Edward Turos, Tina Mutka, Dennis E. Kyle, 4th Annual Miniature-in-Meeting, University of South Florida, St. Petersburg, FL, March 28, 2008

(54) “Synthesis and Antibacterial Activities of Hetero Disulfides,” Praveen Ramaraju and Edward Turos, 4th Annual Miniature-in-Meeting, University of South Florida, St. Petersburg, FL, March 28, 2008

(55) “Polyacrylate Nanoparticles for Potential Delivery of Chloroquine-Resistance Reversal Agents,” Ryan Cormier, Jason Gause, Edward Turos, Tina Mutka, Dennis E. Kyle, Raymond N. Castle Student Research Conference, University of South Florida, April 12, 2008

(56) “Polyacrylate Nanoparticles for Potential Delivery of Chloroquine-Resistance Reversal Agents,” Ryan Cormier, Jason Gause, Edward Turos, Tina Mutka, Dennis E. Kyle, Florida Annual Meeting and Exposition, Orlando, FL, May 10, 2008

C. TALKS AT UNIVERSITIES AND COLLEGES WITHIN THE U.S.

(1) "Total Synthesis and Assignment of Absolute Stereochemistry of the Leukemia Toxin Equisetin," SUNY College at Buffalo, Buffalo, New York, February 22, 1990

(2) "An Organometallic Approach to Novel Polypropionates," Canisius College, Buffalo, New York, September 11, 1990

(3) "An Organometallic Approach to Novel Polypropionates," Department of Medicinal Chemistry, SUNY Buffalo, Buffalo, New York, October 11, 1990

(4) "Organometallic Chemistry in Synthesis: Some New Developments," Towson State University, Towson, Maryland, November 6, 1990

(5) "Organometallic Chemistry in Synthesis: Some New Developments," Bloomsburg University, Bloomsburg, Pennsylvania, November 7, 1990

(6) "Organometallic Chemistry in Synthesis: Some New Developments," Shippensburg State College, Shippensburg, Pennsylvania, November 8, 1990

(7) "Organometallic Chemistry in Synthesis: Some New Developments," Loyola College, Baltimore, Maryland, November 9, 1990

(8) "Organometallic Chemistry in Organic Synthesis," SUNY College at Fredonia, Fredonia, New York, October 17, 1991

(9) "New Synthetic Methods Using Organoiron Chemistry," Alfred University, Alfred, New York, February 17, 1992

(10) "An Organoiron Approach to Organic Synthesis," Rochester Institute of Technology, Rochester, New York, April 16, 1992

(11) "New Synthetic Methodology Using Organoiron Complexes," Department of Medicinal Chemistry, SUNY Buffalo, Buffalo, New York, October 23, 1992

(12) "New Synthetic Methodology Using Organoiron Complexes," SUNY College at Geneseo, Geneseo, New York, November 10, 1992

(13) "New Allylation Methodology Using Organoiron Complexes," Niagara University, Niagara, New York, November 15, 1993

(14) "New Allylation Methodology Using Organoiron Complexes," Grove City College, Grove City, Pennsylvania, November 17, 1993

(15) "New Allylation Methodology Using Organoiron Complexes," SUNY College at Buffalo, Buffalo, New York, February 10, 1994

(16) "Design and Synthesis of Novel beta-Lactams", Department of Chemistry, The Scripps Research Institute, La Jolla, California, May 17, 1994

(17) "Design and Synthesis of Novel beta-Lactams", Agouron Pharmaceuticals, La Jolla, California, May 18, 1994

(18) "Design and Synthesis of Novel beta-Lactams", Department of Chemistry, University of California at Irvine, Irvine, California, May 19, 1994

(19) "New Allylation Methodology Using Organoiron Complexes," Department of Chemistry at Riverside, Riverside, California, May 20, 1994

(20) "Design and Synthesis of Novel beta-Lactams", Department of Chemistry and Biochemistry, University of Maryland, College Park, Maryland, September 13, 1994

(21) "Design and Synthesis of Novel beta-Lactams", Department of Chemistry, The Pennsylvania State University, University Park, Pennsylvania, September 20, 1994

(22) "Design and Synthesis of Novel beta-Lactams", Department of Chemistry, Georgia Institute of Technology, Atlanta, Georgia, October 13, 1994

(23) "New Methodology Using Organoiron and Organosulfur Reagents", Department of Chemistry, University of South Carolina, Columbia, South Carolina, October 14, 1994

(24) "New Synthetic Methods Using Organoiron and Organosulfur Reagents", Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, Arkansas, February 23, 1995

(25) "New Synthetic Methodology Using Organoiron and Organosulfur Reagents", Department of Chemistry, University of Central Florida, Orlando, Florida, April 23, 1995

(26) "Organoiron Cycloadditions", NSF Workshop on Organometallic Chemistry, Aspen Institute, Queenstown, Maryland, June 1-4, 1995

(27) “New Synthetic Methods for Preparing Furans, Pyrrolidines, and Unusual beta-Lactams,” Department of Chemistry, Northern Illinois University, DeKalb, Illinois, December 4, 1995

(28) “New Synthetic Routes to Furans, Pyrrolidines, and Unusual beta-Lactams,” Department of Chemistry, University of Missouri, St. Louis, Missouri, December 11, 1995

(29) "New Synthetic Routes to "Biologically Relevant" Heterocycles," Department of Chemistry, Georgetown University, Washington, D.C., January 25, 1996

(30) "New Synthetic Routes to "Biologically Relevant" Heterocycles," Department of Chemistry, University of South Florida, Tampa, Florida, February 29, 1996

(31) "New Synthetic Routes to "Biologically Relevant" Heterocycles," Department of Chemistry, University of Toledo, Ohio, March 6, 1996

(32) "Topics in Organic Synthesis," Department of Chemistry, University of South Florida, Tampa, Florida, September 26, 1996

(33) “Synthesis of Novel β-Lactams: Routes to New Antibiotics?”, Department of Chemistry, Eckerd

College, St. Petersburg, Florida, February 19, 1997

(34) "Studies on Novel β-Lactams," Fourteenth Conference for Organic Chemistry Faculty of Florida Universities and Colleges, University of South Florida, Tampa, Florida, February 28-March 1, 1997

(35) "Studies on Novel β-Lactams," Department of Chemistry, Florida Institute of Technology, Melbourne, Florida, April 7, 1997

(36) “Organic Chemistry in the ‘90’s,” Department of Mathematics, Pi Mu Epsilon Honor Society Induction Ceremony, University of South Florida, Tampa, Florida, April 18, 1997

(37) "Studies on Novel β-Lactams," Department of Chemistry, New College, Sarasota, Florida, May 14, 1997

(38) “Synthetic and Biological Studies on Novel β-Lactams,” Department of Chemistry, University of Florida, Gainesville, Florida, September 11, 1997

(39) “Studies of Non-Conventional Bicyclic β-Lactams,” Gulf Coast Chemistry Conference, Pensacola Beach, Florida, September 18-20, 1997

(40) “Synthetic and Biological Studies on Novel β-Lactams,” Department of Chemistry, Florida State University, Tallahassee, Florida, October 16, 1997

(41) “Studies on Novel Compounds for Treating Drug-Resistant Infections,” Department of Chemistry, Florida Southern University, Lakeland, Florida, October 22, 1997

(42) “New Agents for Overcoming Drug-Resistant Infections,” Department of Natural Sciences, University of North Florida, Jacksonville, Florida, March 26, 1999

(43) “Graduate School Opportunities in Chemistry at University of South Florida” Florida Southern College, Lakeland, Florida, April 16, 1999

(44) "Discovery of a New Class of β-Lactam Antibacterials for Drug-Resistant Infections," Florida Institute of Technology, Melbourne, Florida, November 4, 1999.

(45) "New Antibacterial Agents for Drug-Resistant Infections," Department of Natural Sciences, Daytona Beach Community College, Daytona Beach, Florida, November 16, 1999

(46) "New Antibacterial Agents for Drug-Resistant Infections," Department of Chemistry, American University, Washington, D.C., November 30, 1999

(47) "New Antibacterial Agents for Drug-Resistant Infections," Department of Chemistry, Towson University, Towson, Maryland, December 2, 1999

(48) "Mechanistically New β-Lactams for Drug-Resistant Bacterial Infections," Department of Chemistry, Wesleyan University, Middletown, Connecticut, April 6, 2001

(49) "Graduate Opportunities in Chemistry at University of South Florida," with Julie Harmon and

Bill Baker, Florida Southern College, Lakeland, Florida, January 29, 2002

(50) "N-Thiolated β-Lactams: Novel Antibacterial Agents for Drug-Resistant Infections," Ohio State University, Columbus, Ohio, February 14, 2002

(51) "N-Thiolated β-Lactams: Novel Antibacterial Agents for Drug-Resistant Infections," Ohio University, Athens, Ohio, February 15, 2002

(52) "New Antibiotics and Drug Delivery Vehicles for Drug-Resistant Infections," Florida Atlantic University, Boca Raton, Florida, March 26, 2004

(53) "Novel Polyacrylate Nanoparticles for Drug Delivery and Materials Research," Department of Chemistry, University of Florida, Gainesville, Florida, September 8, 2004

(54) "Emulsified Polymer Nanoparticles For Drug Delivery and Materials Research," National Cancer Institute, Nanoparticle Characterization Laboratory, Frederick Cancer Research Facility, Frederick, MD, September 20, 2005

(55) "Polyacrylate Nanoparticles: New Opportunities For Drug Delivery," Entremed, Inc., Gaithersburg, MD, January 6, 2006

(56) "Polyacrylate Nanoparticles: New Antibiotics for Drug-Resistant Bacterial Infections," Department of Chemistry, University of New Mexico, Albuquerque, New Mexico, September 22, 2006

(57) "Polyacrylate Nanoparticles: New Antibiotics for Drug-Resistant Bacterial Infections," Department of Chemistry, University of South Florida, Tampa, Florida, September 26, 2006

(58) "Florida Center of Excellence in Biomolecular Identification and Targeted Therapeutics and Center for Molecular Diversity in Drug Design, Discovery, and Delivery," Department of Chemistry, University of South Florida, December 5, 2006

(59) "Florida Center of Excellence in Biomolecular Identification and Targeted Therapeutics," Sigma Xi, College of Engineering, University of South Florida, January 19, 2007

(60) "Center for Molecular Diversity in Drug Design, Discovery, and Delivery," Board of Trustees Annual Meeting, University of South Florida, February 1, 2007

(61) "Nanobiotics: Novel Polyacrylate Nanoparticle Antibiotics," College of Pharmacy, University of North Carolina, September 27, 2007

(62) "Nanobiotics and their Application to Controlling Drug-Resistant Staph Infections," Department of Chemistry, University of Tampa, October 9, 2008

(63) "Antibacterials Research and Development at USF," Masters Program in Biotechnology Forum, Department of Molecular Medicine,, University of South Florida College of Medicine, November 12, 2009

(64) “Antibiotics and Nanobiotics for Pathogenic, Drug-Resistant Bacterial Infections,” Jack Spencer Symposium, Florida Southern College, September 10, 2010

(65) “Antibiotics and Nanobiotics for Drug-Resistant Bacterial Infections,” Department of Chemistry, University of South Alabama, Mobile, AL, March 25, 2011

(66) “Antibiotics and Nanobiotics for Drug-Resistant Bacterial Infections,” Masters Program in Biotechnology Forum, Department of Molecular Medicine,, University of South Florida College of Medicine, September 22, 2011

D. TALKS AT UNIVERSITIES AND COLLEGES OUTSIDE THE U.S.

(1) "New Organoiron Methodology," NSF-SERC Workshop on Organometallics in Organic Synthesis, Strathclyde University, Ross Priory, Scotland, August 2-7, 1992

(2) "New Allylation Methodology Using Organoiron Complexes," Departamento de Quimica Organica, Facultad de Quimica, Universidad de Santiago, Santiago de Compostela, Spain, January 11, 1994

(3) "New Allylation Methodology Using Organoiron Complexes," Departamento de Quimica Organica, Facultad de Quimica, Universidad Autonoma Canto Blanco, Madrid, Spain, January 13, 1994

(4) "New Allylation Methodology Using Organoiron Complexes," Departamento de Quimica Organica, Facultad de Farmacia Burjasot, Universidad de Valencia, Valencia, Spain, January 15, 1994

(5) "New Allylation Methodology Using Organoiron Complexes," Departamento de Quimica Organica, Facultad de Quimica, Universidad de Oviedo, Oviedo, Spain, January 18, 1994

(6) "Halocyclization Reactions of Unsaturated Sulfur Compounds," Departamento de Quimica Organica, Facultad de Quimica, Universidad de Oviedo, Oviedo, Spain, January 19, 1994

(7) "New Allylation Methodology Using Organoiron Complexes," Instituto Universitario de Bio-Organica, Universidad de La Laguna, Tenerife, Canary Islands, Spain, January 24, 1994

(8) "Halocyclization Reactions of Unsaturated Sulfur Compounds," Instituto Universitario de Bio-Organica, Universidad de La Laguna, Tenerife, Canary Islands, Spain, January 25, 1994

(9) "Synthetic Studies on Organosulfur Cyclizations: Applications to the Synthesis of Novel β-Lactams," Department of Chemistry, University of Guelph, Guelph, Ontario, Canada, May 23, 1996

(10) “Synthetic and Computational Studies on Novel β-Lactams,” Departamento de Quimica Organica,

Facultad de Quimica, Universidad de Oviedo, Oviedo, Spain, December 16, 1998

(11) "Current Research Topics," Departamento de Quimica Organica, Facultad de Quimica, Universidad de Oviedo, Oviedo, Spain, April 3, 2000

(12) "Allylations and [3+2]-Cycloadditions of Allyliron Complexes with Carbonyl Compounds and Imines," Departamento de Quimica Organica, Facultad de Quimica, Universidad de Oviedo, Oviedo, Spain, May 7, 2000

(13) "Synthesis and Thermal Rearrangements of Silylated Vinylcyclopropanes," Departamento de Quimica Organica, Facultad de Quimica, Universidad de Oviedo, Oviedo, Spain, May 14, 2000

(14) "N-Thiolated β-Lactam Antibacterials," Departamento de Quimica Organica, Facultad de Quimica, Universidad de Murcia, Murcia, Spain, October 7, 2000

(15) "N-Thiolated β-Lactam Antibacterials," Departamento de Quimica Organica, Facultad de Farmacia Burjasot, Universidad de Valencia, Valencia, Spain, October 8, 2000

(16) "N-Thiolated β-Lactam Antibacterials," Departamento de Quimica Organica, Facultad de Quimica, Universidad de Alicante, Alicante, Spain, October 9, 2000

(17) "Studies on Electrophile-Promoted Cyclizations of Unsaturated Sulfur Compounds," Departamento de Quimica Organica, Facultad de Quimica, Universidad de Oviedo, Oviedo, Spain, October 20, 2000

(18) "Studies on Mechanistically-Novel β-Lactam Antibacterials," Institut für Organische Chemie, Technische Universität Dresden, Dresden, Germany, October 25, 2000

(19) "Studies on Mechanistically-Novel β-Lactam Antibacterials," Institut für Organische Chemie, Universität Leipzig, Leipzig, Germany, October 27, 2000

(20) "Silyl-Accelerated Vinylcyclopropane Rearrangements," Institut für Organische und Makromolekukare Chemie, Friedrich-Schiller-Universität, Jena, Germany, October 30, 2000

(21) "Studies on Mechanistically-Novel β-Lactam Antibacterials," Hans-Knöll-Institut, Jena, Germany, November 1, 2000

(22) "Silyl-Accelerated Vinylcyclopropane Rearrangements," Institut für Chemie, Humboldt-Universität Berlin, Berlin, Germany, November 2, 2000

(23) "Studies on Mechanistically-Novel β-Lactam Antibacterials," Institut für Organische Chemie, Universtität München, München, Germany, November 6, 2000

(24) "Mechanistically-Novel β-Lactam Antibacterials," Departamento de Quimica Organica, Facultad de Quimica, Universidad de Oviedo, Oviedo, Spain, November 10, 2000

(25) "Mechanistically-Novel β-Lactam Antibacterials," Departamento de Quimica Organica, Facultad de Quimica, Universidad de Zaragoza, Zaragoza, Spain, November 20, 2000

(26) "Mechanistically-Novel β-Lactam Antibacterials," Departamento de Quimica Organica, Facultad de Quimica, Universidad de Vallodolid, Vallodolid, Spain, November 27, 2000

(27) "Mechanistically-Novel β-Lactam Antibacterials," Departamento de Quimica Organica, Facultad de Quimica, Universidad de Salamanca, Salamanca, Spain, November 28, 2000

(28) "Mechanistically-Novel β-Lactam Antibacterials," Departamento de Quimica Organica, Facultad de Quimica, Universidad Autonoma Canto Blanco, Madrid, Spain, November 30, 2000

(29) "Mechanistically-Novel β-Lactam Antibacterials," Departamento de Quimica Organica, Facultad de Quimica, Universidad Complutense, Madrid, Spain, December 1, 2000

(30) "New Antibiotics for Drug-Resistant Infections," Department of Chemistry, St. Francis Xavier University, Nova Scotia, February 7, 2002

(31) "Graduate School Opportunities at University of South Florida," Department of Chemistry, St. Francis Xavier University, Nova Scotia, February 7, 2002

(32) "New Antibiotics for Drug-Resistant Infections," Department of Chemistry, St. Mary's University, Halifax, Nova Scotia, February 8, 2002

(33) "Graduate School Opportunities at University of South Florida," Department of Chemistry, St. Mary's University, Halifax, Nova Scotia, February 8, 2002

(34) "Novel Antibiotics for Treatment of Drug-Resistant Staph Infections and Anthrax, " Facultad de Quimica, Universidad de Oviedo, Oviedo, Spain, March 4, 2004

(35) "New Nanoscale Polymers for Drug Delivery and Materials Research, " Facultad de Quimica, Universidad de Oviedo, Oviedo, Spain, March 9, 2004

(36) "Nanobiotics for Treatment of MRSA and Anthrax Infections," Facultad de Quimica, Universidad de Oviedo, Oviedo, Spain, March 8, 2006

(37) “Glyconanobiotics: Novel Glycosylated Polyacrylate Nanoparticles for MRSA Infections,” Facultad de Quimica, Universidad de Oviedo, Oviedo, Spain, March 6, 2007

(38) "Nanobiotics: Novel Polyacrylated Nanoparticle Antibiotics for MRSA Infections," Principe Felipe Centro de Investigacion, Universidad de Valencia, Valencia, Spain, May 4, 2007

(39) "Polyacrylate Nanoparticle Antibiotics," Symposium on the Latest Trends in Organic Synthesis, Brock University, St. Catherines, Ontario, Canada, August 13-16, 2008

Students Who Have Worked in the Turos Laboratory
(1989-2012)

Doctoral Students

Gregory Agoston	Ph.D. from SUNY Buffalo, 1995 Thesis title: "The Development and Application of Allylic Cyclopentadienyliron(II) Dicarbonyl Complexes for Use in Organic Synthesis"
Xiaofeng Ren	Ph.D., SUNY Buffalo, 1995 Thesis title: "Regiochemical and Stereochemical Studies on Halocyclization Reactions of Unsaturated Sulfides and Episulfides-Design and Synthesis of Novel β-Lactams"
Songchun Jiang	Ph.D., SUNY Buffalo, 1995 Thesis title: "New Methodology for the Synthesis of Tetrahydrofurans and 1,3-Polyols using Allyl(cyclopentadienyl)iron(II) Dicarbonyl Complexes"
Khalid Hassan	Ph.D. student, SUNY Buffalo, 1995-1996 (remained at SUNY Buffalo)
Uzma Hassam	Ph.D. student, SUNY Buffalo, 1995-1996 (remained at SUNY Buffalo)
Monika Konaklieva	Ph.D., SUNY Buffalo, 1997 Thesis title: "Studies on Halogenation-Induced Ring Closures of Unsaturated Episulfides and Applications to the Design, Synthesis, and Biological Evaluation of Novel β-Lactams"
Edward Carpenter	Ph.D. student, USF, 1999-2001 (dropped from program)
Tim Long	Ph.D., USF, 2003 Thesis title: "N-Thiolated β-Lactams: Chemistry and Biology of a Novel Class of Antimicrobial Agents for MRSA"
Jeung-Yeop Shim	Ph.D., USF, 2003 Thesis title: "Antibacterial Activities of N-Thiolated β-Lactams and Their Polymeric Nanoparticles against MRSA"
Christina Coates	Ph.D., USF, 2004 Thesis title: "Synthesis and Structure-Activity Studies of *N*-Thiolated β -Lactam Antibacterials: Synthesis of Novel Oxazolidinone-β-Lactam Hybrids and the Efforts Toward the Formal Total Synthesis of (+)- and (-)-Cytoxazone and (+)-

	and (-)-epi-Cytoxazone"
Bart Heldreth	Ph.D., USF, 2004
	Thesis title: "*N*-Thiolated β-Lactams: Chemistry, SAR, and Intracellular Target of a Novel Class of Antimicrobial and Anticancer Agents"
Helen Wang	Ph.D., USF, 2006
	Thesis title: Antibiotic-Conjugated Polyacrylate Nanoparticles: New Opportunities for Development of Anti-MRSA Agents"
Kevin Revell	Ph.D., USF, 2006
	Thesis title: "Mode of Action and Structure-Activity Studies of N-Alkylthio β-Lactams and N-Alkylthio-2-oxazolidiniones, and Synthesis of Second-Generation Disulfide Inhibitors of α-Ketoacyl-Acyl Carrier Protein Synthase III (FabH) as Potent Antibacterial Agents"
Michelle Leslie	Ph.D., USF, 2006
	Thesis title: "Studies on the Synthesis and Characterization of Functionalized Poly(caprolactone) Oligomers for Antibiotics Delivery"
Sampath Abeylath	Ph.D., USF, 2007
	Thesis Title: "Glyconanobiotics: Novel Carbohydrated Nanoparticle Polymers"
Kerriann Greenhalgh	Ph.D., USF, 2008
	Thesis Title: "Studies of Polyacrylate Nanoparticle Emulsions for Treatment of Skin and Systemic MRSA Infections"
Young Jung	Ph.D., USF, 2008
	Thesis Title: Total Syntheses of (-)-α-Kainic Acid and (+)-α-Allokainic Acid via Stereoselective C-H Insertion and Efficient 3,4-Stereocontrol"
Julio Garay	Ph.D., USF, 2008
	Thesis Title: "N-Thiolated β-Lactams: Influence of the Lipophilic C_3 Side Chain Character on Antibacterial and Anticancer Activity and Studies on Detoxifying Polyacrylated Nanoparticles for Delivering Antibiotics"
Praveen Ramaraju	Ph.D., USF, 2011
	Thesis Title: "Synthesis and Antimicrobial Activities of S,S'-Heterosubstituted Disulfides"
Ryan Cormier	Ph.D., USF, 2012
	Thesis Title: "N-Acyl Ciprofloxacins: Synthesis, Antibacterial Activity, and Effects on Molecular Loading of Poly(Vinyl Benzoate) Nanoparticles"

Biplob Bhattacharya	Ph.D., USF, 2012 Thesis Title: "Synthesis and Anti-MRSA Activity of Hydrophilic C_3-Acylated N-Thiolated β-Lactams and N-Acyl Ciprofloxacin-N-Thiolated β-Lactam Hybrids"
Faaez Mahzamani	Ph.D. candidate

Masters Students

Ti Chen	M.S., SUNY Buffalo, 1994 Thesis title: "Allylation and [3+2]-Cycloaddition Reactions of Allyl(cyclopentadienyl)iron(II) Dicarbonyl Complexes with Acetals and Imines"
Bing Wang	M.A., USF, 1997 Thesis title: "A Review of Nicotine and its Effects on Biological Systems"
Yi-Lun Lin	M.S., SUNY Buffalo, 1999 Thesis title: "Studies of the Thermal 1,5-Hydrogen Rearrangement in 1-Silylmethyl-2-vinylcyclopropanes"
Shimin Xu	M.S., USF, 2001 Thesis title: "Studies on the Design and Synthesis of Thiosugars"
Jasmine Kabir	M.A., USF, 2003 Thesis title: "Synthesis of β-Lactams"
Iris Meng	M.A., USF, 2004 Thesis title:"Thio-Transfer Reactions in Organic Chemistry"
Marci Culbreath	M.S., USF, 2006 Thesis title: "Antifungal Activities of N-Thiolated β-Lactams"

Undergraduate Research Students

Donald Shufran	(Summer 1989)
Christopher Beney	(Summer, Fall 1989)
Charlotte Frank	(Summer, Fall 1989)
Janusz Jaszczuk	(Fall 1989, Spring, Summer, Fall 1991)
Kevin McCue	(Summer, Fall 1990)
Kenneth Boy	(Fall 1990)
Anja Koczinski	(Spring 1991)

Monica Konaklieva	(Fall 1991, Spring, Summer 1992)
Walter Mei	(Spring 1992)
Mohamud Nur	(Summer 1992)
Michele L. Dahl	(Summer 1992)
Renee Lawyer	(Fall 1992, Spring 1993)
Richard Spring	(Fall 1992)
Mark Izraelewicz	(Fall 1993, Spring, Summer, Fall 1994)
Matthew Guenther	(Spring 1994, Spring, Summer, Fall 1995)
JienFeng Tien	(Fall 1994)
Daniel Kimball	(Spring, Summer, Fall 1995)
Valerie Whalen	(Spring 1997)
Jason Aragona	(Spring 1997)
Matthew Eyles	(Spring 1997)
Denise Ziegler	(Spring 1997)
Melissa Foster	(Spring 1997)
David Eshelbrenner	(Spring 1997)
Joshua Kidd	(Spring 1997)
Alexander Paloma (Honors)	(Spring, Summer, Fall 1997, Spring 1998)
Theresa Carpenter	(Fall 1997)
Andrew Rutherford	(Fall 1997, Spring, Summer, Fall 1998)
Jennifer Darcy	(Spring, Summer 1998)
Jonathon Ennis	(Spring, Summer 1998)
Ed Wilson (Honors)	(Spring, Summer, Fall 1998, Spring, Summer 1999)
Jennifer Ascher (Honors)	(Spring, Summer, Fall 1998, Spring 1999)
Martin Paczkowski	(Spring, Summer, Fall 1998, Spring, Fall 1999, Spring 2000)
Michael Tan	(Spring, Summer, Fall 1998, Spring, Fall 1999)
Cristina Coates	(Summer 1998 from Florida Southern College)
Jessica Citti	(Summer, Fall 1998)
Matthew Burkhardt	(Fall 1998)
Jonathon Cohen	(Fall 1998)
Daniel Maze	(Fall 1998)
Estela Uy	(Fall 1998)
Alekhya Yalamanchili	(Fall 1998)

Timothy Long	(Fall 1998, Spring, Summer 1999)
Natalie Maddox	(Spring 1999)
Kunal Shah	(Spring 1999)
Richard Moore	(Spring 1999)
Nanette Melachrinoudis	(Spring, Fall 1999)
Anthony Sutter	(Spring, Summer, Fall 1999, Spring 2000)
Shannon Condon	(Spring, Summer, Fall 1999, Spring, Summer, Fall 2000, Spring 2001)
Adrienne Lawton (Honors)	(Summer 1999)
Sharon Bassi	(Summer 1999)
Kathryn Young	(Summer, Fall 1999)
Heather Aycock	(Summer 1999)
Jennifer Perez	(Fall 1999)
William Veguilla	(Fall 1999)
Brenda Yantzer	(Spring 2001)
Jaenea Polk	(Fall 2001, Spring 2002)
Arturo Torres	(Fall 2001, Spring 2002)
Jeni Bowers	(Spring, Fall 2002)
Alex Ortiz	(Spring, Summer, Fall 2002)
James Wright	(Spring, Summer 2002)
Marci Culbreath (Honors)	(Summer, Fall 2002, Spring 2003)
Alan Jacobs	(Summer 2002)
Joyce Rodriguez	(Spring 2003)
Pamela Marble	(Fall 2002, Spring 2003)
Kerriann Greenhalgh (Honors)	(Summer, Fall 2003, Spring 2004)
Casey Cosner (Honors)	(Fall 2003, Spring, Fall 2004, Spring, Fall 2005, Spring 2006)
Setu Patel	(Spring 2004)
Ryan Cormier	(Fall 2004, Spring, Summer, Fall 2005, Spring 2006)
Erin Brady	(Fall 2004)
Casey Gooden (Honors)	(Spring, Fall 2005, Spring 2006)
Jena Koshaish	(Spring, Fall 2005, Spring 2006)
Heather Latham	(Summer 2005)
Jenny Edwards	(Summer, Fall 2005)

Kerlie Estimable	(Fall 2005)
Matt Davison	(Spring 2006)
Nicole Abong	(Summer 2006)
Faaez Mahzamani	(Summer, Fall 2006, Spring 2007)
Zsuzsanna Tamas	(Fall 2006)
Yusuf Elminshawy	(Fall 2006)
Ricky Stull	(Spring 2007)
Reem Akel	(Spring 2007)
Danielle Gergeres	(Spring, Summer, Fall 2007, Spring 2008)
Manny Frank	(Summer, Fall 2007, Spring 2008)
Michelle Ringwald	(Fall 2007)
Jason Gause	(Fall 2007, Spring 2008)
Jordan Markel (Honors)	(Fall 2007, Spring, Fall 2008)
Gautami Gandham	(Fall 2007, Spring 2008)
Hollie Gaeto (Honors)	(Spring, Fall 2008)
Cynthia Lichorowic (Honors)	(Spring, Fall 2008)
JoAnn Tran (Honors)	(Fall 2008)
Ayesha Farooq (Honors)	(Fall 2008)
Jennifer Pequero (Honors)	(Fall 2008)
Neiman Principio	(Fall 2008)
Kornwalee Wiangkham	(Spring 2010)
Angel Wright	(Spring 2010)
Silvia Robles	(Spring, Fall 2010)
Molly McGetrick	(Summer 2010)
Erin Wasilewski	(Summer, Fall 2010)
Nicholas Cramer	(Summer, Fall 2010, Spring 2011)
Jordan Edlinger	(Summer, Fall 2010, Spring 2011)
Jacob Pierce	(Summer, Fall 2010, Spring, Fall 2011, Spring 2012)
Mandi Leming	(Summer, Fall 2010, Spring, Fall 2011, Spring 2012)
Monique Konstantinovic (Honors)	(Fall 2010, Spring, Fall 2011, Spring 2012)
Evan O’Sullivan	(Spring 2011)
Shannon Collins	(Spring 2011)
Rehana Murani	(Spring, Fall 2011, Spring 2012)

Patrick Thorn	(Spring, Fall 2011)
Jennifer Borja	(Spring, Summer, Fall 2011)
Amie Gerodimos	(Fall 2011)
Amy Engle	(Fall 2011)
Jennifer Borja	(Fall 2011)
Luke Gill	(Fall 2011, Spring 2012)
Julio Espinosa	(Fall 2011, Spring, Summer, Fall 2012)
Bradford Montane (Honors)	(Spring, Summer, Fall 2012)
Nicole McCant	(Spring, Summer, Fall 2012)
Rachel Stein	(Spring, Summer 2012)
Lamar Wedderburn	(Spring, Summer, Fall 2012)
Stacia Gorniak	(Spring, Summer, Fall 2012)
Julie Vuu	(Spring, Fall 2012)
Diana Padilla	(Summer 2012)
Charlotte Wilkinson	(Fall 2012)
Olivia Armentano	(Fall 2012)

Postdoctorals and Scholars

Dr. Maria Cabal Naves (postdoctoral, 1990)
Cynthia Brooks (high school student, SUNY Buffalo, Summer 1990)
Alicia Regueiro (visiting Ph.D. student, Tenerife, Canary Islands, Spain, 1993)
Rosario Gonzalez (visiting Ph.D. student, Oviedo, Spain, 1993)
Hugo Fanlo Virgos (visiting Ph.D. student, Oviedo, Spain, 1995)
Hongchang Shi (visiting professor, Beijing, China, 1995-1996)
Jesus Gil (visiting Ph.D. student, Valencia, Spain, 2002)
Dr. Hyoung Jun (visiting professor, Seoul, South Korea, 2003-2004)
Amit Patel (high school student, USF, Summer 2004)
Dr. Suresh Kumar Reddy (postdoctoral, 2004-2006)
Dr. Rajesh Mishra (postdoctoral, 2004-2006)
Dr. Ivan Perez Sanchez (visiting Ph.D. student, Oviedo, Spain, 2002, postdoctoral, 2005-2007)
Dr. Seyoung Jang (postdoctoral, 2005-2006)

Dr. Tyler Schertz (postdoctoral, 2005-2006)

Dr. Il-Ryon Jeon (visiting professor, Kyungil, Korea, 2006)

Dr. Aliasghar Jarrahpour (visiting professor, Shiraz, Iran, 2007-2008)

Dr. Raphael Labruere (postdoctoral, 2007-2009)

Dr. Sampath Abeylath (postdoctoral, 2007-2010)

Dr. Renaud Sicard (postdoctoral, 2008-2009)

Research Advisor for the Ronald E. McNair Minority Program (USF)

Alexander Paloma	(Department of Biology, Summer, Spring 1998)
Arturo Torres	(Department of Biology, Fall 2001, Spring 2002)

Role Model Mentor for the Ronald E. McNair Minority Program (USF)

Alexander Paloma	(Department of Biology, Spring 1997)
Gil Brito	(Department of English, Spring 1999)
Arturo Torres	(Department of Biology, Summer 2001)
Luis Rodriguez-Nieves	(Department of Biology, Spring 2003)

Courses and Committees

A. COURSES TAUGHT

At SUNY Buffalo

Chemistry 201 *Organic Chemistry* (Fall 1992, Summer 1993, Fall 1995) The first part of a two semester sequence of courses covering the principles of organic chemistry presented in terms of a "functional group" approach.

Chemistry 251-252 *Contemporary Organic Chemistry* (Spring 1993, Fall 1993, Fall 1994) A two-semester sequence of courses covering the principles of organic chemistry presented in terms of a mechanistic "functional group" approach. A somewhat more intensive version of Chemistry 201-202 intended primarily for Chemistry and Chemistry-related majors.

Chemistry 455/502 *Synthetic Organic Chemistry* (Spring 1995, Spring 1996) An advanced undergraduate/graduate course covering strategies and modern methods of organic synthesis. The focus is on understanding the reactivity patterns of reactive intermediates (carbocations, carbanions, radicals, carbenes, concerted reactions) in the context of total synthesis of selected natural products.

Chemistry 501 *Organic Chemistry for Graduate Students* (Fall 1989, Fall 1990, Fall 1991) This core course is designed to introduce the graduate student to concepts and theory of modern organic chemistry. Reaction mechanisms and kinetics served as a focal point of the lectures.

Chemistry 514B *Spectroscopic Analysis of Organic Compounds* (Spring 1990, Spring 1991, Spring 1992) Theory and application of modern spectroscopic techniques for the elucidation of molecular structure. Practical aspects and recent advances in mass spectrometry, ultraviolet and infrared spectroscopy, and nuclear magnetic resonance spectroscopy.

At USF

Chemistry 2210/3210 *Organic Chemistry I* (Spring 1997, Spring 1998, Fall 1998, Fall 2001, Fall 2003, 2005-9) This is the first part of a two-semester course covering the principles of organic chemistry presented in terms of a "functional group" approach, including reaction mechanisms.

Chemistry 2211 *Organic Chemistry II* (Summer 1998, Spring 1999, Summer 2001, Spring 2003, Spring 2010, Fall 2010, Fall 2011) This is the second part of a two-semester course covering the

fundamental principles of organic chemistry.

Chemistry 4300/6938 *Biomolecules* (Spring 2001, Fall 2010, Spring 2011, Spring 2012) An advanced course focusing on the chemistry of biologically active molecules, such as antibacterial, antiviral, and anticancer drugs, proteins, and carbohydrates.

Chemistry 4938 *Antibiotics* (Spring 1999) An advanced undergraduate course focusing on the chemistry and biochemistry of commonly used antibacterial and antiviral drugs.

Chemistry 5225/6938 *Organic Chemistry for Graduate Students* (Fall 1996, Fall 1999, Spring 2006-8) This core course is designed to introduce the graduate student to concepts and theory of modern organic chemistry and mechanistic organic chemistry, including reaction kinetics, thermodynamics, catalysis, stereochemistry, and reaction classifications.

Chemistry 5226/6938 *Intermediate Organic Chemistry for Graduate Students* (Spring semesters of 2005-2008) The second part of the CHM 5225/5226 sequence designed to introduce the graduate student to concepts and theory of advanced topics in organic synthesis

Chemistry 6938 *Advanced Organic Synthesis* (1997-2009) An upper-level special topics course for graduate students that focuses on strategies for synthesizing complex organic molecules. In this course, discussion centers around the total syntheses of several dozen different natural products that have been reported in the literature.

Chemistry 6938 *Organic Colloquia* (Fall 1999, Fall 2001, Spring semesters of 2002-2006) A weekly meeting of all organic chemistry graduate students and faculty to discuss current research projects within the Department of Chemistry.

Chemistry 6938 *Colloquium in Drug Discovery* (Spring semesters of 2007-9) A weekly seminar on current research projects within the Department of Chemistry and USF in the area of drug discovery.

Chemistry 6938 *Spectroscopic Analysis of Organic Compounds* (Fall 1998, Fall 2002, Fall 2004) Theory and application of modern spectroscopic techniques for the elucidation of molecular

structure. Practical aspects and recent advances in mass spectrometry, ultraviolet and infrared spectroscopy, and nuclear magnetic resonance spectroscopy.

Chemistry 6938 *Drug Discovery in the 21st Century* (Fall 2011) A weekly seminar on modern methods of drug discovery, with student presenters from selected topics.

Chemistry 6938 *Drug Discovery in Tropical Diseases* (Spring 2012) A weekly seminar on modern methods of drug discovery, with student presenters from selected topics (cross listed with Public Health, co-taught with Dr. Dennis Kyle).

B. COMMITTEES AND DUTIES

University Service

At USF

College of Arts and Sciences Faculty Development Committee (1998, 1999)
Provost's Building Program Committee for Natural and Environmental Science (1998)
Provost's Teaching Assistant Award Selection Committee (1999)
College of Arts and Sciences Ad Hoc Safety Committee (1999)
Co-PI and Member of Executive Committee, Florida Center of Excellence in Biomolecular Identification and Targeted Therapeutics (Fall 2006-2009)
College of Arts and Sciences Sabbatical Leave Committee (2009-Present)
College of Arts and Sciences Tenure and Promotion Committee (2011)

Department Service

At SUNY Buffalo

Faculty Development Program (1989)
Organizer of the Chemistry Department Open House (1989)
Graduate Student Recruitment Committee (1989-1993)
Faculty Advisor to the Student Affiliates of the American Chemical Society (1990-1994)
Chemical Safety Committee (1990-1995)
Major Instrumentation Committee (1991-1996)
Sub-Committee on Instrument Center (1991-1996)
Undergraduate Curriculum Committee (1991-1996)
Undergraduate Affairs Committee (1991-1996)

At USF

Member, Organic Chemistry Division (1996-Present)

Chair of the Organic Chemistry Division (1998-2007)

Chair of the Graduate Student Recruitment Committee (1997, 1998, 1999, 2009-10)

Advisory Committee (1998, 1999, 2003 as Chair)

Graduate Council (1999, 2011 (Chair))

Chair of Undergraduate Council (2001, 2002)

Chemistry/Moffitt Drug Discovery Faculty Search Committee (1998, 1999)

Polymer Search Committee which hired Dr. Kirpal Bisht (1998)

NMR Subcommittee (1996-1998, 2002-Present)

Instrumentation Committee (1996-1998)

GC/MS Instrument Selection Committee (1999)

Faculty Mentor for the Ronald E. McNair Program (1997, 1999, 2001)

Faculty Research Advisor for the Ronald E. McNair Program (1997, 2001, 2002)

Faculty Advisor to the Students Affiliates of the American Chemical Society (1998, 1999)

Research Advisor to students in the University Honors Program (1997, 1999, 2002-Present)

Hiring Committee which hired Dr. Mohamed Eddaoudi (2002)

Director, Center for Molecular Diversity in Drug Design, Discovery, and Delivery (Fall 2006-Present)

Associate Chair of Chemistry (2006-7)

Co-Director of Graduate Studies (2011)

C. GRADUATE THESIS COMMITTEES

Students in My Research Group

Gregory Agoston	(Ph.D. 1995, SUNY Buffalo)
Songchun Jiang	(Ph.D. 1995, SUNY Buffalo)
Xiaofeng Ren	(Ph.D. 1995, SUNY Buffalo)
Monika Konaklieva	(Ph.D. 1997, SUNY Buffalo)
Ti Chen	(M.A. 1994, SUNY Buffalo)
Uzma Riaz	(Ph.D. candidate, SUNY Buffalo)
Khalid Ahsan	(Ph.D. candidate, SUNY Buffalo)
Yi-Lun Lin	(M.S. 1999, SUNY Buffalo)
Boris Wang	(M.A. 1998, USF)
Shimin Xu	(M.S. 2001, USF)

Ed Carpenter	(M.S. student, 1998-2001, USF)
Tim Long	(Ph.D. 2003, USF)
Jeung-Yeop Shim	(Ph.D. 2003, USF)
Cristina Coates	(Ph.D. 2004, USF)
Bart Heldreth	(Ph.D. 2004, USF)
Young Jung	(Ph.D. 2006, USF)
Michelle Leslie	(Ph.D., 2006, USF)
Yang Wang	(Ph.D., 2006, USF)
Kevin Revell	(Ph.D., 2006, USF)
Sampath Abeylath	(Ph.D., 2007, USF)
Julio Garay Jimenez	(Ph.D., 2008, USF)
Jasmine Kabir	(M.A., 2003, USF)
Zhaohong (Iris) Meng	(M.A., 2004 USF)
Marci Culbreath	(M.S., 2007, USF)
Praveen Ramaraju	(Ph.D., 2011, USF)
Ryan Cormier	(Ph.D. student, USF)
Faeez Mahzamani	(Ph.D. student, USF)
Biplob Bhattacharya	(Ph.D. student, USF)

Students in Other Research Groups

Deanne Nowak	(Ph.D. 1992, SUNY Buffalo)
Stephanie Gumina	(M.S. 1993, SUNY Buffalo)
Allen Salerno	(Ph.D. 1993, SUNY Buffalo)
Scott Pluskey	(Ph.D. 1993, SUNY Buffalo)
James LaClair	(Ph.D. 1993, SUNY Buffalo)
Pingzhong Tan	(Ph.D. Medicinal Chemistry 1993, SUNY Buffalo)
Run Wang	(Ph.D. 1994, SUNY Buffalo)
Young Kwon	(Ph.D. 1994, SUNY Buffalo)
Jeyong Yoon	(Ph.D. Civil Engineering 1994, SUNY Buffalo)
Tao Jiang	(Ph.D. 1995, SUNY Buffalo)
Shahid Amin	(Ph.D. 1995, SUNY Buffalo)
James Stry	(Ph.D. 1995, SUNY Buffalo)
Luyun Huang	(Ph.D. 1995, SUNY Buffalo)

Barbara Stainbrook	(M.S. 1995, SUNY Buffalo)
Richard Dunbar	(Ph.D. 1996, SUNY Buffalo)
Mitchell Refvik	(Ph.D., 1996, University of Guelph, Canada)
Mary Koszelak	(Ph.D. 1996, SUNY Buffalo)
Kevin McCue	(Ph.D. 1996, SUNY Buffalo)
Daniel Rosenblum	(Ph.D. 1996, SUNY Buffalo)
Jinkui Niu	(Ph.D. 1996, SUNY Buffalo)
Michael Cieslak	(Ph.D. candidate, SUNY Buffalo)
Michael Levett	(Ph.D. candidate, SUNY Buffalo)
Jason Wood	(Ph.D. candidate, SUNY Buffalo)
Lawrence Toomey	(Ph.D. candidate, SUNY Buffalo)
Xiongwei Yan	(Ph.D. candidate, SUNY Buffalo)
Matthew Foti	(Ph.D. 1998, USF)
Jay Parrish	(Ph.D. 2001, USF)
Ralph Salvatore	(Ph.D. 2001, USF)
Krista Noren-Santmyer	(M.A. 2002, USF)
Barry Woosley	(M.S. 2002, USF)
Joyce Shade	(M.S. 2002, USF)
Ken Heffner	(Ph.D. 2003, USF)
Craig Bowe	(Ph.D. 2003, USF)
Advait Nagle	(Ph.D. 2003, USF)
Leslie Morales	(M.S. 2003, USF)
Joanna Bis	(M.S. 2004, USF)
Tanise Shattock	(M.S. 2004, USF)
Chiloe Chen	(M.S. 2004, USF)
David Flanigan	(Ph.D. 2004, USF)
Eric Dueno	(Ph.D. candidate, USF)
Jason Carr	(Ph.D. 2004, USF)
Cynthia Hahm	(M.S. 2004, USF)
Hla Win	(Ph.D. candidate)
Heba Abourahma	(Ph.D. 2004, USF)
Young Chul Park	(Ph.D. 2004, USF)
Stephanie Weiss	(Ph.D. 2007 USF)

Jaime Noguez	(Ph.D. 2010, USF)
Matt Lebar	(Ph.D. 2010, USF)
Alan Maschek	(Ph.D. 2011, USF)
Matt Cross	(Ph.D. 2011, USF)
Halie Miller	(Biology Ph.D. candidate)
Katie Prosen	(Biology M.S. 2010, USF)

D. SERVICE OUTSIDE OF UNIVERSITY

International Editorial Board of *Heterocyclic Communications*

Organizer of the Annual Florida Organic Chemistry Faculty Conference (1998, 1999, 2000, 2002)

Faculty Organizer for the Raymond N. Castle Student Research Conference (April 2001, April 2002)

Reviewer for the following international journals:

Journal of the American Chemical Society

Tetrahedron Letters

Tetrahedron

Journal of Organic Chemistry

Organometallics

Journal of Organometallic Chemistry

Chemical Reviews

Journal of Chemical Education

Journal of Heterocyclic Chemistry

European Journal of Organic Chemistry

Archiv der Pharmazie

Bioorganic and Medicinal Chemistry

Grant reviewer for the following granting agencies:

National Institutes of Health

National Science Foundation

Petroleum Research Fund

NSERC

Reviewer of the following textbooks:

"Organic Chemistry" by David Baker and Robert Engel, West Publishers (1990)

"Organic Chemistry" by Maitlin Jones, Norton Publishers (1998)

"Organic Chemistry Study Guide/Solutions Manual" by Maitlin Jones and Henry Gingrich, Norton Publishers (1998)

"Organic Chemistry" by Janice Gorzynski Smith, McGraw-Hill Publishers (2003)