Michael T. Huggins
Associate Professor & Department Chair

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Education

Postdoctoral; **University of Texas at Austin,** 2000-2002
Ph. D. in Chemistry; **University of Nevada, Reno,** 2000
B. S. in Chemistry; **University of West Florida,** 1996
A. A.; **Chipola Junior College**, 1994

Positions Held

University of West Florida
Associate Professor in Chemistry - 2007 - present
Chair, Department of Chemistry - 2005 - present
Assistant Professor in Chemistry - 2002-2007
Pensacola Section of the American Chemical Society
Section Chair - 2008, 2009
University of West Florida Working Group in Biological Chemistry
Program Director (2004-2006)
University of Texas at Austin
Visiting Lecturer - 2001-2002

Awards and Fellowships

College of Arts and Sciences Distinguished Teaching Award, 2004
Department of Chemistry Research Assistant of the Year, 2000
R. C. Fuson Graduate Fellow, 1998-2000
Department of Chemistry Teaching Assistant of the Year, 1998
Monsanto Award in Chemistry, 1996
Outstanding Student Award in Chemistry, 1996
NSF Research Experience for Undergraduates, 1995
Undergraduate Award for Achievement in Organic Chemistry, 1995
John C. Pace Transfer Scholarship, 1995-1996

Grants/Contracts

External Competitive Grants Awarded

- Co-PI (three total PI's) 2010 Florida Department of Education, Teacher Quality Grants Program; Total Award: $344,491. (Phase II)
- Co-PI (six total PI's) 2009 Florida Department of Education, Teacher Quality Grants Program; Total Award: $344,491. (Phase I)
- Co-PI (six total PI's); 2009 Merck/AAAS Undergraduate Science Research Program; Duration: 2009-2013 (4 yrs); Total Project Direct Costs: $120,000 including $60,000 University matching commitment.

- Co-PI; American Chemical Society's Project SEED, Duration Summer 2007; Total Award: $4,250.
- Sole PI; American Chemical Society's Petroleum Research Fund Type G Starter Grant; Duration 2006-2008 (2 yrs); Total Project Direct Costs: $35,000.
- Co-PI (six total PI's); 2004 Merck/AAAS Undergraduate Science Research Program; Duration: 2004-2010 (6 yrs); Total Project Direct Costs: $120,000 including $60,000 University matching commitment.

External, Non-competitive Contracts Awarded
- Pall Corporation, Synthesis of Norbornene Derivatives, $6,800, 2010.
- Plasmine Technology, Synthesis of Novel Rosin Amides, $8,088, 2009.
- Pall Corporation, NMR & GC-MS Measurements, $6,000+, 2005-current
- Pegusus Labs, Headspace Analysis by GC-MS, $700, Summer 2008
- Applied Research Associates, NMR Measurements, $500, 2007 summer.

Internal Competitive Grants Awarded (direct costs only)
- University of West Florida Undergraduate Research Grant, $1,169, *2007.*
- University of West Florida Summer Research Award; $6,500; *2003, 2004*.
- University of West Florida Faculty Scholarly and Creative Activities Award; $2000 each; *2003, 2004, 2005, 2010.*
- University of West Florida, College of Arts and Sciences Summer Research Award; $7,500, *2002*.

Mentor to Undergraduate Researchers

University of West Florida - 40+ students resulting in several publications and poster presentations; mentor to one Project SEED High School Student (Year I & II) resulting in one publication.

University of Texas at Austin - One student resulting in one publication and one poster presentation

University of Nevada, Reno - Four students in NSF-REU program resulting in one publication

Major Research Interests
- Study of weak interactions (hydrogen bonding, π-π stacking, etc) in small molecule model systems in solution and the solid state as a method to control molecular recognition events.
- Preparation and study of oligopyrrole-based anion receptors for use as chemosensors.
- Synthesis of pyridine N-oxides for the study of weak hydrogen bonds involving C-H groups
- Synthesis and characterization of dipyrrinone analogs for studies in weak hydrogen bonding and coordination chemistry

Courses Taught at UWF

CHM 2210 - Organic Chemistry I
CHM 2210L - Organic Chemistry I Laboratory
CHM 2211 - Organic Chemistry II
CHM 2211L - Organic Chemistry II Laboratory
CHM 4220 - Organic Chemistry IV
CHM 3740L - Experimental Chemistry I
CHM 3230 - Organic Chemistry III
CHM 3905/4905 - Directed Study
CHM 4912 - Chemistry Undergraduate Research Chemistry
CHM 4930 - Seminar: Special Topics in Advanced Chemistry
CHM 1032L - Fundamentals of General Chemistry Laboratory
IDH 4038 - Honors Seminar: Science and Technology in the 21st Century

Professional Societies

Council on Undergraduate Research
Society of Porphyrins and Phthalocyanines
American Chemical Society
- Organic & Chemical Education Divisions
- Pensacola Section Younger Chemists Committee, Chair
- Pensacola Section Executive Committee, (2006, 2007 ChemLuminary Award for Outstanding Performance of Local Section, Small Size
- Student Affiliates- UWF (1994-1996), President, 1995-1996
- Student Affiliates, Faculty Mentor (2005-present) (2007 Honorable Mention Award)

Organizing Committee for 10th International Conference on Circular Dichroism
- Secretariat and Webmaster

University of West Florida Working Group in Biological Chemistry

Patents -

1. Nitzman, A.; Huggins, M.; Reeves, J.; Royappa, A. "Imidized and Amidized Rosin Compositions for Paper Sizes and other Applications", Plasmine Technology, Inc, patent filed in US May, 2010.

Publications -

Books, Book Chapters or Invited Review Articles

1. Huggins, Michael T and Boiadjiev, Stefan, E "Molecular Recognition with Dipyrrinones", *Encyclopedia of Supramolecular Chemistry*, **2010**, posted online April 6, 2010, awaiting printing of actual book. *(INVITED; PEER REVIEWED)*
2. Huggins, M. T.; Lightner, D. A.; Gurst, J. E. *Organic Spectroscopy Workbook*; Prentice-Hall.: Upper Saddle River, NJ, **2011**, *in press*.

Peer Reviewed Journal Articles [Undergraduates Underlined & Project SEED (high school) student all caps]

1. Huggins, Michael T,; Lightner "Dipyrrinones as a Receptor for Carboxylic Acids" *Supramolecular Chemistry*, 2010, *accepted*.
2. "Development of Pyrrole Sulfonamides as Potential Molecular Receptors", Michael T. Huggins, Tyler Butler, Patrick Barber, *and* Jacob Hunt *Chem. Commun.*, **2009**, 5254-5256.
3. "A Short, Efficient Syntheses of Pyrrole α-Amides", Huggins, Michael T.; Barber, Patrick; FLORIAN, DAVID; and Howton, William *Synthetic Communications*, **2008**, *38*, 4226-4239.
4. "Molecular Recognition Studies with a Simple Dipyrrinone" Michael T. Huggins, Chris Musto, Lyndsay Munro, and Vincent J. Catalano, *Tetrahedron*, **2007**, 63(*52)*, 12994-12999.
5. "Nuclear Overhauser Effect: An Advanced Undergraduate Laboratory Experiment" Huggins, M. T.; Billiamoria, F. N. *J. Chemical Education*, **2007**, 84(*3*), 471-474.
6. "Novel N(23)-C(10)-Linked Linear Tetrapyrroles" Salzameda, N. T.; Huggins, M. T.; Lightner, D. A. *Tetrahedron*, **2006**, 62(*42*), 9827-9831.
7. "Carboxylic Acid to Amide Hydrogen Bonding. Oxo-Semirubins" Salzameda, N. T.; Huggins, M. T.; Lightner, D. A. *Tetrahedron*, **2006**, 62(*36*), 8610-8619.
8. "Schiff Base Oligopyrrolic Macrocycles as Ligands for Lanthanides and Actinides" Jonathan L. Sessler, Patricia J. Melfi, Elisa Tomat, Wyeth Callaway, Michael T. Huggins, Pamela L. Gordon, D. Webster Keogh, Richard W. Date, Duncan W. Bruce, and Bertrand Donnio *J. Alloys and Compounds*, **2006,** *418 (1-2),* 171-177.
9. "Synthesis and Study of a Calix[4]pyrrole-Texaphyrn Chimera. A new Oligopyrrole Chloride

Anion Receptor"; Sessler, J. L.; Cho, W.-S.; Dudek, S. P.; Hicks, L.; Lynch, V.; Huggins, M. T. *J. Porph. and Pthalocyan*., **2003**, *7(2)*, 97-104.

10. "Dipyrrylquinoxaline-Crown Ether Conjugates: Ditopic Receptors." Kirkovits, G. J.; Zimmerman, R. S.; Huggins, M. T.; Lynch, V.M.; Sessler, J. L. *Eur. J. Org. Chem.*, **2002**, 3768-3778.
11. "A C-H¨¨O=C Hydrogen Bond? Intramolecular Hydrogen Bonding in a Novel Semirubin." Huggins, M. T.; Lightner, D. A. *J. Org. Chem.*, **2001**, *66*, 8402-8410.
12. "Intramolecular Hydrogen Bonding Between Remote Termini" Huggins, M. T.; Lightner, D. A. *Tetrahedron*, **2001**, *57*, 2279-2287.
13. "Hydrogen Bonded Dimers in Dipyrrinones and Acyldipyrrinones" Huggins, M. T.; Lightner, D. A., *Monatsh. Chem.*, **2001**, *132*, 203-221.
14. "Hydrogen-Bonded Double Strands. Crystal Structure and Spectroscopic Properties of a 2,2'-Dipyrryl Ketone", Huggins, M. T.; Tipton, A. K.; Chen, Q.; Lightner, D. A. *Monatsh. Chem.*, **2000**, *131*, 825-838.
15. "Semirubin. A Novel Dipyrrinone Strapped by Intramolecularly Hydrogen Bonds", Huggins, M. T.; Lightner, D. A. *J. Org. Chem.*, **2000**, *65*, 6001-6008.
16. "On the Molecularity of Bilirubins and Their Esters and Anions in Chloroform Solution" Brower, J. O., Huggins, M. T., Boiadjiev, S. E., Lightner, D. A., *Monatsh. Chem.*, **2000**, *131*, 1047-1053.
17. "Supramolecular Ribbons. Crystal Structure and Spectroscopic Properties of 2,2'-Bipyrroyl",. Bernett, M. J.; Tipton, A. K.; Huggins, M. T.; Reeder, J. H., Lightner, D. A. *Monatsh. Chem.*, **2000**, *131*, 239-249.
18. "Stereochemistry and Conformational Analysis of Hemirubin", Huggins, M. T.; Lightner, D. A. *Tetrahedron*, **2000**, *56*, 1797-1810.
19. "Total Synthesis of a 10-Oxo-Bilirubin: Effects of the Oxo Group on Conformation, Transhepatic Transport and Glucuronidation", Chen, Q.; Huggins, M. T.; Lightner, D. A.; Norona, W.; McDonagh, A.F. *J. Am. Chem. Soc.* **1999**, *121*, 9253-9264.

Manuscripts Submitted or in Preparation (UWF Undergraduates Underlined)

1. Huggins, Michael T; Ward, Patrick "Dipyrrinone Imines as Molecular Receptors", *in preparation.*
2. Wallace, Karl; Huggins, Michael, T.; Walton, Ian "Fluorescent Dipyrrinones for Detection of Nerve Gas", *in preparation*.

Oral Presentations (presenting author underlined)

1. University of Nevada, Reno, Department of Chemistry, **April 9, 2010** (Invited)
2. University of Florida, Department of Chemistry, **September 24, 2009.** (Invited)
3. Florida State University, Department of Chemistry and Biochemistry , **February 3, 2009.** (Invited)
4. University of Southern Mississippi, Department of Chemistry and Biochemistry ,**November 9, 2008.** (Invited)
5. "Living in a Scientifically Illiterate Society" Huggins, Michael T.; Pensacola Section of the American Chemical Society, **September 15, 2008**.
6. *"Anion Binding Studies with Simple Pyrrole Derivatives"* Huggins, Michael T.; Florida Section of the American Chemical Society Annual Meeting, Orlando FL, **May 8-10, 2008.** (Invited)
7. Auburn University, Department of Chemistry and Biochemistry ,**September 13, 2007**. (Invited)
8. *"Living in a Scientifically Illiterate Society"* Huggins, Michael T.; University of West Florida, SPLASH Lecture Series, **September 24, 2007**.
9. *"Dipyrrinones: A new potential use in anion binding chemistry."* Huggins, Michael T.; Musto, Chris; Munro, Lyndsay; Catalano, Vincent J. Abstracts of Papers, 233rd ACS National Meeting, Chicago, IL, United States, **March 25-29, 2007**, ORGN-841.

10. University of Tampa, Department of Chemistry, **March, 19, 2007**. *(Invited)*
11. *"Legislative Mandates for Science Education at University and Secondary School Levels in the State of Florida*." Tanner, S. P. & Huggins, M.T., Australian Science Education Research Association, Canberra, Australia, **July 5-8, 2006.**
12. "*Nuclear Overhauser Effect: An Advanced Organic Laboratory Experiment"*, Huggins, M.T. & Billiamoria, F. N. 12th Royal Australian Chemical Institute Convention, Sydney, Australia, **July 3 - July 7, 2005**. *(Invited)*
13. "*Nuclear Overhauser Effect: An Advanced Organic Laboratory Experiment"*, Huggins, M.T., 20th Annual Meeting of the Organic Faculty of Florida, Orlando, FL, **March 4, 2005**.
14. "*Studies in Hydrogen Bonding*", Huggins, M. T., Pensacola Section of the American Chemical Society; Pensacola, FL, **January 27, 2005**. *(Invited)*

Poster Presentations at National & International Meetings (Presenting Author Underlined, UWF Undergraduate Co-Authors Italicized)

1. Huggins, M. T., *Hunt, J., Butler,* T., "Molecular Recognition Studies with Pyrrole Sulfonamide Derivatives", *5th International Symposium on Macrocyclic and Supramolecular Chemistry (V-ISMSC),* **June 6-10, 2010**, Nara, Japan.
2. Barkley, *Deborah, Walton, Ian,* Huggins, Michael. T. "Fluorescent Detection of Chemical Warfare Agents", Northeast Regional Meeting of the American Chemical Society, **June 2-5, 2010**, Postdam, NY.
3. Ward, *Patrick, Musto, Chris, Howton, William,* Huggins, Michael, "Molecular recognition studies with dipyrrinone analogs" *3rd International Symposium on Macrocyclic and Supramolecular Chemistry (III-ISMSC),* **July 13-18**, **2008**, Las Vegas, NV.
4. Aronson, Carl,; Parker, Matthew S.; Rau, Timothy D.; McDermott, Erin M.; Aronson, Eddy; Dale, Lawrence D.; Gurst, Jerome; Huggins, Michael T. "Visualization and computational techniques for teaching polymer chemistry to engineering undergraduates" *Abstracts of Papers, 235nd ACS National Meeting, San Francisco, CA, United States,* **April 6-10**, **2008**, CHED-40.
5. Huggins, Michael T.; *Butler, Tyler; Barber, Patrick* "Anion Binding Studies with Pyrrole Sulfonamides" *Abstracts of Papers, 235nd ACS National Meeting, San Francisco, CA, United States,* **April 6-10**, **2008**, CHED-656.
6. Huggins, Michael T.; *Barber, Patrick*. "Using acetoacetamides in the syntheses of pyrrole amides." *Abstracts of Papers, 233rd ACS National Meeting, Chicago, IL, United States,* **March 25-29, 2007**, ORGN-183.
7. Aronson, Carl; Charboneau, J. A.; Knack, D.; Aiken, R. L.; Parker, M. S.; Rau, T. D.; Aronson, L. Dl; Huggins, M. T.; Gurst, J. "Pedagogy across polymer chemistry: Engineering interface via computational and visualization techniques**."** *Abstracts of Papers, 232nd ACS National Meeting, San Francisco, CA, United States,* **Sept. 10-14, 2006**, CHED-448.
8. *Schonborn, W.*; Ryals, P. E.; Huggins, M. T. "Synthesis of phosphoinositides." *Abstracts of Papers, ACS National Meeting, Atlanta, GA, United States,* **March 26-30, 2006**, CHED-542.
9. *Munro, L.; Musto, C.*; Huggins, M. T. "Dipyrrinones as anion receptors." *Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States,* **March 26-30, 2006**, CHED-383.
10. *Blaney, J.*; Huggins, M. T. "Self-association properties of dipyrrinone analogs." *Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States,* **March 26-30, 2006**, CHED-487.
11. *Barber, P.*; Huggins, M. T. "Investigations into the preparation of acetoacetamides for use in the synthesis of pyrrole amides." *Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States,* **March 26-30, 2006**, CHED-421.

12. Huggins, M. T.; *Osborne, E. A.; Bloomer, M.; Dixon, D.* "Oligopyrrole Amides as Supramolecular Hosts for Anions and Neutral Molecules"12th Royal Australian Chemical Institute Convention, Sydney, Australia, **July 3 - July 7, 2005**, M126-PO-Or.
13. *Billamoria, F. N.*; Huggins, M. T., "*Synthesis and conformation analysis of dipyrrinone analogs"* Abstracts of Papers, 229th ACS National Meeting, San Diego, CA, United States, **March 13-17, 2005**, CHED-506.
14. Osborne, E. A..; Huggins, M. T., "*Synthesis and characterization of bipyrrole and dipyrrolylmethane anion receptors*"Abstracts of Papers, 229th ACS National Meeting, San Diego, CA, United States, **March 13-17, 2005**, CHED-509.
15. *Bloomer, M. D.*; Huggins, M. T., "*Synthesis and characterization of pyrrole amide-based receptors*"Abstracts of Papers, 229th ACS National Meeting, San Diego, CA, United States, **March 13-17, 2005**, CHED-511.
16. Huggins, M. T., *Dixon, D. & Harrison, M.* "*Bis(Pyrrole-Amides) as Potential Anion Receptors"* 3rd International Conference on Porphyrins and Phthalocyanines, New Orleans, LA, **July 11-16, 2004.**
17. Veauthier, J. M.; Huggins, M. T.; Koehler, T.; Seidel, D.; Lynch, V.; Sessler, J. L. "*New transition metal complexes of expanded porphyrin macrocycles: Synthetic methodologies for deprotonation and metal coordination"*, Abstracts of Papers, 226th ACS National Meeting, New York, NY, United States, **September 7-11, 2003**, INOR-229.
18. "*Synthesis and characterization of novel pyrrole containing materials*", Lindsay P. Hicks, G. Dan Pantos, Michael T. Huggins, Won-Seob Cho, Jonathan L. Sessler; 58th ACS Southwest Regional Meeting, Austin, Texas, **November 3-6, 2002.**

University & College Committees

General Education and Assessment Reform Committee (2010-current)
University Facilities Planning Advisory Committee (2009-current)
Committee Co-Chair (2009-present)
Florida State University System Physical Sciences Common Prerequisite Committee (2008-2009)
International Paper Community Advisory Board (2008-present)
Undergraduate Admissions Committee (2007-present)
UWF Property Survey Board (2008)
UWF Physics Department 7-year Review Team (2009)
CAS Dean's Leadership Committee (2007-2008)
Pensacola Junior College Program Review Team - Chemistry Program (2007-2008)
College of Arts and Sciences Council (2006-2008)
Library Advisory Committee (2004-2006)
Committee Chair (2005-2006)
Dean of Libraries Search Committee (2004-2005)
Undergraduate Admissions Committee, member (2003-2006)
CAS Dean's *Ad Hoc* Committee on Biochemistry (2004)
University Space Utilization Committee (2004-2005)
Environmental Health and Occupational Safety Committee, member (2003-2005)

Reviewer Activities

Petroleum Research Fund - Grant Proposals
Journal of Heterocyclic Chemistry - Journal Articles

Tetrehedron - Journal Articles
Tetrahedron Letters - Journal Articles
Journal of Chemical Education - Journal Articles
Chemical Communications - Journal Articles
Journal of Organic Chemistry - Journal Articles
New Journal of Chemistry - Journal Articles
Supramoelcular Chemistry - Journal Articles
Carey, F.A. Organic Chemistry, 7e, McGraw Hill, 2007, Chapter 13
Smith, J. G. *Organic Chemistry*, 2e, McGraw Hill, 2007, Chapter 14.
Quirke, *Organic Chemistry, 1e*, Wiley & Sons, 2005, Chapters 1, 8, & 9.
McMurray, J. *Organic Chemistry*, 6e, Thomson Brooks-Cole, 2004, Chapters 12 & 13.

Conferences and Workshops Attended

5th International Symposium on Macrocyclic and Supramolecular Chemistry, Nara, Japan (June, 2010)
238th National American Chemical Society Meeting, Washington D.C. (Aug., 2009)
236th National American Chemical Society Meeting, Philadelphia, PA (Aug., 2008)
3rd International Symposium on Macrocyclic and Supramolecular Chemistry, Las Vegas, NV (July 2008)
FAME Annual Meeting, Orlando, FL (May, 2008)
29th Annual Gulf Coast Chemistry Conference, Pensacola Beach, FL (Aug., 2007)
233rd National American Chemical Society Meeting, Chicago, IL (Mar., 2007)
2007 American Chemical Society Leaders Conferences (Jan., 2007)
28th Annual Gulf Coast Chemistry Conference, Pensacola Beach, FL (Sept., 2006)
Institute for Academic Leadership, Department Chairpersons Workshop Session Two, Howie-in-the-Hills, FL (May, 2006)
231st National American Chemical Society Meeting, Atlanta, GA (Mar., 2006)
Institute for Academic Leadership, Department Chairpersons Workshop Session One, Howie-in-the-Hills, FL (Oct., 2005)
27th Annual Gulf Coast Chemistry Conference, Pensacola Beach, FL (Sept., 2005)
10th International Conference on Circular Dichroism, Sandestin, FL (Aug., 2005)
12th Royal Australian Chemical Institute Convention, Sydney, Australia (July, 2005)
2nd Annual Workshop on Information Literacy at UWF Library (May, 2005)
20th Annual Meeting of the Organic Faculty of Florida, Orlando, FL (Mar., 2005)
26th Annual Gulf Coast Chemistry Conference, Pensacola Beach, FL (Sept., 2004)
3rd International Conference on Porphyrins and Phthalocyanines, New Orleans, LA (July, 2004)
19th Annual Meeting of the Organic Faculty of Florida, Orlando, FL (Mar., 2004)
25th Annual Gulf Coast Chemistry Conference, Pensacola Beach, FL (Sept., 2003)
24th Annual Gulf Coast Chemistry Conference, Pensacola Beach, FL (Sept., 2002)