T. Keith Hollis

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Department of Chemistry
Mississippi State University
MS State, MS 39762
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PROFESSIONAL PREPARATION

Huntingdon College, Montgomery, Alabama	B.A., Honors in Chemistry Magna Cum Laude	1989
University of Alabama, Tuscaloosa, Alabama	S.U.R.P	1988, 1989

National Science Foundation – Summer Undergraduate Research Participant
Advisor: Professor Lowell Kispert

The University of Chicago, Chicago, Illinois	Ph.D.	1995

Advisor: Professor Brice Bosnich
Thesis: Transition Metal Lewis Acids: The Mechanisms of the Mukaiyama Aldol and Sakurai Allylation Reactions

University of California, Irvine, California	NIH Postdoctoral Fellow	1995-1998

Advisor: Professor Larry E. Overman

APPOINTMENTS

June 2013 - present	Associate Professor of Chemistry, Mississippi State University, Starkville, MS
2009 - May 2013	Associate Professor of Chemistry, University of Mississippi, Oxford, MS
2006 - 2009	Assistant Professor of Chemistry, University of Mississippi, Oxford, MS
1998 - 2006	Assistant Professor of Chemistry, University of California, Riverside
1988 - 1989	General Chemistry Instructor, Huntingdon College, Montgomery, AL
1987-1989	Environmental Lab Technician, CH_2M Hill Environmental Laboratories, Montgomery, AL

AWARDS

The University of Mississippi

2007 Oak Ridge Associated Universities Ralph E. Powe Junior Faculty Enhancement Award in Physical Sciences Recipient
ACS Division of Organic Chemistry, Young Academic Investigators Symposium - 2007
University of Mississippi Faculty Research Fellow - 2007
College of Liberal Arts, Summer Research Award Recipient - 2008

University of California, Riverside

Regent's Faculty Fellowship
Regent's Faculty Development Award

University of California, Irvine

National Institutes of Health Postdoctoral Fellowship 1995 – 1998

The University of Chicago

Albert J. Cross Prize - excellence in graduate research, teaching, and departmental citizenship.
Department of Education G.A.A.N.N. Fellow

PROFESSIONAL ACTIVITIES, SERVICE, AND SOCIETIES

Secretary, SERMACS Inc., 2014
Immediate-Past- Chair, SERMACS Inc., 2013
Chair, SERMACS Inc., 2012
Chair-Elect, SERMACS, Inc., 2011
Member, SERMACS Awards Selection Committees, 2011- preesent
Member, *American Chemical Society, Omicron Delta Kappa*
Reviewer, *Journal of the American Chemical Society, Chemical Communications, Organometallics, Journal of Organometallic Chemistry, Organic Letters, European Journal of Inorganic Chemistry, Chemical Reviews, Journal of Molecular Catalysis: A Chemical, Heteroatom Chemistry, Advanced Synthesis & Catalysis, Inorganica Chimica Acta*
Organizer, *Organometallic Methods in Organic Synthesis Symposium, Western Regional American Chemical Society Meeting October 1999*
Session Chair, *Gordon Research Conference-Organometallic Chemistry, American Chemical Society National Meetings, 36th International Conference on Coordination Chemistry*
National Science Foundation Grant Review Panels: *Catalysis Panel-August 26, 2009; Synthesis Panel – October 13-14, 2009; Catalysis Panel – February 5, 2010; Chemical Synthesis Panel – October 31 – November 1, 2011; NSF Graduate Research Fellowship Panel, January 9-11, 2013.*

Mississippi State University
Chair, *Inorganic Search Committee*, 2014
Chair, *Departmental Instrumentation Committee*, 2013 - present
Chair, *Graduate Student Recruiting Committee*, 2013 - present
Member, *Tenure and Promotion Committee*, 2013 – present
Member, *Library Committee, Departmental Representative*, 2013 – present
Member, *Graduate Student Admissions Committee*, 2013 – present

The University of Mississippi
Departmental
Chair, *Organic Chemistry Faculty Search Committee,* 2012 – 2013
Member, *Inorganic Faculty Search Committee*, 2012 – 2013
Member, *Chemical Safety Committee*, 2010 - 2013
Member, *Graduate Student Admissions Committee*, 2006 - 2013
Member, *Graduate Student Recruiting Committee*, 2006 – 2013
Chair, *Graduate Student Recruiting Committee*, 2008 – 2013, *led doubling of graduate enrollment*
Manager, *NMR Facility*, 2007 – 2013
Member, *Department Assessment Committee*, 2007 – 2013
Member, Library Committee, 2006 - 2013
Member, *Analytical Chemistry Faculty Search Committee* – 2007-2008

Member, *Analytical Chemistry Faculty Search Committee* – 2006-2007
Member, *Physical Chemistry Faculty Search Committee* – 2006-2007

University-wide
Campus Coordinator, Calibrated Peer Review – CPR – online writing-to-learn, 2007 - 2013
Member, *Curriculum and Policy Committee, College of Liberal Arts*, 2012 - 2013
Member, *Graduate Council*, 2011 - 2013
Member, Rotating, *MS EPSCoR Steering Committee*, 2008 - 2010
Member, *University Quality Enhancement Program Design Task Force: Phase II_Technology Focused Group*, 2007 – 2008, wrote committee report, presentation
Member, *University Task Force-Evaluate Invention, Patenting and Copyright Policies*, 2007

UC, Riverside
Member, *Chemistry Graduate Recruiting Committee*, 1998 – 2001
Member, *Chemistry Undergraduate Studies Committee*, 2001 – present
Member, *Physical Sciences 1, DPP Planning Committee*, 1999
Member, *Undergraduate Council*, 2004 – present
Member, *Ad Hoc Committee to Review General Education*, 2004 – present.
Co-Chair, *Ad Hoc Committee of Undergraduate Council – Home Scholar Admission Committee,* 2005 - present
Mentor, *National Science Foundation, California Alliance for Minority Participation*, 2003 – 2005
Mentor, *UC, Leadership Excellence in Advanced Degrees*, 2000 – 2003

Courses Taught:
Mississippi State University: CH 8990(Organic Spectroscopy), CH 8213(Organometallics)

The University of Mississippi: Chem 221, 222 (Undergraduate Organic Chemistry), Chem 222 Honors Discussion Section, Chem 528 (Advanced Organic Chemistry), Chem 529 (Asymmetric Catalysis).
University of California, Riverside: Chem 112 (Organic Chemistry-lecture 112A, 112B, 112C; laboratory 112A, 112B, 112C; undergraduate), Chem122H (Organic Chemistry Honors Discussion, undergraduate), Chem 1B,C Laboratory (General Chemistry, undergraduate), Chem 150B (Inorganic Chemistry, undergraduate), Chem 210 (Organic Reactions & Mechanisms, graduate), Chem 215 (Advanced Organic Synthesis, graduate), Chem 217(Polymers, graduate), Chem 219T (Advanced Topics, Organometallic Chemistry and Catalysis), Chem 250 and 253 (seminar series).

RESEARCH PUBLICATIONS

(refereed journals)
Affiliation: University of Chicago (9/89 - 3/95)

1. T. Keith Hollis, N.P. Robinson, B. Bosnich "Homogeneous Catalysis. $[Ti(Cp^*)_2(H_2O)_2]^{2+}$: An Air-Stable, Water-Tolerant Diels-Alder Catalyst" *J. Am. Chem. Soc.* **1992**, *114*, 5464-5466.

2. T. Keith Hollis, N.P. Robinson, B. Bosnich "Homogeneous Catalysis. $[Ti(Cp)_2(CF_3SO_3)_2]$ and $[Zr(Cp)_2(CF_3SO_3)_2THF]$, Efficient Catalysts for the Diels-Alder Reaction" *Organometallics* **1992**, *11*, 2745-2748.

3. T. Keith Hollis, Arnold L. Rheingold, N.P. Robinson, John Whelan, B. Bosnich "Preparation and Properties of (S,S)-[Ti((R,R)-cyclacene)Cl_2], a Chiral Strapped Bent Metallocene" *Organometallics* **1992**, *11*, 2812-2816.

4. T. Keith Hollis, N.P. Robinson, B. Bosnich "Homogeneous Catalysis. $[Ti(Cp)_2(CF_3SO_3)_2]$ and $[Zr(Cp)_2(CF_3SO_3)_2THF]$, Fast and Efficient Catalysts for the Mukaiyama Cross-Aldol Reaction" *Tetrahedron Letters* **1992**, *33*, 6423-6426.

5. T. Keith Hollis, William Odenkirk, N.P. Robinson, John Whelan, B. Bosnich "Homogeneous Catalysis. Transition Metal Lewis Acids Catalysts" *Tetrahedron* **1993**, *49*, 5415-5430.

6. T. Keith Hollis, N.P. Robinson, John Whelan, B. Bosnich "Homogeneous Catalysis. Use of the $[Ti(Cp)_2(CF_3SO_3)_2]$ Catalyst for the Sakurai Reaction of Allylic Silanes with Orthoesters, Acetals, Ketals and Carbonyl Compounds" *Tetrahedron Letters* **1993**, *34*, 4309-4312.

7. William W. Ellis, T. Keith Hollis, William Odenkirk, Robert Ostrander, John Whelan, Arnold L. Rheingold, B. Bosnich "Synthesis, Structure, and Properties of Chiral Titanium and Zirconium Complexes Bearing Biaryl Strapped Substituted Cyclpentadienyl Ligands" *Organometallics* **1993**, *12*, 4391-4401.

8. T. Keith Hollis, Jeremy K. Burdett, B. Bosnich "Why are Bis(pentamethylcyclopentadienyl) Complexes, $[MCp_2]$, of Calcium, Strontium, Barium, Samarium, Europium, and Ytterbium Bent?" *Organometallics* **1993**, *12*, 3385-3386.

9. Thompson N. Doman, T. Keith Hollis, B. Bosnich "Molecular Mechanics Force Field for Bent Metallocenes of the Type $[M(Cp)_2Cl_2]$" *J. Am. Chem. Soc.* **1995**, *117*, 1352-1368.

10. T. Keith Hollis, B. Bosnich "Homogeneous Catalysis. Mechanisms of the Catalytic Mukaiyama Aldol and Sakurai Allylation Reactions" *J. Am. Chem. Soc.* **1995**, *117*, 4570-4581.

Affiliation: University of California, Irvine (3/95 - 6/98)

11. Michael Calter, T. Keith Hollis, Larry E. Overman*, Joseph Ziller, G. Greg Zipp AFirst Enantioselective Catalyst for the Rearrangement of Allylic Imidates to Allylic Amides@ *J. Org. Chem.* **1997**, *62*, 1449-1456.

12. T. Keith Hollis & Larry E. Overman, ACyclopalladated Amines as Enantioselective Catalysts for the Rearrangement of Allylic Imidates to Allylic Amides@ *Tetrahedron Letters* **1997**, *38*, 8837-8840.

13. T. Keith Hollis & Larry E. Overman APalladium Catalyzed Enantioselective Rearrangement of Allylic Imidates to Allylic Amides *J. Organometallic Chemistry*, **1999**, *576*, 290 - 299.

14. T. Keith Hollis & Larry E. Overman APalladium Catalyzed Enantioselective Rearrangement of Allylic Imidates to Allylic Amides@ in *Perspectives in Organopalladium Chemistry for the XXI Century*, J. Tsuji, Ed., Elsevier, New York, **1999**, pp 290 - 299.

Affiliation: University of California, Riverside

15. T. Keith Hollis, Li-Sheng Wang, Fook Tham "Dynamic Resolution of a Metallocene: Diastereoselective Assembly of an Early-Late Heterobimetallic Metal-Bridged ansa-Metallocene Opening a Route to Parallel Catalyst Synthesis." *Journal of the American Chemical Society*, **2000**, *122,* 11737 – 11738, http://dx.doi.org/10.1021/ja0024111.

16. T. Keith Hollis, Yi Joon Ahn, Fook S. Tham "The First Structural Characterization and Determination of the Isomerization Activation Parameters of a Chiral Phosphatitanocene," *Chem. Commun.* **2002**, 2996-2997, http://dx.doi.org/10.1039/B208945A.

17. T. Keith Hollis, Yi Joon Ahn, Fook S. Tham "Low-Valent Titanium Bis(phospholyl) Chemistry: A Configurationally Stable Chiral Phosphatitanocene," *Organometallics* **2003**, *22*, 1432-1436.

18. Li-Sheng Wang, T. Keith Hollis "Demonstration of a Phosphazirconocene as a Catalyst for the Ring Opening of Epoxides with TMSCl," *Org. Lett.* **2003**, *5*, 2543-2545.

19. Victor C. Vargas, Ramel J. Rubio, T. Keith Hollis, Martha E. Salcido "An Efficient Route to 1,3-Di-N-Imidazolylbenzene. A Comparison of Monodentate vs. Bidentate Carbenes in Pd Catalyzed Cross Coupling," *Org. Lett.* **2003**,*5*, 4847-4849.

20. Ramel J. Rubio, Gurusamy Thangavelu Senthil Andavan , Eike B. Bauer, T. Keith Hollis,* Joon Cho, Fook S. Tham, Bruno Donnadieu "Toward a General Method for CCC N-Heterocyclic Carbene Pincer Synthesis: Metallation and Transmetallation Strategies for Concurrent Activation of Three C-H Bonds," *Journal of Organometallic Chemistry*, **2005**, *690*, 5353-5364, http://dx.doi.org/10.1016/j.jorganchem.2005.05.007.

21. Gurusamy Thangavelu Senthil Andavan, Eike B. Bauer, Christopher S. Letko, T. Keith Hollis,* Fook S. Tham "Synthesis and Characterization of a Free Phenylene Bis(N-Heterocyclic Carbene) and its di-Rh complex. Catalytic Activity of the di-Rh and CCC-NHC Rh Pincer complexes in Intermolecular Hydrosilylation of Alkynes," *Journal of Organometallic Chemistry*, **2005**, *690*, 5938-5947.

22. Yi Joon Ahn, Ramel J. Rubio, T. Keith Hollis,* Fook S. Tham, Bruno Donnadieu "Slip-Inversion-Slip Mechanism of Phosphametallocene Isomerization. Spectroscopic Characterization of an η^1-Phospholyl Ti Complex. Synthesis and Structures of Chiral Monophospholyltitanium Complexes," Organometallics, *Organometallics*, **2006**, *25*, 1079-1083.

23. Sathyajith Ravindran, G. T. Senthil Andavan, Chunglin Tsai, Cengiz S. Ozkan,* and T. Keith Hollis* "Perforated Organometallic (POM) Nanotubes Prepared from a Rh N-Heterocyclic Carbene using a Porous Anodized Alumina Membrane (PAAM)," *Chemical Communications*, **2006**, 1616.

Affiliation:The University of Mississippi

24. William P. Freeman, Yi Joon Ahn, T. Keith Hollis,* J. Andrew Whitaker, Victor C. Vargas, Ramel J. Rubio, Karen D. Alingog, Eike B. Bauer, Fook S. Tham "Isomerization in Bent Phosphametallocenes: Combining Rotational Barriers and the Intramolecular Slip-Inversion-Slip Mechanism to Control Stereo-Conformation," *Journal Of Organometallic Chemistry*, **2008**, *693*, 2415-2423. DOI: 10.1016/j.jorganchem.2008.04.021.

25. Eike B. Bauer, Gurusamy Thangavelu Senthil Andavan, T. Keith Hollis,* Ramel J. Rubio, Joon Cho, Glenn R. Kuchenbeiser, Theodore R. Helgert, Christopher S. Letko, Fook S. Tham "Air and Water Stable Catalysts for Hydroamination/Cyclization. Synthesis and Application of CCC-NHC Pincer Complexes," *Organic Letters*, **2008**, *10*, 1175-1178.

26. Andriy Nadtochiy, T. Keith Hollis,* and Igor Ostrovskii* "Ferroelectric bimorph cantilever with self-assembled silane layer," *Applied Physics Letters*, **2008**, *92*, 263503. DOI: 10.1063/1.2952281.

27. Joon Cho, T. Keith Hollis,* Theodore R. Helgert, Edward J. Valente "An Improved Method for the Synthesis of Zirconium (CCC-N-Heterocyclic Carbene) Pincer Complexes and Applications in Hydroamination," *Chemical Communications*, **2008**, 5001 – 5003, DOI: 10.1039/b805174g.

28. Joon Cho, T. Keith Hollis,* Edward J. Valente, Jaclyn M. Trate "CCC-N-Heterocyclic Carbene Pincer Complexes: Synthesis, Characterization and Hydroamination Activity of a Hafnium Complex," *Journal of Organometallic Chemistry*, **2011**, *696*, 373-377, DOI:10.1016/j.jorganchem.2010.10.004.

29. Xiaofei Zhang, Ashley M. Wright, Nathan J. DeYonker, T. Keith Hollis,* Nathan I. Hammer,* C. Edwin Webster,* Edward J. Valente "Synthesis, Air-stability, Photo-bleaching, and DFT Modeling of Blue Light-Emitting Platinum CCC-N-Heterocyclic Carbene Pincer Complexes," *Organometallics* **2012**, *31(5)*, 1664-1672, DOI: 10.1021/om2010436. 9 journal pages, 38 pages of supporting information. *It was the #4 MOST READ article for the month. Among those on the list it was the #2 MOST READ original research article. As of November 2012 it is the #14 MOST READ article in the last 12 months on the Organometallics website. For February 2013 it is the #12 most read on the Organometallics website.*

30. Theodore R. Helgert, T. Keith Hollis,* Edward J. Valente "Synthesis of Titanium CCC-NHC Pincer Complexes and Catalytic Hydroamination of Unactivated Alkenes," *Organometallics*, **2012**, *31(8)*, 3002-3009, DOI:10.1021/om2010436. 8 journal pages and 33 pages of supporting information. *It was the #5 MOST READ article for the second quarter of 2012. Among those on the list at the time it was the #2 MOST READ original research article.*

31. Xiaofei Zhang, Bei Cao, Edward J. Valente, T. Keith Hollis* " Synthesis, Characterization, Photoluminescence, and Simulations of a CCC-NHC Supported Pt_2Ag_2 Mixed-Metal Cluster Containing a $PtAg_2$ Metallo-Cyclopropane," *Organometallics*, **2013**, *32*, 752-761, DOI: dx.doi.org/10.1021/om300330y. 10 journal pages and 51 journal pages of supporting information. *February 2013, #14 MOST READ article for the month according to Organometallics website.*

32. Wesley D. Clark, Ginger E. Tyson, T. Keith Hollis,* Edward J. Valente, Henry U. Valle, "Toward Molecular Rotors: Tetra-N-Heterocyclic Carbene Ag(I)-Halide Cubane-type Clusters," *Dalton Transactions* **2013**, 42(20), 7338 – 7344, DOI: 10.1039/C3DT32862G. *Invited for Dalton Transactions special issue on NHCs.*

33. Huckaba, A. J.; Hollis, T. K.; Howell, T. O.; Valle, H. U., Wu, Y. " Synthesis and Characterization of a 1,3-Phenylene-Bridged N-Alkyl Bis(benzimidazole) CCC-NHC Pincer Ligand Precursor: Homobimetallic Silver and Rhodium Complexes and the Catalytic Hydrosilylation of Phenylacetylene," *Organometallics*, **2013**, *32*, 63-69, DOI: dx.doi.org/10.1021/om3008037. 8 journal pages and 18 pages of supporting information. *February 2013, #13 MOST READ article for the month according to Organometallics website.*

34. Aron J. Huckaba, Bei Cao, T. Keith Hollis,* Henry U. Valle, John Kelley, Nathan I. Hammer, A. G. Oliver, C. Edwin Webster "Benzimidazolyl Platinum CCC-NHC Pincer Complexes: Synthesis, Characterization, and Photostability of a Blue-Green Emitter," *Dalton Trans.* **2013**, *42*, 8820-8826, DOI:10.1039/C3DT50438G. 7 journal pages and 20 pages of supporting information.

35. Aron J. Huckaba, T. Keith Hollis,* Sean W. Reilly, "Homobimetallic Rh NHC Complexes as Versatile Catalysts for Hydrosilylation of a Multitude of Substrates in the Presence of Ambient Air," *Organometallics*, **2013**, *32(12)*, 6248-6256, DOI: 10.1021/om400452q. 9 journal pages and 8 pages of supporting information.

Affiliation: Mississippi State University

36. Clark, W. D.; Cho, J.; Valle, H. U.; Hollis, T. K.; Valente, E. J., "Metal and halogen dependence of the rate effect in hydroamination/cyclization of unactivated aminoalkenes: Synthesis, characterization, and catalytic rates of CCC-NHC hafnium and zirconium pincer complexes;" *J. Organomet. Chem.*, **2014**, *751*, 534-540, DOI: 10.1016/j.jorganchem.2013.11.001.

37. Theodore R. Helgert, T. Keith Hollis,* Allen G. Oliver, Henry U. Valle, Yunshan Wu, Charles Edwin Webster "Synthesis, Characterization, and X-Ray Molecular Structure of Tantalum CCC-N-Heterocyclic Carbene (CCC-NHC) Pincer Complexes with Imidazole- and Triazole-Based Ligands," *Organometallics*, **2014**, *33*, 952-958, DOI: 10.1021/om401063e.

38. Tyler O. Howell, Aron J Huckaba, T. Keith Hollis "An Efficient Synthesis of Bis-1,3-(3′-aryl-N-heterocycl-1′-yl)arenes as CCC-NHC Pincer Ligand Precursors," *Organic Letters*, **2014**, *16*, 2570-2572, DOI: 10.1021/ol5007407.

39. Sean W. Reilly, Hannah K. Box, Glenn R. Kuchenbeiser, Ramel J. Rubio, Christopher S.

Letko, Kandarpa D. Cousineau, T. Keith Hollis "1,4-Addition of aryl boronic acids to α,β-unsaturated ketones catalyzed by a CCC-NHC pincer rhodium complex," *Tetrahedron Letters,* (TETL-D-14-01639R2) in press (TETL_45201), DOI: 10.1016/j.tetlet.2014.09.107.

40. Ginger E. Tyson, Kenan Tokmic, Casey S. Oian, Daniel Rabinovich, Henry U. Valle, T. Keith Hollis, John T. Kelly, Kristina A. Cuellar, Louis E. McNamara, Nathan I. Hammer, Charles Edwin Webster, Allen G. Oliver "Synthesis, characterization, photophysical properties, and catalytic activity of an SCS bis(N-heterocyclic thione) (SCS-NHT) Pd pincer complex," *Dalton*, submitted October 2014, DT-ART-10-2014-003324.

41. Wesley D. Clark, Katherine Leigh, Joon Cho, Henry U. Valle, T. Keith Hollis,* Charles Edwin Webster,* Edward J. Valente "Mechanism of Unactivated Alkenes: Synthesis and Characterization of Hafnium and Zirconium CCC-N-Heterocyclic-Carbene Complexes," *Journal of Organometallic Chemistry*, in preparation, November 2014 submission.

42. Theodore R. Helgert, T. Keith Hollis,* Henry U. Valle, "Synthesis, Characterization, and X-Ray Molecular Structure of a Di-Imido Tantalum CCC-N-Heterocyclic Carbene Pincer Complexes with NHC and MIC Ligands," in preparation, to be submitted to *J. Am. Chem. Soc.*, November 2014 submission.

43. Jaclyn M. Trate, T. Keith Hollis,* Edward J. Valente, Nathan I. Hammer,* C. Edwin Webster, "Synthesis, Light-Emitting Properties, Raman Spectra, Computational and Structural Characterization of CCC-NHC Pincer Complexes of Pd," *Organometallics*, in preparation, to be submitted December 2014.

44. Christopher F. Cain, Paul J. Kelley, T. Keith Hollis,* Edward J. Valente "Synthesis and Structural Characterization of CCC-NHC Pincer Complexes of Nickel," *Journal of Organometallic Chemistry*, in preparation for December 2014.

Outreach Activities

Affiliation: The University of Mississippi, Department of Chemistry and Biochemistry

1. Chemistry Demonstration - Liquid Nitrogen Ice Cream to Dippin' Dots, Lafayette Middle School, Ms. Foster's 7th Grade Science Class (22 students), April 23, 2013, with Ms. Kristina Cuellar and Ms. Ginger Tyson. Taught: Cold? vs. lack of heat with dry ice (sublimation demo) and liquid nitrogen.

2. Chemistry Demonstration - Liquid Nitrogen Ice Cream to Dippin' Dots, Lafayette High School, Ms. Wamble's Chemistry and Physical Science classes (37 students), April 23, 2013, participant with Professor T. Keith Hollis and Ginger Tyson. Taught: Cold? vs. lack of heat with dry ice (sublimation demo) and liquid nitrogen.

Affiliation: Mississippi State University, Department of Chemistry

3. Chemistry Demonstration - Liquid Nitrogen Ice Cream to Dippin' Dots, Mississippi NSF

EPSCoR Science Teacher Training (13 MS Middle School and 1 High School Science Teachers), June 10, 2013, participant with Professor T. Keith Hollis and Ginger Tyson. Taught: Cold? vs. lack of heat with dry ice (sublimation demo) and liquid nitrogen.

INVITED RESESEARCH PRESENTATIONS

Affiliation: University of California, Riverside

1. California State University, Northridge, CA, 10/99
   Seminar Title: Bifunctional Catalysis

2. SynCon2000, Los Angeles, CA, 4/22/00
   Seminar Title: "Novel Ligand Architectures for Catalysis: Dynamic Resolution in the Preparation of Bimetallic *ansa*-Metallocenes"

3. National Science Foundation Inorganic Workshop, Elkridge, MD, 7/6/00
   Seminar Title: "Enantioselective Self-Assembly of *ansa*-Metallocenes: Dynamic Kinetic Resolution of an Isomerizing Chiral Phosphazirconocene"

4. University of Alabama, Tuscaloosa, AL, 8/31/00
   Seminar Title: "Novel Ligand Architectures for Catalysis: Dynamic Resolution in the Preparation of Bimetallic *ansa*-Metallocenes and other Hetero-Cyclopentadienyl Chemistry"

5. San Diego State University, San Diego, CA, 11/13/00
   Seminar Title: "Novel Ligand Architectures for Catalysis: Dynamic Resolution in the Preparation of Bimetallic *ansa*-Metallocenes and other Hetero-Cyclopentadienyl Chemistry"

6. University of California, San Diego, CA, 2/23/01
   Seminar Title: "A Diastereo- and Enantio-convergent Synthesis of *ansa*-Metallocenes. Dynamic Resolution of Phosphametallocenes"

7. University of Southern California, Los Angeles, CA, 3/20/01
   Seminar Title: "Novel Ligand Architectures for Catalysis: Dynamic Resolution in the Preparation of Bimetallic *ansa*-Metallocenes and other Hetero-Cyclopentadienyl Chemistry"

8. California State University, Long Beach, Long Beach, CA 9/26/01
   Seminar Title: "Novel Ligand Architectures for Catalysis: Dynamic Resolution in the Preparation of Bimetallic *ansa*-Metallocenes and other Hetero-Cyclopentadienyl Chemistry"

9. University of California, Santa Barbara, Santa Barbara, CA 10/12/01
   Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis"

10. Harvey-Mudd College, Claremont, CA 4/08/03
    Seminar Title: "Exploring the Playground of Novel Ligand Architectures for Catalysis. Bent Phosphametallocenes - Scope and Mechanism."

11. Symyx Technologies, Incorporated, 9/09/03

Seminar Title: "Phosphametallocenes for Combinatorial Catalysis: Fundamentals and Applications"

12. University of Michigan, Ann Arbor, MI, 4/13/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

13. Michigan State University, East Lansing, MI, 4/14/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

14. Wayne State University, Detroit, MI, 4/15/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

15. California Institute of Technology, Pasadena, CA, 4/26/04,
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

16. Texas A&M University, College Station, TX, 4/28/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

17. University of Houston, Houston,TX 4/29/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

18. The University of Chicago, Chicago, IL, 5/7/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

19. University of Illinois, Urbana-Champaign, IL 5/11/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

20. Chicago State University, Chicago, IL, 5/13/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

21. Northwestern University, Evanston, IL 5/14/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

22. University of Illinois, Urbana-Champaign, 5/11/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

23. American Chemical Society, 228th National Meeting, Philadelphia, PA, August 24, 2004
    Seminar Title: "The Development of C-C-C Pincer Carbene Ligands for Catalysis"

24. University of Minnesota, Minneapolis-St. Paul, MN, 9/8/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

25. North Dakota State University, Fargo, ND, 9/9/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

26. Iowa State University, Ames, IA, 9/10/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

27. University of California, Irvine, 10/27/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

28. University of Maryland, College Park, MD, 10/28/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

29. Virginia Tech University, Blacksburg, VA, 10/29/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

30. University of North Carolina, Charlotte, NC, 11/1/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

31. University of North Carolina, Chapel Hill, NC, 11/2/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

32. California State University, Bakersfield, CA, 11/5/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

33. University of Illinois, Chicago, IL, 11/16/04
    Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

34. John Carroll University, Cleveland, OH 11/17/04

Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

35. Case Western Reserve University, Cleveland, OH, 11/18/04
Seminar Title: "Bioantonymous Ligand Design: Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis"

36. University of Akron, Akron, OH, 11/19/04
Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

37. California State University, Sacramento, CA, 4/8/05
Seminar Title: "Exploring the Playground of Novel Inorganic Ligand Architectures for Catalysis. Phosphametallocenes & More"

38. The University of Mississippi, Oxford, MS, 03/31/06
Seminar Title: "Exploring the Playground of Novel Ligand Architectures for Catalysis. Phosphametallocenes & CCC-NHC Pincers"

Affiliation: The University of Mississippi

39. Columbus State University, Columbus, GA, 10/22/07
Seminar Title: "Catalysts to Nanotubes: Carbenes, Carbenes, everywhere, Nor any that React," and graduate recruiting.

40. Mercer University, Macon, GA, 10/23/07
Seminar Title: "Catalysts to Nanotubes: Carbenes, Carbenes, everywhere, Nor any that react," and graduate recruiting.

41. Savannah State University, Savannah, GA, 10/24/07
Seminar Title: "Catalysts to Nanotubes: Carbenes, Carbenes, everywhere, Nor any that react," and graduate recruiting.

42. Johnson C. Smith University, Charlotte, NC, 10/25/07
Seminar Title: "Catalysts to Nanotubes: Carbenes, Carbenes, everywhere, Nor any that react," and graduate recruiting.

43. University of Central Arkansas, Conway, AR, 1/17/2008
Seminar Title: "Catalysts to Nanotubes: Carbenes, Carbenes, everywhere, Nor any that react," and graduate recruiting.

44. University of West Alabama, Livingston, AL, 2/21/2008
Seminar Title: "Catalysts to Nanotubes: Carbenes, Carbenes, everywhere, Nor any that react," and graduate recruiting.

45. Lousiana State University, Baton Rouge, LA, 2/22/2008
    Seminar Title: "Tridentate CCC-N-Heterocyclic carbenes: Synthetic method development and applications in Organic Synthesis and Nanomaterials," and graduate recruiting.

46. California State University, Northridge, CA, 3/28/2008
    Seminar Title: "Tridentate CCC-N-Heterocyclic carbenes: Synthetic method development and applications in Organic Synthesis and Nanomaterials," and graduate recruiting.

47. University of South Alabama, Mobile, AL, 8/28/2008
    Seminar Title: "Next Generation Ligand Architectures: Tridentate CCC-NHC pincer Complexes," and graduate recruiting.

48. The University of Southern Mississippi, Hattiesberg, MS, 9/12/2008
    Seminar Title: "Next Generation Ligand Architectures: Tridentate CCC-NHC pincer Complexes," and graduate recruiting.

49. The University Of Memphis, Memphis, TN, 9/26/ 2008.
    Seminar Title: "Tridentate CCC-NHC Pincer Complexes," and graduate recruiting.

50. The University of Alabama, Tuscaloosa, AL, 12/4/2008
    Seminar Title: "Tridentate CCC-NHC Pincer Complexes," and graduate recruiting.

51. National University of Mexico – Mexico City (UNAM-Mexico City), Mexico City, Mexico, February 17, 2009.
    Seminar Title: "Tridentate CCC-NHC Pincer Complexes: Synthetic Method Development and Applications," and graduate recruiting.

52. Union University, Jackson, TN, Spring, 2009
    Seminar Title: "Next Generation Ligand Architectures: Tridentate CCC-NHC pincer Complexes," and graduate recruiting.

53. The University of Alabama at Birmingham, Birmingham, AL, 11/12/2009
    Seminar Title: "Next Generation Ligand Architectures: Tridentate CCC-NHC pincer Complexes," and graduate recruiting.

54. Mississippi College, Jackson, MS, October 25, 2010
    Seminar Title: "Tridentate CCC-NHC Pincer Complexes," and graduate recruiting.

55. Baylor University, Waco, TX, November 12, 2010
    Seminar Title: "Tridentate CCC-NHC Pincer Complexes," and graduate recruiting.

56. Southeastern Louisiana University, Hammond, LA, February 18, 2011
    Seminar Title: "Tridentate CCC-NHC Pincer Complexes," and graduate recruiting.

57. Georgia Southern University, Stateboro, GA, October 20, 2011

Seminar Title: T. Keith Hollis, "Tridentate CCC-NHC Pincer Complexes," and graduate recruiting.

58. Northwest Community College, Senatobia, MS, March 27, 2012, For Community College Outreach, presented to Dr. Stacy Jones' Organic Chemistry Class
Seminar Title: Blue Emitters for OLED technologies and College and Graduate School Opportunities"

59. Rhodes College, Memphis, TN, October 23, 2012
Seminar Title: T. Keith Hollis, "Tridentate CCC-NHC Pincer Complexes," and graduate recruiting.

60. Mississippi State University, Starkville, MS, October 25, 2012
Seminar Title: T. Keith Hollis, "Tridentate CCC-NHC Pincer Complexes," and graduate recruiting.

Affiliation: Mississippi State University

61. Canadian Society of Chemistry, Quebec City, Quebec, Canada, May 27, 2013.
Seminar Title: CCC-NHC Pincer Complexes: Early and Late Transition Metal Complexes and Applications. T. Keith Hollis*

62. SILQCOM: Simposio Latino Americano de Química de Coordinación Y Organometállica, October 13-17, 2013.
Seminar Title: CCC-NHC Pincer Ta (V) Complexes: Synthesis, Ligand Exchange, NHC Rearrangement to a Mixed NHC-MIC (Mesoionic Carbene) Pincer and Intramolecular Catalytic Oxidative Amination. T.R. Helgert, T. Keith Hollis*

63. 69th Southwest Regional Meeting of the American Chemical Society, Waco, TX, United States, November 16-19, 2013. Invited to Catalysis Symposium organized by Professor Chuck Garner
Seminar Title: SWRM-567, Mechanistic studies of intramolecular hydroamination of alkylamines by a zirconium(IV) CCC-NHC pincer complex. Leigh, Katherine N.; Clark, Wesley D.; Hollis, T. K.; Webster, Charles E.*

64. 69th Southwest Regional Meeting of the American Chemical Society, Waco, TX, United States, November 16-19, 2013. Invited to Catalysis Symposium organized by Professor Chuck Garner
Seminar Title: SWRM-568, Mechanistic investigations in the hydroamination/cyclization of unactivated amino-alkenes with a CCC-NHC Zr pincer complex. Clark, Wesley D.; Cho, Joon; Valle, Henry U.; Helgert, Theodore R.; Hollis, T. K.; Valente, Edward J.; Leigh, Katherine N.; Webster, Charles E.

CONTRIBUTED RESEARCH PRESENTATIONS
Affiliation: University of California, Riverside

1. Gordon Research Conference–Organometallics, Newport, RI, July 25 – 29, 1999
   Poster Title: "Nucleophilic Catalysis of the Ring Opening of Epoxides with TMSCl?" T. Keith Hollis,* Li-Sheng Wang

2. 218th National Meeting of the American Chemical Society , New Orleans, LA, August 22, 1999
   Poster Title: ADevelopment of Early Transition Metal Phosphametallocenes as Nucleophilic Catalysts,@ T. Keith Hollis,* Li-Sheng Wang

3. 35th American Chemical Society Western Regional Meeting, Ontario, CA, October 1999
   Seminar Title: "Recent Developments in Nucleophilic Catalysis," T. Keith Hollis, L.-S. Wang

4. Gordon Research Conference–Organic Reactions and Processes, Bristol, RI, July 2000
   Poster Title: "Dynamic Resolution of a Phosphazirconocene. A New Conceptual Approach to Enantiopure *ansa*-Metallocenes" T. Keith Hollis, Li-Sheng Wang

5. Gordon Research Conference–Organometallics, Newport, RI, July/August 2000
   Poster Title: "Dynamic Resolution of a Phosphazirconocene. A New Conceptual Approach to Enantiopure *ansa*-Metallocenes" T. Keith Hollis, Li-Sheng Wang

6. 220th National Meeting of the American Chemical Society, Washington, D.C., August 2000
   Seminar Title: "Dynamic Kinetic Resolution of Metallocenes: Self-Assembly of Bimetallic *ansa*-Metallocenes" T. Keith Hollis, Li-Sheng Wang

7. 222th National Meeting of the American Chemical Society, Chicago, IL, August 2001
   Seminar Title: "Heteroatom Substituted Metallocene Chemistry and Applications" T. Keith Hollis, Li-Sheng Wang

8. Gordon Research Conferences – Organometallics, Newport, RI, July 2002
   Poster Title: "Phosphametallocene Isomerization Dynamics" T. Keith Hollis,* Yi Joon Ahn, William P. Freeman, Ramel, J, Rubio, Victor C. Vargas, Joseph A. Baker, Karen Alingog, Fook S. Tham

9. 223th National Meeting of the American Chemical Society, Orlando, FL, April 2002
   Seminar Title: "Synthesis and Characterization of Bis(η^5-Phospholyl)Titanium-Rhodium Bimetallic ansa-Metallocenes" T. Keith Hollis,* Yi Joon Ahn

10. Gordon Research Conferences – Inorganic Reactions and Mechanisms, Ventura, CA, February 2003
    Poster Title: "Bent Phosphametallocene Dynamics: Scope and Mechanism" T. Keith Hollis,* Yi Joon Ahn, Ramel J. Rubio, Victor C. Vargas, Fook S. Tham

11. 225th National Meeting of the American Chemical Society, New Orleans, LA, March 2003
    Seminar Title: "Isomerization of Phosphametallocenes" T. Keith Hollis,* Yi Joon Ahn

12. Gordon Research Conferences – Organometallics, Newport, RI, July 2003
    Poster Title: "Phosphametallocene Isomerization Mechanism" T. Keith Hollis*, Yi Joon Ahn, Ramel J. Rubio, William P. Freeman, Fook S. Tham

13. 227th National Meeting of the American Chemical Society, Anaheim, CA, March 2004
    Seminar Title: "Dynamic Resolution of Phosphametallocenes" T. Keith Hollis,* Li-Sheng Wang, William P. Freeman, Ramel J. Rubio, Yi Joon Ahn

14. 227th National Meeting of the American Chemical Society, Anaheim, CA, March 2004
    Seminar Title: "Novel Bidentate Carbene Ligands: A 1,3-phenylene Bridge" T. Keith Hollis , Victor. C. Vargas, Ramel J. Rubio, Martha E. Salcido

15. 227th National Meeting of the American Chemical Society, Anaheim, CA, March 2004
    Seminar Title: "Phosphametallocene Dynamics: An Oxidation State and Structural Comparison" Yi J. Ahn, T. Keith Hollis, William P. Freeman, Fook S. Tham

16. 227th National Meeting of the American Chemical Society, Anaheim, CA, March 2004
    Seminar Title: "Synthesis and Structural Sharacterization of Ring Slipped Phosphametallocenes" T. Keith Hollis, Ramel J. Rubio, Yi J. Ahn

17. 36th International Conference on Coordination Chemistry, Merida, Mexico, July 18 – July 23, 2004
    Seminar title: "Exploring Novel Ligand Architectures. Phosphametallocene Dynamics: Isomerization, Mechanism, Scope, Limitations and Application to Dynamic Resolution," T. Keith Hollis,* Yi J. Ahn, Ramel J. Rubio, Li-Sheng Wang, Eike B. Bauer, William P. Freeman, Main Group Element Coordination Chemistry Symposium, July 20, 2004.

18. 228th National Meeting of the American Chemical Society, Philadelphia, PA, August 2004
    Seminar Title: "The Development of C-C-C Pincer Carbene Ligands for Catalysis" T. Keith Hollis,* G. T. S. Andavan, J. Cho, R. J. Rubio

19. 229th National Meeting of the American Chemical Society, San Diego, CA, March 13 -17, 2005
    Seminar Title: "General Synthetic Methods for the preparation of tridentate bis(carbene) C-C-C pincer complexes," T. Keith Hollis,* Ramel J. Rubio, G. T. Senthil Andavan, Joon Cho, Martha Salcido, Christopher Letko.

20. 229th National Meeting of the American Chemical Society, San Diego, CA, March 13 -17, 2005
    Seminar Title: "Tridendate Pincer Carbene Complexes," G. T. Senthil Andavan, T. Keith Hollis,* Ramel J. Rubio, and Martha E. Salcido

21. 229th National Meeting of the American Chemical Society, San Diego, CA, March 13 -17, 2005
    Seminar Title: "Zirconium C-C-C Pincer Complexes Synthesis, Structural Characterization, and Catalytic Activity," Ramel J. Rubio, G. T. Senthil Andavan, Yi J. Anh, and T. Keith Hollis*.

22. Gordon Research Conferences – Organometallics, Newport, RI, July 2005
    Seminar Title: "CCC-NHC Pincer Complexes. A General Synthetic Methodology and Applications" T. Keith Hollis*, Ramel J. Rubio, G.T. Senthil Andavan, Eike Bauer, Joon Cho, Glenn R. Kuchenbeiser, Christopher S. Letko, Fook S. Tham, Bruno Donnadieu

Affiliation: The University of Mississippi

23. 2006 Southeastern Regional Meeting of the American Chemical Society, Savannah, GA, November 1-4, 2006, ***Invited Lecture to Division of Organic Chemistry, A. Cope Scholar Symposium***
    Seminar Title: "Bis(N-heterocyclic carbene) tridentate pincer complexes: Synthesis, characterization and catalytic applications," T. Keith Hollis.

24. 234th National Meeting of the American Chemical Society, Boston, MA, August 19 -23, 2007, ***Invited Lecture to Division of Organic Chemistry, Young Academic Investigators Symposium***
    Seminar Title: "CCC-NHC Ligands: Carbene ligand scaffolds for catalyst design with broader applications," T. Keith Hollis.

25. 234th National Meeting of the American Chemical Society, Boston, MA, August 19 -23, 2007
    Seminar Title: "Preparation of saturated CCC-N-heterocyclic carbene (NHC) pincer complexes of Zr: Metallation, transmetallation and catalytic applications," Joon Cho, (name omitted on submission: T. Keith Hollis*).

26. 2007 Southeastern Regional Meeting of the American Chemical Society, Greenville, SC, October 24 - 27, 2007
    Seminar Title: "General Methodology for the Synthesis of CCC-N-Heterocyclic Carbene Pincer Complexes," T. Keith Hollis,* Joon Cho, Theodore R. Helgert, Jaclyn M. Trate.

27. 2007 Southeastern Regional Meeting of the American Chemical Society, Greenville, SC, October 24 - 27, 2007
    Seminar Title: "Catalytic Applications of CCC-N-Heterocyclic Carbene Pincer Complexes to C-C and C-N Bond Forming Reactions," T. Keith Hollis,* Joon Cho, and Theodore R. Helgert.

28. 235th ACS National Meeting, New Orleans, LA, April 6-10, 2008, ORGN-642
    Seminar Title: "Preparation of CCC-N-heterocyclic carbene (NHC) pincer complexes and catalytic applications to C-C and C-N bond formation," Joon Cho, Theodore R. Helgert, T. Keith Hollis.*

29. Gordon Research Conferences – Organometallics, Newport, RI, July 2008
    Seminar Title: "Development of Synthetic Methodology for CCC-N-Heterocyclic Carbene (NHC) Pincer Complexes and Catalytic Applications," T. Keith Hollis*, Joon Cho, Theodore R. Helgert, Jaclyn Trate, Edward J. Valente

30. 2008 Southwest Regional Meeting of the American Chemical Society, Little Rock AR, October 2, 2008
    Seminar Title: "Toward the Development of Nano-Enhanced Sensors," T. Keith Hollis,* Andriy Nadtochiy, Igor Ostrovskii, Cengiz Ozkan.

31. 2008 Southwest Regional Meeting of the American Chemical Society, Little Rock AR, October 3, 2008
    Seminar Title: "General Methodology for the Synthesis of CCC-N-Heterocyclic Carbene Pincer Complexes," T. Keith Hollis,* Joon Cho, Theodore R. Helgert, Jaclyn M. Trate.

32. 2008 Southwest Regional Meeting of the American Chemical Society, Little Rock AR, October 3, 2008
    Seminar Title: "Catalytic Applications of CCC-N-Heterocyclic Carbene Pincer Complexes to C-C and C-N Bond Forming Reactions," T. Keith Hollis,* Joon Cho, and Theodore R. Helgert.

33. 2009 Zing Carbene Chemistry Conference, Cancun, Mexico, February 20, 2009
    Seminar Title: "Tridentate CCC-NHC Pincer Complexes: Synthetic Methods Development and Applications," T. Keith Hollis.

34. 2009 Southeastern Regional Meeting of the American Chemical Society, San Juan, Puerto Rico, October 21-24, 2009
    Seminar Title: "Extending the Method of Metallation/Transmetalation for CCC-NHC Pincer Complex Synthesis," T. Keith Hollis,* Joon Cho, Theodore R. Helgert, Jaclyn M. Trate, Xiaofei Zhang, J. Paul Kelley, Wesley Clark, Reed Gilbow.

35. 2009 Southeastern Regional Meeting of the American Chemical Society, San Juan, Puerto Rico, October 21-24, 2009
    Seminar Title: "Synthesis and Characterization of a CCC-NHC Late Transition Metal Complex," Jaclyn M. Trate, T. Keith Hollis.*

36. 2009 Southeastern Regional Meeting of the American Chemical Society, San Juan, Puerto Rico, October 21-24, 2009
    Seminar Title: "Synthesis of Late Transition Metal CCC-NHC Pincer Complexes," J. Paul Kelley, T. Keith Hollis.*

37. 2009 Southeastern Regional Meeting of the American Chemical Society, San Juan, Puerto Rico, October 21-24, 2009
    Seminar Title: "Synthesis and Characterization of a CCC-NHC Pincer M(II) Complex," Xiaofei Zhang, T. Keith Hollis.*

38. 2009 Southeastern Regional Meeting of the American Chemical Society, San Juan, Puerto Rico, October 21-24, 2009
    Seminar Title: "A Preparation of 1,3-Di(imidizolyl)Benzene," Wesley Clark, Reed Gilbow, Chris Roe, T. Keith Hollis.*

39. 2009 Southeastern Regional Meeting of the American Chemical Society, San Juan, Puerto Rico, October 21-24, 2009
    Seminar Title: "Synthesis of Early Transition Metal CCC-NHC Pincer Complexes," Theodore R. Helgert, T. Keith Hollis.*

40. 2010 MS EPSCoR Annual Meeting, JSU E-Center in Jackson, MS, April 15, 2010
    Seminar Title: "Syntheses Of New Ligand Precusors And Metal Complexes For The Fabrication Of Nanotubes," Theodore R. Helgert, Wesley D. Clark, T. Keith Hollis,*

41. 2010 MS EPSCoR Annual Meeting, JSU E-Center in Jackson, MS, April 15, 2010
    Seminar Title: "Potential Substrates for Nanotube Fabrication —CCC-NHC Pincer Supported Group 10 Metal Complexes," Xiaofei Zhang, Jaclyn Trate, Jay P. Kelly, T. Keith Hollis,* Edward J. Valente.

42. American Chemical Society, 66th Southwest Regional Meeting/62nd Southeastern Regional Meeting, New Orleans, LA, December 1, 2010
    Seminar Title: "INOR-208 Air-Stable, Blue Light-Emitting Group 10 CCC-N-Heterocyclic Carbene Pincer Complexes," X. Zhang, T. K. Hollis,* J. M. Trate, E. J. Valente, N. I. Hammer, A. M. Wright.

43. American Chemical Society, 66th Southwest Regional Meeting/62nd Southeastern Regional Meeting, New Orleans, LA, December 1, 2010
    Seminar Title: "INOR-222 Toward A General Synthesis Of Triazole-Based $C^{nhc}c^{ar}c^{nhc}$-N-Heterocyclic Carbene (NHC) Pincer Complexes," M. P. Dukes, T. K. Hollis.*

44. American Chemical Society, 66th Southwest Regional Meeting/62nd Southeastern Regional Meeting, New Orleans, LA, December 1, 2010
    Seminar Title: "INOR-223 Synthesis Of Titanium And Tantalum CCC-NHC Pincer Complexes," T. R. Helgert, T. K. Hollis,* E. J. Valente.

45. American Chemical Society, 66th Southwest Regional Meeting/62nd Southeastern Regional Meeting, New Orleans, LA, December 1, 2010
    Seminar Title: "INOR-291 Air-Stable, Blue Light-Emitting Group 10 CCC-N-Heterocyclic Carbene Pincer Complexes," T. K. Hollis,* X. Zhang, J. M. Trate, P. J. Kelly, E. J. Valente, A. M. Wright, N. I. Hammer.

46. American Chemical Society, 66th Southwest Regional Meeting/62nd Southeastern Regional Meeting, New Orleans, LA, December 1, 2010

Seminar Title: "ORG-582 Synthesis, Characterization, And Transmetalation Characteristics Of Bimetallic Supramolecular N-Heterocyclic Carbene Complexes," W. D. Clark, M. P. Dukes, T. K. Hollis,* X. Zhang, E. J. Valente.

47. American Chemical Society, 66th Southwest Regional Meeting/62nd Southeastern Regional Meeting, New Orleans, LA, December 1, 2010
    Seminar Title: "ORG-960 CCC-NHC Pincer Early Transition Metal Complexes For Catalysis," T. K. Hollis,* J. Cho, T. R. Helgert, E. J. Valente.

48. 2011 MS EPSCoR Annual Meeting, April 15, 2011 at Mississippi State University
    Seminar Title: Perforated Organometallic Nanotubes (POMNs): Syntheses Of Ligand Precusors And Metal Complexes For Structure And Nanopore Formation Mechanism Elucidation,"T. R. Helgert-Quintero, Billy Lalita Mendoza Forrest, T. Keith Hollis.

49. 2011 MS EPSCoR Annual Meeting, April 15, 2011 at Mississippi State University
    Seminar Title: "Experimental/Computational Collaboration. Perforated Organometallic Nanotubes (POMNs): Synthesis of Ligand Precusor Variants to Probe Nanotube Structure and Nanopore Formation Mechanism," Billy Lalita Mendoza Forrest, T. Keith Hollis.*****

50. 2011 MS EPSCoR Annual Meeting, April 15, 2011 at Mississippi State University
    Seminar Title: "Perforated Organometallic Nanotubes (POMNs): Characterizing the Structures of Dirhodium Bis(N-heterocyclic) Carbene Complexes by DFT Method," Bei Cao, T. K. Hollis,*

51. American Chemical Society, 63rd Southeastern Regional Meeting, October 28, 2011, Richmond, VA.
    Seminar Title: "SERM714 New CCC-NHC Pincer Ligand Architectures: Silver complexes," M. P. Dukes, Wesley D. Clark, T. K. Hollis,*

52. American Chemical Society, 63rd Southeastern Regional Meeting, October 28, 2011, Richmond, VA.
    Seminar Title: "SERM750 Hydroamination/cyclization catalysis of unactivated alkenes: synthesis of titanium CCC-NHC pincer complexes and a comparison of Ti, Zr, and Hf catalytic activity," T. R. Helgert, T. K. Hollis,* E. J. Valente.

53. American Chemical Society, 63rd Southeastern Regional Meeting, October 28, 2011, Richmond, VA.
    Seminar Title: "SERM703 Synthesis, air-stability, photo-bleaching, and DFT modeling of blue light-emitting platinum CCC-N-heterocyclic carbene pincer complexes," T. K. Hollis,* X. Zhang, J. M. Trate, P. J. Kelly, E. J. Valemte, A. M. Wright, N. I. Hammer

54. 244th ACS National Meeting & Exposition, Philadelphia, PA, United States, August 19-23, 2012
    Seminar Title: INOR-232 Computational study of catalytic intramolecular hydroamination by a CCC-NHC Rh pincer complex. Leigh, Katherine N.; Hollis, T. K.; Webster,* Charles E.

55. Gordon Research Conferences – Organometallics, Newport, RI, July 2012
    Seminar Title: "CCC-NHC Pincer Complexes: New Ligand Architecture and Chemistry of Group 4,5 & 10," T. Keith Hollis,* Theodore R. Helgert, Xiaofei Zhang

56. American Chemical Society, 68th Southwest Regional Meeting, November 4 – 7, 2012, Baton Rouge, LA.
    Seminar Title: "SWRM21 CCC-NHC Complexes: new ligands and early transition metals. Synthesis, characterization and catalysis," T. K. Hollis,* T. R. Helgert, T. O. Howell, M. P. Dukes

57. American Chemical Society, 68th Southwest Regional Meeting, November 4 – 7, 2012, Baton Rouge, LA.
    Seminar Title: "SWRM22 CCC-NHC complexes: New ligands and late transition metal complexes. Photoluminescent compounds," T. K. Hollis,* X. Zhang, A. J. Huckaba, B. Cao, H. U. Valle

58. American Chemical Society, 68th Southwest Regional Meeting, November 4 – 7, 2012, Baton Rouge, LA.
    Seminar Title: "SWRM237 Molecular rotors: Arene - bridged bis(Ag-NHC) complexes. Rotational Rates from VT-NMR," T. K. Hollis,* W. D. Clark, G. E. Tyson, M. P. Dukes, H. U. Valle

59. American Chemical Society, 64th Southeastern Regional Meeting, November 14 – 17, 2012, Raleigh, NC.
    Seminar Title: "SERM24 CCC-NHC complexes: New ligands and late transition metal complexes. Photoluminescent compounds," T. K. Hollis, , X. Zhang, A. J. Huckaba, B. Cao, H. U. Valle

60. American Chemical Society, 64th Southeastern Regional Meeting, November 14 – 17, 2012, Raleigh, NC.
    Seminar Title: "SERM184 CCC-NHC Complexes: new ligands and early transition metals. Synthesis, characterization and catalysis," T. K. Hollis,* T. R. Helgert, T. O. Howell, H. U. Valle, M. P. Dukes

61. American Chemical Society, 64th Southeastern Regional Meeting, November 14 – 17, 2012, Raleigh, NC.
    Seminar Title: "SERM469 Molecular rotors: Arene-bridged bis(Ag-NHC) complexes. rotational Rates from VT-NMR," T. K. Hollis,* W. D. Clark, G. E. Tyson, M. P. Dukes, H. U. Valle

62. 245th ACS National Meeting & Exposition, New Orleans, LA, United States, April 7-11, 2013
    Seminar Title: INOR-1199 Catalytic intramolecular hydroamination by titanium(IV) and rhodium(III) CCC-NHC pincer complexes. Leigh, Katherine N.; Hollis, T. K.; Webster, Charles E.

Affiliation: Mississippi State University

63. Gordon Research Conferences – Organometallics, Newport, RI, July 2013
    Seminar Title: "CCC-NHC Pincer Ti(IV) and Ta(V) Complexes: Synthesis, Characterization, and Catalysis" T. Keith Hollis,* Theodore R. Helgert

64. Gordon Research Conferences – Organometallics, Newport, RI, July 2013
    Seminar Title: "CCC-NHC Pincer Complexes of Ta: Synthesis, reactivity, and molecular Structure Determination of a Bis-Imido and an NHC/MIC Equilibrium," T. Keith Hollis,* Theodore R. Helgert

65. American Chemical Society, 65th Southeastern Regional Meeting, November 13 – 16, 2013, Atlanta, GA.
    Seminar Title: SERMACS757 Synthesis, characterization, and photophysical properties of a novel bis(N-heterocyclic thione) (NHT's) SCS-Pd pincer complex. Ginger E. Tyson, Kenan Tokmic, Daniel Rabinovich, Henry U. Valle, T. K.Hollis,* Charles E. Webster, John T. Kelly, Nathan I. Hammer

66. American Chemical Society, 65th Southeastern Regional Meeting, November 13 – 16, 2013, Atlanta, GA.
    Seminar Title: Sermacs158 Mechanistic investigations in the hydroamination /cyclization of unactivated amino-alkenes with a CCC-NHC Zr pincer complex. Clark, Wesley D.; Cho, Joon; Valle, Henry U.; Helgert, Theodore R.; Hollis, T. K.;* Valente, Edward J.; Leigh, Katherine N.; Webster, Charles E.

67. American Chemical Society, 65th Southeastern Regional Meeting, November 13 – 16, 2013, Atlanta, GA.
    Poster Title: SERMACS590 CCC-NHC Pincer Ta (V) Complexes: Synthesis, Ligand Exchange, NHC Rearrangement to a Mixed NHC–MIC (Mesoionic Carbene) Pincer, and Intramolecular Catalytic Oxidative Hydroamination of Alkenes. Theodore R. Helgert, T. K. Hollis,* Allen G. Oliver, Henry U. Valle, Yunshan Wu, Charles E. Webster.

SYMPOSIA/SESSIONS CHAIRED/LEAD

Affiliation: University of California, Riverside

1. American Chemical Society, Western Regional Meeting, Ontario, CA, October 6 – 8, 1999 Symposium Chaired: "Organometallic Methods in Organic Synthesis (Sponsored by Allergan)", Organizer.

2. Gordon Research Conferences – Organometallics, Newport, RI, July 20 – 25, 2003, Discussion Leader.

3. American Chemical Society, 227th National Meeting, Anaheim, CA, March 28 – April 1, 2004, Session Chair – Organometallic Metallocenes, March 29, 2004.

4. 36th International Conference on Coordination Chemistry, Merida, Mexico, July 18 – July 23, 2004, Session Chair – Catalysis Symposium, July 23, 2004.

5. American Chemical Society, 229th National Meeting, San Diego, CA, March 13 – 17, 2005, Session Chair – Organometallic – Synthesis, March 13, 2005.

Affiliation: The University of Mississippi

6. American Chemical Society, 68th Southwest Regional Meeting, Baton Rouge, LA, November 4 – 7, 2012, Session Chair – General – Inorganic, November 4, 2012.

7. American Chemical Society, 64th Southeastern Regional Meeting, Raleigh, NC, November 14 – 17, 2012, Session Chair – Organic Chemistry I, November 14, 2012.

Affiliation: Mississippi State University

8. Gordon Research Conferences – Organometallics, Newport, RI, July 7 – 12, 2013, Discussion Leader.

Grant Activity

A. *Current Extramural Support*

Agency	Title	Dates	Amount	PI
National Science Foundation (pending)	Next Generation Ligand Architectures: Expanding the Repertoire of CCC-NHC Ligands: Fundamentals and Applications Other investigators: none	June 1, 2014 to May 31, 2017	$581,995	**PI**
National Science Foundation (pending)	MRSEC: Materials Research Center for Sustainable Energy Technology	July 1, 2014 to June 30, 2019	$21,517,003	**Co-PI**
National Science Foundation (pending)	REU: Chemistry of Life Undergraduate Experience	May 1, 2014 to April 30, 2017	$359,823	**Co-PI**
National Science Foundation (pending)	EPSCoR: Materials	September 1, 2014 to August 31, 2019	$20,000,000	**Senior Personnel**
Department of Education, Graduate Assistance in Areas of National Need (UM)	Graduate Assistance in Areas of National Need: Chemistry Other investigators: PI: S. Pedigo	September 1, 2013 to August 31, 2016	$399,798	**Co-PI**
National Science Foundation (REU-1156713)(UM)	REU Site: Ole Miss Physical Chemistry Summer Research Program Other investigators: PI: N. Hammer	September 1, 2013 to August 31, 2016	$300,000	**Senior Personnel**
National Science Foundation (EPS-090372)	Modeling and Simulation of Complex Systems ($20 million to MSEPSCoR)	September 1, 2009 to August 31, 2014	$367,000	**Senior Personnel**

B. *Expired Extramural Support*

Agency	Title	Dates	Amount	PI
National Science Foundation	Next Generation Ligand Architectures: Design,	September 1, 2008 to	$394,000	**PI**

Agency	Title	Dates	Amount	PI
(CHE-0809732)	Development, Application and Chiral Variants Other investigators: none	August 31, 2012		
Oak Ridge Associated Universities	Organometallic Nanotubes	July 1, 2007 to June 31, 2008	$10,000	**PI**
ACS-Petroleum Research Fund (43703-AC1)	C-C-C N-Heterocyclic Carbene Pincer Complexes: A General Method of Preparation Critical - for Applications in Catalysis Other investigators: none	February 1, 2006 to August 31, 2008	$80,000	**PI**
National Science Foundation (CHE0317089) - expired	Novel Inorganic Ligand Architectures for Catalysis Other investigators: none	August 1, 2003 to July 31, 2007	$375,000	**PI**
National Science Foundation -REU (CHE0500968) - expired	Novel Inorganic Ligand Architectures for Catalysis – REU supplement Other investigators: none	December 10, 2004 to December 9, 2005	$6,000	**PI**
National Science Foundation (QnTM0432186) - expired	Quantum Information Processing in Single Crystal Solids with NMR Other Investigators: PI: L. Mueller	August 15, 2004 to August 14, 2007	$300,000	**Co-PI**
National Science Foundation - REU (QnTM0432186) - expired	Quantum Information Processing in Single Crystal Solids with NMR – REU supplement Other Investigators: PI: L. Mueller	June 1, 2005 to May 31, 2006	$12,000	**Co-PI**
U.S. Department of Education, Graduate Assistance in Areas of National Need (P200A030214) - expired	Graduate Assistance in Areas of National Need Other investigators: PI: M. Marsella; Co-PI: S. Lillard, L. Mueller	August 15, 2003 to August 14, 2006	$ 314,975	**Co-PI**
Department of Education, Graduate Assistance in Areas of National Need (expired)	Graduate Assistance in Areas of National Need Other investigators: PI: M. Marsella, Co-investigators: S. Lillard, L. Mueller	August 1, 2000 to August 14, 2003	$306,000	**Co-PI**

Agency	Title	Dates	Amount	PI
National Science Foundation Chemical Instrumentation Program (CHE-0541848)	Purchase of a Liquid Chromatograph-TOF Mass Spectrometer Other investigators: PI: Switzer, Co-PI: Marsella, Morton, Pirrung	February 1, 2006 to January 31, 2009	$307, 422	**Co-PI**
National Science Foundation-Major Research Instrumentation Program (expired)	Acquisitions of Mass Spectrometers for a University Facility (PI: C. Switzer, Co-PI=s: M.E. Adams, M.F. Dunn, M.J. Marsella, T.H. Morton, W.H. Okamura, D.L. Rabenstein, C.A. Reed, J.K.M. Roberts, F.M. Sladek, J.A. Traugh)	October 1, 1999 to September 30, 2000	$710,611	**Co-PI**
U.S. Navy Small Business Innovative Research Program (expired)	Development of Efficient, Low-Cost Manufacturing Process for 1,2,4-Butanetriol Other Investigators: PI: V. Lee (Maxdem Inc.)	May 1, 2001 to November 15, 2001	$69,976	***Coll**
ACS-Petroleum Research Fund (ACS PRF#37597-G3) (expired)	Mechanism of Isomerization of Phosphametallocenes Other investigators: None	January 1, 2002 to August 31, 2004	$35,000	**PI**
UC, MEXUS – CONACYT (CN-03-100) (expired)	Development of Energy Efficient Tandem Catalytic Systems for the Conversion of Fossil Fuels into High Value Products Other Investigators: Co-PI: David Morales-Morales (UNAM)	July 1, 2003 to December 30, 2004	$25,000	**PI**
UC, Cancer Research Coordinating Committee (expired)	Developing Methods for the Preparation of Therapeutically Relevant Vicinal Diamines Other Investigators: none	July 1, 2002 to June 30, 2003	$50,000	**PI**
UC Energy Institute (expired)	Development of Energy Efficient Tandem Catalytic Systems for the Conversion of Fossil Fuels into High Value Products Other Investigators: none	July 1, 2002 to June 30, 2003	$33,900	**PI**
	New Methods for the Preparation of Synthetic Intermediates		$40,000	**PI**

Agency	Title	Dates	Amount	PI
UC, Cancer Research Coordinating Committee (expired)	Leading to Chemotherapeutic Agents Other investigators: None	July 1, 1999 to June 30, 2000		

* Granting agency requires that business be listed as the PI.

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Professor Igor Ostrovskii, Department of Physics and Astronomy, UM
Professor Cengiz Ozkan, Mechanical Engineering, UCR
Professor Len Mueller, UCR
Professor David Morales-Morales, UNAM, Mexico City
Professor Arlene Russell, UCLA
Professor Orville Chapman (deceased), UCLA
Dr. Virgil Lee, Maxdem, Inc.

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Ramel Rubio (Ph.D., 2007)
Joon Cho (Ph.D., 2007)
Xiaofei Zhang (Ph.D., August 2013)
Theodore Helgert (Ph.D., anticipated December, 2013)
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Tyler Howell
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M.S. Advisor – Jaclyn Trate (2010), J. Paul Kelley (2010), Victor C. Vargas (M.S, 2004), Anil Khakhria (M.S., 2000), Joseph Baker (M.S., 2002), Olivera Zivkovic (M.S., 2002), (total = 6)

Postgraduate Sponsor – Dr. William P. Freeman (Nanosys, Inc.), Dr. Li-Sheng Wang (Materia, Inc.), Dr. Gurusamy-Thangavelo Senthil Andavan (PD Mechanical Engineering, Professsor Cengiz Ozkan), Dr. Eike Bauer (Illinois-Wesleyan University), Dr. Andriy Nadtoichiy total = 5

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