

Eric Jon Munson

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Date of Birth: October 28, 1964

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EDUCATION

- 1988-93 Ph.D. Chemistry
Dissertation Title - "In Situ Solid-State Nuclear Magnetic Resonance Studies of Reactions in Zeolite Catalysts"
Doctoral Advisor - Professor James F. Haw
Texas A&M University, College Station, Texas
- 1987-88 Fulbright Fellow
Technical University of Munich, Munich, West Germany
- 1983-87 B.A., *Summa Cum Laude*
Augustana College, Sioux Falls, South Dakota
Major: Chemistry, Physics / Minor: Mathematics

PROFESSIONAL EXPERIENCE

- 2012 Interim Chair – Dept. of Pharmaceutical Sciences, University of Kentucky
2010- Professor – Dept. of Pharmaceutical Sciences, University of Kentucky
2006-10 Professor – Dept. of Pharmaceutical Chemistry, University of Kansas
2002-10 Courtesy Professor – Dept. of Chemistry, University of Kansas
2001-06 Associate Professor – Dept. of Pharmaceutical Chemistry, University of Kansas
2000-01 Associate Professor – University of Minnesota, Minneapolis, Minnesota
1998-00 McKnight Land-Grant Assistant Professor, University of Minnesota
1996 Associate Member of the Graduate Faculty – Department of Pharmaceutics
1994 Assistant Professor – University of Minnesota, Minneapolis, Minnesota
1993-94 Postdoctoral Associate – Professor Alex Pines, University of California, Berkeley

HONORS AND AWARDS

- 2017 Chair, Gordon Research Conference on Preclinical Form and Formulation for Drug Discovery
2016-17 Chair, NIPTE Faculty Committee
2015-20 Chair, Excipients 1 Committee, United States Pharmacopeia
2014-17 Physical Pharmacy and Biopharmaceutics Section, AAPS, Secretary/Treasurer, (2014), Vice-Chair (2015), Chair-Elect (2016), Chair (2017)
2014 Research Achievement Award - Analysis and Pharmaceutical Quality Section – American Association of Pharmaceutical Scientists

- 2012-15 Associate Editor – *Molecular Pharmaceutics*
2010 Patrick DeLuca Endowed Professor in Pharmaceutical Technology
2009 Fellow – American Association of Pharmaceutical Scientists
2003 Pfizer Research Scholar Award
1998-00 McKnight Land Grant Professorship, University of Minnesota
1997 Visiting Professor - Federal University of Minas Gerias, Brazil
1996 National Science Foundation CAREER Award
1993 Texas A&M University Outstanding Graduate Research Award
1991 Society for Applied Spectroscopy Graduate Student Award
1991 ACS Division of Analytical Chemistry Graduate Fellowship Award
1991 Graduate Student Award, Houston Section, Society for Applied Spectroscopy
1989 Phi Lambda Upsilon - National Chemistry Honor Society
1988-91 National Science Foundation Predoctoral Fellow
1987-88 Fulbright Fellow - Technical University of Munich
1987 Outstanding Chemistry Student - ACS Great Plains Section

PROFESSIONAL SOCIETIES

American Chemical Society
American Association of Pharmaceutical Scientists

STUDENTS AND RESEARCH ASSOCIATES**Research Associates (Former):**

Dr. Dewey Barich (KU) 2/05-5/2010

Postdoctoral Research Associates (Current and Former):

Dr. Khalid Thakur (M)	11/95-1/96	Ph. D. 1994, University of Minnesota Advisor: Professor Paul Barbara Assumed position at Cargill, Minneapolis, MN 2/96
Dr. John Bemis (M)	12/96-8/97	Ph. D. 1997, University of Wisconsin, Madison Advisor: Professor Larry Dahl Assumed position at Tecmag, Houston, TX 8/97
Dr. Tom Offerdahl (KU)	11/01-3/05	Ph. D. 2001, South Dakota State University Advisor: Professor Jay Shore Assumed Position at Quintiles, Kansas City, MO 4/04
Dr. Bin Chen (KU)	8/02-6/03	Ph.D. 2001 University of Minnesota Advisor: Professor Eric Munson Assumed position at Schering Plough 6/03
Dr. Dewey Barich (KU)	2/03-2/05	Ph.D. 1999 Texas A&M University Advisor: Professor James Haw Assumed position at University of Kansas 8/10
Dr. Matt Nethercott (UK)	4/12-2/14	Ph.D. 2012, Michigan State University Advisor: Professor David P. Weliky
Dr. Sean Delaney (UK)	5/14-	Ph.D. 2014, Syracuse University Advisor: Professor Timothy Korter

Graduate Students (Former):

Michelle Douskey (M)	1993-1999	Ph.D., 1999, "Solid-State NMR Studies of Organometallics and Heterogeneous Catalysis"
Paul Isbester (M)	1994-1999	Ph. D., 1999, "Solid-State NMR Studies of Heterogeneous Catalysis and Fluoropolymers"
Matt Doscotch (M)	1994-1996	M. S., 1996, "Solution and Solid-State Nuclear Magnetic Resonance Studies of Poly(lactide)"
Brian Padden (M)	1994-2000	M. S., 1997, "Solid-State Nuclear Magnetic Resonance Studies of Pharmaceuticals: Aspartame, Nedocromil Salts, and Ephedrine Salts" Ph. D., 2000, "Characterization of Polymorphism in Pharmaceutical Solids Using Solid-State NMR Spectroscopy", initially employed by Abbott
Mark Zell (M)	1995-2000	Ph. D., 2000, "Multidimensional Solid-State Nuclear Magnetic Resonance Spectroscopy of Pharmaceuticals and Polymers"
Ryan Carlson (M)	1996-1998	M. S., 1998, "NMR Spectroscopy as a Tool in the Exploration of Pharmaceutical Applications Involving

		Cyclodextrins”
Jennifer Brandt (M)	1996-1999	M. S., 1999, “Solid-State NMR Studies of Fluoropolymers”
Bin Chen (M)	1996-2001	Ph. D., 2001, “NMR Study of n-Butane Oxidation Catalyzed by Vanadium Phosphorus Oxides and Other Metal Oxides-Based Catalysts”
Lauren Kaune Carlson (M)	1996-2001	Ph. D., 2001, “Flow Magic-Angle Spinning (MAS) and Two-Dimensional (2D) Exchange NMR Studies of Heterogeneous Catalysis and Polymer Microstructure”
Jonathon Salsbury (M/KU)	1999-2002	M.S., 2002, “Solid-State NMR Spectroscopy of Pharmaceuticals”
Joseph Lubach (KU)	2002-2007	Ph.D., 2007, “Applications of Nuclear Magnetic Resonance Spectroscopy to Pharmaceutical Solids”, initially employed by Genetech
Loren Schieber (KU)	2002-2010	Ph.D., 2010, “Methods for increasing sensitivity and throughput of solid-state NMR spectroscopy of pharmaceutical solids”, initially employed by Shook, Hardy, and Bacon, Kansas City, MO
Ben Nelson (KU)	2003-2011	Ph.D., 2011, currently employed by Wockhardt
Eric Gorman (KU)	2004-2011	Ph.D., 2011, “Solid-State Physical Form Detection and Quantitation of Pharmaceuticals in Formulations”, initially employed by Gilead, South San Francisco, CA
Robert Berendt (KU)	2004-2010	Ph.D., 2010, “Investigating the Effects of Enantiomeric Ratio and Preparation Method on Crystalline Forms of Proline Using Solid-State NMR Spectroscopy”, initially employed by FDA, Silver Springs, MD
Diana Sperger (KU)	2004-2010	Ph.D., 2010, “Solid-State NMR Analysis of Excipients and Drug-Excipient Interactions in the Amorphous State”, initially employed by Gilead, South San Francisco, CA
Elodie Dempah (KU)	2007- 2013	Ph.D., 2013, “Correlation of Solid-State NMR Relaxation Times to Functional Properties such as Chemical Stability and Particle Size”, initially employed at AbbVie, North Chicago, IL
Sarah Pyszczynski (KU)	2007- 2013	Ph.D., 2013, “Understanding Transformations of Trehalose in the Solid State”, initially employed at Catalent Pharma Solutions, Winchester, KY
Donia Arthur (UK)	2011-2014	M.S., 2014, currently employed at Piramal, Lexington, KY
Xiaoda Yuan (UK)	2011-2015	Ph.D., 2015, “A Molecular-Level View of the Physical Stability of Amorphous Solid Dispersions”, initially employed at Patheon, Cincinnati, OH

Graduate Students (Current):

Nickolas Winquist (UK)	2013-	Graduate Student
Kanika Sarpal (UK)	2013-	Graduate Student
Ashley Lay (UK)	2014-	Graduate Student

Julie Calahan (UK)	2015-	Graduate Student
Travis Jarrells (UK)	2017-	Graduate Student

Undergraduate Students:

Amy Dahl (M)	1994-95	Bart Flentje (M)	1994-95
Kimberly Kroiss (M)	1995-96	Marc Oliver (M)	1995
Mark Klingshirm – NSF (M)	1995	Ben Reed (M)	1995-96
David Siverson (M)	1995	Anne Kipp (M)	1996
Erika Knutson – NSF (M)	1996	Andrew Zalusky – NSF (M)	1997
Jesse Grenz (M)	1995-98	Chris Whiting (M)	1998-99
Connie Liebsch – NSF (M)	1999	Jessica Jorvig (M)	1999-00
Sung Jung Hong (KU)	2002	Christie Jones (KU)	2002
Barlas Buyuktimkin (KU)	2003	Jacob Davis (KU)	2003
Andrea Skinner (KU)	2004	Rebecca Sanders (KU)	2005
Lina Saliba (KU)	2005	Matt Durbin (KU)	2006
Lucas McCormick (KU)	2006	Maya Lipert (KU)	2007
Anna-Michelle Brooms (KU)	2008	Error! Bookmark not defined.	Moses Ashukem (KU)
Mallory Tough (UK)	2012	Marlene Rodriguez Còlon (UK)	2013
Daniel Pardue (UK)	2013	Jonathan Gerszberg (UK)	2015
Monique Jung Motta (UK)	2015	Job Limo (UK)	2016
Eli Ruffer (UK)	2016	Mery George (UK)	2016

Visiting Researchers:

Ruben Dario (M)	1995	Professor	Federal University of Mines Gerais, Belo Horizonte, Brazil
Flavia Cavalierra (M)	1998-99	Graduate Student	Univ. Fed. de Juiz de Fora Belo Horizonte, Brazil
Sarah Hudson (KU)	2010	Postdoc	Waterford Institute of Technology, Ireland
Evone Ghaly (UK)	2012	Professor	University of Puerto Rico
Mike Pikal (UK)	2013	Professor	University of Connecticut
Maarten Mensink (UK)	2013	Graduate Student	University of Groningen

INVITED LECTURES AND SEMINARS (Since 9/94)

1. University of Wisconsin, River Falls, WI, October 1994, Talk entitled "Solid-State NMR Studies of Catalysts and Surfaces"
2. University of Minnesota, Minneapolis, MN, November 1994, Talk entitled "Recent Developments in NMR of Solids and Surfaces"
3. Augustana College, Sioux Falls, SD, February 1995, Talk entitled "Recent Developments in NMR of Solids and Surfaces"
4. University of Minnesota, Morris, MN, October 1995, Talk entitled "Solid-State NMR Spectroscopy: Applications to Inorganic and Pharmaceutical Solids"
5. 3M Corporation, November 1995, Talk entitled "Solid-State NMR Spectroscopy: Applications to Inorganic and Pharmaceutical Solids"
6. Seton Hall University, November 1995, Talk entitled "Solid-State NMR Spectroscopy: Applications to Inorganic and Pharmaceutical Solids"
7. State University of New York, Stony Brook, November 1995, Talk entitled "Solid-State NMR Spectroscopy: Applications to Inorganic and Pharmaceutical Solids"
8. Texas A&M University, College Station, TX, March 1996, Talk entitled "Solid-State NMR Studies of Poly(lactic acid) and Pharmaceuticals"
9. Nutrasweet Kelco Corporation, Deerfield, IL, May 1996, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
10. Moorhead State University, Moorhead, MN, November 1996, Talk entitled "Solid-State NMR Studies of Poly(lactic acid) and Pharmaceuticals"
11. Eastern Analytical Symposium, Somerset, NJ, November 1996, Talk entitled "Solid-State NMR Studies of Polymorphism and Chirality in Pharmaceuticals"
12. University of Wisconsin, Madison, WI, December 1996, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
13. University of South Dakota, Vermillion, SD, April 1997, Talk entitled "Solid-State NMR: Solving Problems in Chemistry, Pharmaceutics, and Agricultural Sciences"
14. Central College, Pella, IA, April 1997, Talk entitled "Solid-State NMR: Solving Problems in Chemistry, Pharmaceutics, and Agricultural Sciences"

15. South Dakota State University, Brookings, SD, Henry A. Lardy Distinguished Lecturer, April 14-15, 1997, Two talks entitled "Solid-State NMR: Solving Problems in Chemistry, Pharmaceuticals, and Agricultural Sciences", and "Conformational and Configurational Analysis of Small and Large Molecules Using NMR Spectroscopy"
16. General Mills, Inc., Minneapolis, MN, May 1997, Talk entitled "Applications of Solid-State NMR to Agricultural Products"
17. 30th Great Lakes Regional Meeting of the ACS, Chicago, IL, May 1997, Talk entitled "Fourier Transform NMR Instrument for Undergraduate and Graduate Education"
18. 30th Great Lakes Regional Meeting of the ACS, Chicago, IL, May 1997, Talk entitled "Solid-State NMR Studies of Polymorphism in Pharmaceuticals"
19. Gordon Conference on Analytical Chemistry, New England College, NH, August 1997, Poster entitled "Solid-State NMR: Solving Problems in Heterogeneous Catalysis, Pharmaceuticals, and Polymers"
20. Federal University of Minas Geras, Belo Horizonte, Brazil, August 1997, Talk entitled "Solid-State NMR: Solving Problems in Heterogeneous Catalysis, Pharmaceuticals, and Polymers"
21. Petrobras, Rio de Janeiro, Brazil, September 1997, Talk entitled "Solid-State NMR: Solving Problems in Heterogeneous Catalysis, Pharmaceuticals, and Polymers"
22. 3M Corporation, St. Paul, MN, December 1997, Talk entitled "Solid-State NMR Studies of Materials, including Polymers and Pharmaceuticals"
23. 215th ACS National Meeting, Dallas, TX, March 1998, Talk entitled "Characterization of Poly(lactide) Using Solution and Solid-State NMR Spectroscopy"
24. 215th ACS National Meeting, Dallas, TX, March 1998, Talk entitled "New Techniques for NMR Studies of Heterogeneous Catalysis"
25. Society for Applied Spectroscopy, Minneapolis, MN, May 1998, Talk entitled "Solid-State NMR of Pharmaceuticals"
26. Dupont Experimental Station, Wilmington, DE, May 1998, Talk entitled "In-situ NMR Characterization of Heterogeneous Catalysis in an Isolated Flow Magic-Angle Spinning Probe and High Resolution ¹⁹F Solid-State NMR Spectroscopy of Fluoropolymers"
27. Seventeenth Blue Hen NMR Symposium, University of Delaware, Wilmington, DE, June 1998, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
28. Massachusetts Institute of Technology, Cambridge, MA, June 1998, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"

29. University of Massachusetts, Amherst, MA, June 1998, Talk entitled "Investigation of the Structure and Morphology of Poly(lactide) and Fluoropolymers Using NMR Spectroscopy"
30. University of Pittsburgh, Pittsburgh, PA, September 1998, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
31. Ursinus College, Collegeville, PA, September 1998, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
32. University of Missouri, Columbia, MO, October 1998, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
33. University of Missouri, Rolla, MO, October 1998, Talk entitled "Solid-State NMR Studies of Poly(lactide) and Fluoropolymers"
34. St. Louis NMR Users Group, Washington University, St. Louis, MO, October 1998, Talk entitled "New Techniques for Solid-State NMR Studies of Heterogeneous Catalysis, Polymers, and Pharmaceuticals"
35. University of Kansas, Lawrence, KS, October 1998, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
36. University of Alberta, Edmonton, Alberta, Canada, October 1998, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
37. University of British Columbia, Vancouver, BC, Canada, October 1998, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
38. 54th Southwest Regional Meeting of the ACS, Baton Rouge, LA, November 1998, Talk entitled "Understanding Defect Sites in Polymers: A ¹³C Solid-State NMR Study of Poly(Lactide)"
39. Purdue University, West Lafayette, IN, November 1998, Talk entitled "New Techniques for Solid-State NMR Studies of Heterogeneous Catalysis, Polymers, and Pharmaceuticals"
40. Indiana University, Bloomington, IN, November 1998, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
41. Eli Lilly, Indianapolis, IN, November 1998, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
42. University of California, Berkeley, CA, November 1998, Talk entitled "New Techniques for Solid-State NMR Studies of Heterogeneous Catalysis, Polymers, and Pharmaceuticals"
43. Florida State University, Tallahassee, FL, December 1998, Talk entitled "New Techniques for Solid-State NMR Studies of Heterogeneous Catalysis, Polymers, and Pharmaceuticals"

44. University of Florida, Gainesville, FL, December 1998, Talk entitled "New Techniques for Solid-State NMR Studies of Heterogeneous Catalysis, Polymers, and Pharmaceuticals"
45. Georgetown University, Washington, D. C., January 1999, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
46. University of Iowa, Iowa City, IA, February 1999, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
47. Varian NMR Users Conference, Orlando, FL, February 1999, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
48. University of Michigan, Ann Arbor, MI, May 1999, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
49. Michigan State University, East Lansing, MI, May 1999, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
50. Midwest Organic Solid-State Chemistry Symposium, Indianapolis, IN, June 1999, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
51. Washington State University, Pullman, WA, August 1999, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
52. 218th ACS National Meeting, New Orleans, LA, August 1999, Talk entitled "Development of an Isolated Flow MAS NMR System for Studies of Heterogeneous Catalysis"
53. University of Minnesota, Minneapolis, MN, October 1999, Talk entitled "New Developments in NMR Studies of Heterogeneous Catalysis"
54. University of Wisconsin, River Falls, November 1999, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
55. Argonne National Laboratory, Chicago, IL, January 2000, Talk entitled "New Developments in NMR Studies of Heterogeneous Catalysis"
56. University of Alberta, Edmonton, Alberta, Canada, February 2000, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
57. North Carolina State University, Raleigh, NC, February 2000, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
58. University of Kansas, Lawrence, KS, April 2000, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
59. E. J. Gallo, Modesto, CA, September 2000, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"

60. Alza, San Francisco, CA, September 2000, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
61. Yamanouchi Pharmaceuticals, San Francisco, CA, September 2000, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
62. Genentech, San Francisco, CA, September 2000, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
63. Colorado State University, Ft. Collins, CO, November 2000, Talk entitled "Solid-State NMR Spectroscopy of Polymers and Pharmaceuticals"
64. AAPS Kansas City Local Section, Kansas City, MO, February 2001, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
65. Pittsburgh Conference on Analytical Chemistry, New Orleans, LA, March 2001, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
66. Higuchi Conference, Lake of the Ozarks, MO, March 2001, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
67. Pharmaceutical and Biomedical Analysis Meeting, Monterey, CA, May 2001, Talk entitled "Solid-State NMR of Crystalline Pharmaceuticals"
68. R. W. Johnson Pharmaceutical Research Institute, Rariton, NJ, July 2001, Talk entitled "Solid-State NMR of Pharmaceuticals"
69. University of Michigan, Ann Arbor, MI, August 2001, Talk entitled "Solid-State NMR of Pharmaceuticals"
70. Pfizer, Ann Arbor, MI, August 2001, Talk entitled "Solid-State NMR of Pharmaceuticals"
71. R. W. Johnson Pharmaceutical Research Institute, Rariton, NJ, September 2001, Talk entitled "Solid-State NMR of Pharmaceuticals"
72. Wichita State University, Wichita, KS, September 2001, Talk entitled "Solid-State NMR of Pharmaceuticals"
73. University of Kansas, Lawrence, KS, September 2001, Talk entitled "Solid-State NMR of Pharmaceuticals"
74. Second International Workshop on the Physical Characterization of Pharmaceutical Solids, Lancaster, PA, September 2001, Talk entitled "Recent Advances in Solid-State NMR Applications to Pharmaceuticals"
75. Schering Plough, Kenilworth, NJ, September 2001, Talk entitled "Solid-State NMR of Pharmaceuticals"

76. Eastern Analytical Symposium, Somerset, NJ, October 2001, Talk entitled "Solid-State NMR Spectroscopy to Characterize Polymorphism and Pseudopolymorphism in Pharmaceutical Solids"
77. Boeringer Ingelheim, Danbury, CT, February 2002, Talk entitled "Solid-State NMR of Pharmaceuticals"
78. 3M, St. Paul, MN, February 2002, Talk entitled "Solid-State NMR of Pharmaceuticals"
79. Society for Applied Spectroscopy, St. Paul, MN, February 2002, Talk entitled "Determining Structure in Polylactide Using Solution and Solid-State NMR Spectroscopy"
80. Pittsburgh Conference on Analytical Chemistry, New Orleans, LA, March 2002, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
81. Lyondell, Philadelphia, PA, March 2002, Talk entitled "New Techniques for NMR Studies of Heterogeneous Catalysis"
82. US Pharmacopeia, Gaithersburg, MD, May 2002, Talk entitled "Solid-State NMR Study of Pharmaceuticals"
83. Polymorphism and Crystallization Conference, Philadelphia, PA, June 2002, Talk entitled "Determining Polymorphism Purity with the Identification and Quantitation of Mixtures of Drug Forms"
84. South Dakota State University, Brookings, SD, September 2002, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
85. Quintiles, Kansas City, MO, September 2002, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
86. University of North Carolina, Chapel Hill, NC, September 2002, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
87. Glaxo Smith Kline, Research Triangle Park, NC, October 2002, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
88. University of South Dakota, Vermillion, SD, October 2002, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
89. Pfizer, Groton, CT, October 2002, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
90. 37th Midwest Regional Meeting of the ACS, Lawrence, KS, October 2002, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
91. University of Kansas, Lawrence, KS, October 2002, Talk entitled "Solid-State NMR of Pharmaceuticals"

92. Drake University, Des Moines, IA, November 2002, Talk entitled "Solid-State NMR of Pharmaceuticals"
93. 225th ACS National Meeting, New Orleans, LA, March 2003, Talk entitled "Determining Stereodeflect Locations in Polylactide Using Solid-State NMR Spectroscopy"
94. Bristol-Myers Squibb, New Brunswick, NJ, June 2003, Talk entitled "Solid-State NMR of Pharmaceuticals"
95. Polymorphism and Crystallization Conference, Philadelphia, PA, June 2003, Talk entitled "Determining Polymorphism Purity with the Identification and Quantitation of Mixtures of Drug Forms"
96. Bausch & Lomb, Rochester, NY, July 2003, Talk entitled "Solid-State NMR of Pharmaceuticals"
97. Schering Plough, Kenilworth, NJ, September 2003, Talk entitled "Solid-State NMR of Pharmaceuticals"
98. Polymorphism and Crystallization Conference, Brussels, Belgium, September 2003, Talk entitled "Determining Polymorphism Purity with the Identification and Quantitation of Mixtures of Drug Forms"
99. Structural Elucidation by NMR Workshop, Rutgers University, New Brunswick, NJ, October 2003, Talk Entitled "Solid-State NMR of Pharmaceuticals"
100. Emporia State University, Emporia, KS, December 2003, Talk entitled "Solid-State NMR of Pharmaceuticals"
101. Pittsburg State University, Pittsburg, KS, December 2003, Talk entitled "Solid-State NMR of Pharmaceuticals"
102. Ft. Hays State University, Ft. Hays, KS, December 2003, Talk entitled "Solid-State NMR of Pharmaceuticals"
103. Polymorphism in Crystals, ACS ProSpectives Conference Series, Tampa, FL, February 2004, Talk entitled "Analysis of Pharmaceuticals Using Solid-State NMR Spectroscopy"
104. Salt Selection Conference, Philadelphia, PA, March 2004, Talk entitled "Identification and Quantitation of Mixtures of Drug Forms"
105. Varian NMR Users Meeting, Palo Alto, CA, April 2004, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
106. Polymorphism Conference, Princeton, NJ, April 2004, Talk entitled "Form Identification and Quantitation Using Solid-State NMR Spectroscopy"

107. Oxidative Degradation and Stabilization of Pharmaceuticals Conference, Princeton, NJ, July 2004, Two talks entitled “Oxidation Reactions in the Solid State: Mechanisms and Comparison to Solution Chemistry” and “Solid-State NMR Spectroscopy of Pharmaceuticals”
108. Cephalon, West Chester, PA, July 2004, Talk entitled “Solid-State NMR Spectroscopy of Pharmaceuticals”
109. SMASH, Breckenridge, CO, September 2004, Talk entitled “Solid-State NMR Spectroscopy of Pharmaceuticals: Challenges and Applications”
110. Polymorphism and Crystallization Conference, Boston, MA, November 2004, Talk entitled “Identifying Form Identification and Quantitation Using Solid-State NMR Spectroscopy”
111. University of Oklahoma, Oklahoma City, OK, February 2005, Clarence Karcher Lecture, Talk entitled “Solid-State NMR Spectroscopy of Pharmaceuticals”
112. Pittsburgh Conference on Analytical Chemistry, Orlando, FL, February 2005, Talk entitled “Solid-State NMR Spectroscopy of Pharmaceuticals”
113. Pfizer, La Jolla, CA, March 2005, Talk entitled “Solid-State NMR of Pharmaceuticals”
114. 229th ACS National Meeting, San Diego, CA, March 2005, Talk entitled “Solid-State NMR Spectroscopy of Pharmaceuticals”
115. AAPS Webcast, April 2005, Talk entitled “Solid-State NMR Spectroscopy of Pharmaceuticals”
116. Albany Molecular, May 2005, Talk entitled “Solid-State NMR Spectroscopy of Pharmaceuticals”
117. Varian NMR Users Meeting, Verona, Italy, September 2005, Talk entitled “Solid-State NMR Spectroscopy of Pharmaceuticals”
118. Eastern Analytical Symposium, Somerset, NJ, November 2005, Talk entitled “Analysis of Pharmaceuticals Using Solid-State NMR Spectroscopy”
119. Eastern Analytical Symposium, Somerset, NJ, November 2005, Talk entitled “Characterization of Forced Degradation in Formulations Using Solid-State NMR Spectroscopy”
120. University of Connecticut, Storrs, CT, November 2005, Talk entitled “Solid-State NMR of Pharmaceuticals”
121. AstraZeneca, Wilmington, DE, November 2005, Talk entitled “Solid-State NMR of Pharmaceuticals”

122. City University of New York, Staten Island, NY, March 2006, Talk entitled "Solid-State NMR of Pharmaceuticals"
123. University of Missouri, Kansas City, MO, April 2006, Talk entitled "Solid-State NMR of Pharmaceuticals"
124. Augustana College, Sioux Falls, SD, April 2006, Talk entitled "Solid-State NMR of Pharmaceuticals"
125. Polymorphism and Crystallization Conference, San Diego, CA, May 2006, Talk entitled "Form Identification and Quantitation Using Solid-State NMR Spectroscopy"
126. Improving Solubility in Drug Candidates Conference, Philadelphia, PA, September 2006, Talk entitled "Drug Form Characterization after Formulation with Cyclodextrins and Other Excipients", and Workshop entitled "Characterization and Reactivity of Solids Containing Highly Energetic Sites"
127. Amgen, La Jolla, CA, October 2006, Talk entitled "Solid-State NMR of Pharmaceuticals"
128. Merck, West Point, PA, October 2006, Talk entitled "Solid-State NMR of Pharmaceuticals"
129. Proctor & Gamble, Norwich, NY, November 2006, Talk entitled "Solid-State NMR of Pharmaceuticals"
130. Kansas State University, Manhattan, KS, February 2007, Talk entitled "Solid-State NMR of Pharmaceuticals"
131. Array Biopharma, Longmont, CO, February 2007, Talk entitled "Solid-State NMR of Pharmaceuticals"
132. University of Kentucky, Lexington, KY, March 2007, Talk entitled "Solid-State NMR of Pharmaceuticals"
133. Missouri State University, Springfield, MO, April 2007, Talk entitled "Solid-State NMR of Pharmaceuticals"
134. Ninth International Workshop on the Physical Characterization of Pharmaceutical Solids, Boston, MA, June 2007, Talk entitled "NMR Spectroscopy of Pharmaceutical Solids"
135. Vertex Pharmaceuticals, Boston, MA, June 2007, Talk entitled "Solid-State NMR of Pharmaceuticals"
136. Johnson & Johnson, Beerse, Belgium, September 2007, Talk entitled "Solid-State NMR of Pharmaceuticals"
137. Polymorphism and Crystallization Conference, Philadelphia, PA, December 2007, Talk entitled "Form Identification and Quantitation Using Solid-State NMR Spectroscopy"

138. Schering Plough, Kenilworth, NJ, March 2008, Talk entitled "Solid-State NMR of Pharmaceuticals"
139. Transform Pharmaceuticals, Boston, MA, April 2008, Talk entitled "Solid-State NMR of Pharmaceuticals"
140. Cima Pharmaceuticals, Minneapolis, MN, May 2008, Talk entitled "Solid-State NMR of Pharmaceuticals"
141. iPrime Conference, Minneapolis, MN, May 2008, Talk entitled "Advanced Solid-State Characterization of Pharmaceuticals"
142. Food and Drug Administration, Silver Springs, MD, May 2008, Talk entitled "Solid-State NMR of Pharmaceuticals"
143. Genentech, South San Francisco, CA, July 2008, Talk entitled "Solid-State NMR of Pharmaceuticals"
144. 236th ACS National Meeting, Philadelphia, PA, August 2008, Talk entitled "Solid-State NMR of Pharmaceuticals"
145. Abbott, Abbott Park, IL, August 2008, Talk entitled "Solid-State NMR of Pharmaceuticals"
146. Allergan, Irvine, CA, August 2008, Talk entitled "Solid-State NMR of Pharmaceuticals"
147. Gilead, South San Francisco, CA, August 2008, Talk entitled "Solid-State NMR of Pharmaceuticals"
148. SMASH, Santa Fe, NM, September 2008, Talk entitled "Solid-State NMR of Pharmaceuticals"
149. Johnson & Johnson, Springhouse, NJ, October 2008, Talk entitled "Solid-State NMR of Pharmaceuticals"
150. Indo-US Workshop on Pharmaceutical Co-crystals and Polymorphs, Mysore, India, February 2009, Talk entitled "Solid-State NMR Studies of Co-Crystals"
151. Polymorphism and Crystallization Conference, Boston, MA, March 2009, Talk entitled "Overcoming Physical Instability: Characterization of the Amorphous State"
152. Bristol-Myers Squibb, New Brunswick, NJ, April 2009, Talk entitled "Solid-State NMR of Pharmaceuticals"
153. AAPS Workshop on Evolving Science and Technology in Physical Pharmacy and Biopharmaceutics, Baltimore, MD, May 2009, Talk entitled "Chemical Reactions and Approaches to Improve Stability II: Solid State"

154. Boeringher Ingelheim, Danbury, CT, June 2009, Talk entitled "Solid-State NMR of Pharmaceuticals"
155. Eleventh International Workshop on the Physical Characterization of Pharmaceutical Solids, Samford, CT, June 2009, Talk entitled "Applications of Solid-State NMR Spectroscopy to Complex Matrices: Drugs, Excipients, and Formulations"
156. sanofi aventis, Bridgewater, NJ, July 2009, Talk entitled "Solid-State NMR of Pharmaceuticals"
157. University of Kentucky, Lexington, KY, August 2009, Talk entitled "Solid-State NMR of Pharmaceuticals"
158. Pfizer, Groton, CT, October 2009, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
159. Alkermes, Cambridge, MA, October 2009, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
160. AstraZeneca, Wilmington, DE, October 2009, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
161. American Association of Pharmaceutical Scientists Annual Meeting, Los Angeles, CA, November 2009, Talk entitled "Predicting Amorphous Drug Stability in Drug Formulations"
162. American Association of Pharmaceutical Scientists Annual Meeting, Los Angeles, CA, November 2009, Talk entitled "Advanced Characterization of Macromolecular Excipients"
163. The 9th Pharmaceutical Powder X-ray Diffraction Symposium, Hilton Head, SC, February 2010, Talk entitled "Solid-State Analysis of Pharmaceuticals: Solid-State NMR and PXRD"
164. Oklahoma State University, April 2010, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
165. David Grant Symposium, University of Minnesota, Minneapolis, MN, June 2010, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
166. 52nd Rocky Mountain Conference on Analytical Chemistry, Snowmass, CO, August 2010, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
167. University of Kentucky, Lexington, KY, September 2010, Talk entitled "Solid-State NMR of Pharmaceuticals"
168. Varian NMR Users Meeting, Minneapolis, MN, September 2010, Talk entitled "Solid-State NMR Spectroscopy of Pharmaceuticals"
169. Polymorphism and Crystallization Conference, Philadelphia, PA, October 2010, Talk entitled "Techniques for Form Identification and Quantitation"

170. St. Louis University, St. Louis, MO, February 2011, Talk entitled “Solid-State NMR of Pharmaceuticals”
171. Allergan, Irvine, CA, May 2011, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
172. Genentech, South San Francisco, CA, May 2011, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
173. Amgen, Thousand Oaks, CA, May 2011, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
174. University of Iowa, Iowa City, IA, June 2011, Talk entitled “Characterization of Pharmaceuticals Using Solid-State NMR Spectroscopy”
175. University of Maryland, Baltimore, MD, September 2011, Talk entitled “Characterization of Pharmaceuticals Using Solid-State NMR Spectroscopy”
176. Food and Drug Administration, Rockville, MD, October 2011, Talk entitled “Characterization of Pharmaceuticals Using Solid-State NMR Spectroscopy”
177. NIST, Gaithersburg, MD, October 2011, Talk entitled “Molecular Mobility of Pharmaceutical Amorphous Solids Probed Using SSNMR”
178. Midwest Universities Analytical Chemistry Conference, St. Louis, MO, November 2011, Talk entitled “Predicting Drug Stability Using Solid-State NMR Spectroscopy”
179. Enhancing Drug Bioavailability and Solubility, Boston, MA, January 2012, Talk entitled “Overcoming Physical Instability: Characterization of the Amorphous State”
180. AstraZeneca, Boston, MA, January 2012, Talk entitled “Characterization of Pharmaceuticals Using Solid-State NMR Spectroscopy”
181. New England NMR Meeting, Cambridge, MA, January 2012, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
182. Webinar, AAPS, April 2012, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
183. Abbott, Abbott Park, IL, July 2012, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
184. University of Connecticut, Storrs, CT, September 2012, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
185. Midwest University Analytical Chemistry Conference, Madison, WI, September 2012, Talk entitled “Quantitation with Solid-State NMR Spectroscopy”

186. Drake University, Des Moines, IA, October 2012, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
187. Truman State University, Kirksville, MO, October 2012, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
188. 2nd Enhancing Drug Bioavailability and Solubility, Boston, MA, January 2013, Talk entitled “Overcoming Physical Instability: Characterization of the Amorphous State”
189. Millennium Pharmaceuticals, Cambridge, MA, January 2013, Talk entitled “Characterization of Pharmaceuticals Using Solid-State NMR Spectroscopy”
190. Patheon Pharmaceuticals, Cincinnati, OH, February 2013, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
191. University of Wisconsin-Madison, March 2013, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
192. Discovery Chemistry Congress: Formulation and Solubility, Munich, Germany, March 2013, Talk entitled “Characterization Strategies for Metastable Drug Formulations”
193. Preclinical Form and Formulation for Drug Discovery, Waterville Valley, NH, June 2013, Talk entitled “
194. Drug Formulation and Bioavailability West, San Diego, CA, June 2013, Talk entitled “Lyophilization and Emerging Drying Technologies”
195. University of Windsor, Windsor, Ontario, July 2013, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
196. University of Michigan, Ann Arbor, MI, July 2013, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
197. Atomic View of Biomolecular Function, Ann Arbor, MI, July 2013, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
198. AbbVie, North Chicago, IL, July 2013, Talk entitled “Understanding Drug-Excipient Interactions in Solid Dosage Forms”
199. GlaxoSmithKline, King of Prussia, PA, October 2013, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
200. Bristol-Myers Squibb, New Brunswick, New Jersey, October 2013, Talk entitled “Solid-State NMR Studies of Pharmaceuticals”
201. American Chemical Society Midwest Regional Meeting, Springfield, MO, October 2013, Talk entitled “Characterization of Complex Mixtures of Polymorphic Forms Using Solid-State NMR Spectroscopy”

202. Midwest Universities Analytical Chemistry Conference, South Bend, IN, October 2013, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
203. American Association of Pharmaceutical Scientists, San Antonio, TX, November 2013, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
204. Liquidia Pharmaceutical Company, Morrisville, NC, January 2014, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
205. ExL Pharma 3rd Drug Formulation and Bioavailability conference, Boston, MA, January 2014, Talk entitled "Overcoming Physical Stability Characterization of the Amorphous State"
206. Alkermes, Waltham, MA, January 2014, Talk entitled "Center for Pharmaceutical Development- Project Update"
207. FDA, Silver Springs, MD, January 2014, Talk entitled "Solid-State NMR Studies of Pharmaceuticals"
208. University of Arkansas for Medical Sciences, Little Rock, AR, February 2014, "Meeting Today's Challenges in Solid-State Physical Pharmacy"
209. Hendrix College, Conway, AR, February 2014, "Meeting Today's Challenges in Solid-State Physical Pharmacy"
210. Allergan, Irvine, CA, April 2014, Talk entitled "Center for Pharmaceutical Development- Project Update"
211. Genentech, San Francisco, CA, April 2014, Talk entitled "Center for Pharmaceutical Development- Project Update"
212. David Grant Symposium, Minneapolis, MN, May 2014, talk entitled "Drug-excipient interactions in amorphous dispersions and tablets"
213. South Dakota State University, Brookings, SD, May 2014, talk entitled "Solid-State NMR Studies of Pharmaceuticals"
214. Gordon Research Conference on Crystal Engineering, Waterville Valley, NH, June 2014, Talk entitled "Identifying Crystal Forms in Complex Pharmaceutical Systems"
215. North Jersey ACS NMR Symposium, Rutgers University, New Brunswick, NJ, October 2014, talk entitled "New Applications of Solid-State NMR to Pharmaceuticals"
216. Bend Research, Bend, OR, October 2014, Talk entitled "Analysis of Structure and Properties of Solid Drugs, Excipients, and Dosage Forms"
217. Oregon State University, Cascades Campus, Bend, OR, October 2014, Talk entitled "Solid-State Characterization in Drug Development"

218. Gilead, Foster City, CA, October 2014, Talk entitled “Analysis of Structure and Properties of Solid Drugs, Excipients, and Dosage Forms”
219. Oral Drug Formulation Innovations Summit, San Diego, November 2014, Talk entitled “Innovations Within Characterization of Amorphous Materials to Advance Product Development”
220. AbbVie, Chicago, IL, November 2014, Talk entitled “Center for Pharmaceutical Development- Project Update”
221. Allergan, Irvine, CA, November 2014, Talk entitled “Center for Pharmaceutical Development- Project Update”
222. Pfanstiel, Chicago, IL, April 2015, Talk entitled “Characterization of Carbohydrate Excipients in the Solid State”
223. National Institute of Standards and Technology, Gaithersburg, MD, April 2015, Talk entitled “Advanced Characterization of Complex Dosage Forms to Demonstrate Product Equivalence”
224. Allergan, Irvine, CA, April 2015, Talk entitled “Understanding Drug-Excipient Interactions in Solid Dosage Form”
225. NIPTE, Rockville, MD, April 2015, Talk entitled “Evaluation of Polymorphic Changes During Tablet Manufacturing and Storage”
226. University of Puerto Rico, San Juan, Puerto Rico, May 2015, Talk entitled “Analysis of Structure Properties of Solid Drugs, Excipients, and Dosage Forms”
227. Curtis Coulter Drug Delivery Strategy: Advance Mechanisms & Product Design, Philadelphia, PA, May 2015, Talk entitled “Using Solid-State Nuclear Magnetic Resonance Spectroscopy to Study Amorphous Drug-Excipient Interactions”
228. FDA, May 2015, Talk entitled “Analysis of Structure Properties of Solid Drugs, Excipients, and Dosage Forms”
229. FDA, June 2015, Talk entitled “Advanced Characterization of Complex Dosage Forms to Demonstrate Product Equivalence”
230. AbbVie, Chicago, IL, July 2015, Talk entitled “Center for Pharmaceutical Development- Project Update”
231. Allergan, Irvine, CA, September 2015, Talk entitled “Center for Pharmaceutical Development- Project Update”
232. Genentech, San Francisco, CA, September 2015, Talk entitled “Center for Pharmaceutical Development- Project Update”

233. Bend Research, Bend, OR, September 2015, Talk entitled “Analysis of Structure and Properties of Solid Drugs, Excipients, and Dosage Forms”
234. Food and Drug Administration, Silver Spring, MD, March 2016, Talk entitled “Advanced Characterization of Drug Substances and Drug Products”
235. Bioavailability Summit, Curtis & Coulter, Boston, MA, May 2016, Talk entitled “Investigating Amorphous Dispersions: Miscibility, Stability, and Drug-Polymer Interactions”
236. Midwest Organic Solid State Chemistry Symposium (MOSSCS), Grand Forks, ND, June 2016, Talk entitled “Identifying Crystal Forms in Complex Pharmaceutical Systems”
237. David Grant Symposium, Minneapolis, MN, June 2016, Talk entitled “Correlating Structure and Mobility Information to Functional Properties of Pharmaceutical Formulations”
238. NIPTE NIPTE Scientific Design of Pharmaceutical Products, Rockville, MD, October 2016, Talk entitled “Using Solid-State NMR Spectroscopy as a Predictor of Lyophilized Protein Formulation Stability”
239. qNMR Summit, Rockville, MD, October 2016, Talk entitled “SS-qNMR: Practice & Promise”
240. Curtis & Coulter Bioavailability Summit, New York, NY, January 2017, Talk entitled “Oral Delivery for Biologics: Formulations and Other Potential Strategies”
241. Abbvie, Chicago, IL, January 2017, Talk entitled “Center for Pharmaceutical Development-Project Update”
242. USP, Rockville, MD, February 2017, Talk entitled “Improved Excipient Characterization Beyond the USP Monographs (functional, properties, etc.)”
243. Drug Formulation, Solubility, and Bioavailability Summit, Boston, MA, March 2017, Talk entitled “Characterization, Prediction and Excipient Selection for Amorphous Solids”
244. AAPS Bay Area Meeting, San Francisco, CA, March 2017, Talk entitled “Characterization of Polymorphs, Amorphous Solid Dispersion and Proteins in Lyophilized Formulations Using Solid-State NMR Spectroscopy”
245. Genentech, San Francisco, CA, March 2017, Talk entitled “Center for Pharmaceutical Development- Project Update”
246. Symposium on Higher Order Structure of Protein Therapeutics, Gaithersburg, MD, April 2017, Talk entitled “Characterization of Protein Stability in Lyophilized Formulations Using Solid-State NMR Spectroscopy”

247. National Biotech Conference, San Diego, CA, May 2017, Talk entitled “Miscibility in Lyophilized Protein Sugar Systems and Stability Implications”
248. NIST, Rockville, MD, June 2017, Talk entitled “Determining Local Acidity, Miscibility, and Mobility of Lyophilized Protein Formulations Using Solid-State NMR Spectroscopy”
249. 8th International Discussion Meeting on Relaxations in Complex Systems, Wisla, Poland, July 2017, Talk entitled “Characterization of Amorphous Solids Using Solid-State NMR Spectroscopy”
250. 24th Congress and General Assembly of the International Union of Crystallography, Hyderabad, India, August 2017, Talk entitled “Powder X-Ray Diffraction and Solid-State NMR Spectroscopy: Complimentary Techniques for Polymorph Identifications”
251. National Institute of Pharmaceutical Education and Research, Chandigarh, India, August 2017, Talk entitled “Determining Drug-Polymer Interactions and Phase Miscibility in Pharmaceutical Formulations”
252. Froemke Lecture, Augustana University, South Dakota, September 2017, talk entitled "What does NMR stand for again? A Chemists Journey Through Augustana College and Beyond"
253. Boeringer Ingelheim, Danbury, CT, February 2002, Talk entitled “Characterization of Polymorphs, Amorphous Solid Dispersions, and Proteins in Lyophilized Formulations Using Solid-State NMR Spectroscopy”
254. American Association of Pharmaceutical Sciences Annual Meeting, San Diego, CA, November 2017, Talk entitled “Using H/D Exchange to Predict Protein Stability in Lyophilized Formulations”
255. Lyophilization USA, Iselin, NJ, November 2017, Talk entitled “Stability of Sugar-Protein Lyophilized Formulations: Evaluation of Phase Separation and Mobility”
256. USP, Rockville, MD, November 2017, Talk entitled “Using Solid-State NMR Spectroscopy for the Analysis of Drug Substances and Drug Products”
257. University of Windsor, Windsor, Ontario, December 2017, Talk entitled “Correlating Structure and Mobility Information to Functional Properties of Pharmaceutical Formulations”
258. Purdue University, West Lafayette, IN, December 2017, Talk entitled “Correlating Structure and Mobility Information to Functional Properties of Pharmaceutical Formulations”
259. PepTalk 2018, San Diego, CA, Talk entitled “Prediction of Protein Stability in Lyophilized Formulations: Miscibility, Mobility, and Microenvironmental pH”
260. Duquesne University, Pittsburgh, PA, December 2017, Talk entitled “Using Solid-State NMR Spectroscopy for the Analysis of Drug Substances and Drug Products”

261. University of Arizona, Tempe, AZ, February 2018, Talk entitled “Correlating Structure and Mobility Information to Functional Properties of Pharmaceutical Formulations”
262. Tolmar, Ft. Collins, CO, March 2018, Talk entitled “Solid-State NMR Spectroscopy: Form Identification, Quantitation, and Applications to Drug Substances and Drug Products, Including Amorphous Solid Dispersions”
263. Genentech, South San Francisco, CA, March 2018, Talk entitled “Solid-State NMR Spectroscopy: Form Identification, Quantitation, and Applications to Drug Substances and Drug Products, Including Amorphous Solid Dispersions”
264. Pearl Therapeutics, Redwood City, CA, March 2018, Talk entitled “Solid-State NMR Spectroscopy: Form Identification, Quantitation, and Applications to Drug Substances and Drug Products, Including Amorphous Solid Dispersions”

PUBLICATIONS IN REFEREED JOURNALS

1. Lazo, N. D.; White, J. L.; Munson, E. J.; Lambregts, M.; Haw, J. F. "Structure, Dynamics, and Reactivity of an Alkoxy Intermediate Formed from Acetylene on Zeolite Catalysts: An in Situ Solid-State NMR Study", *J. Am. Chem. Soc.* **1990**, *112*, 4050.
2. Munson, E. J.; Haw, J. F. "Effects of Paramagnetic Lanthanides on the Study of Carbonaceous Deposits on Zeolite Catalysts by Carbon-13 Solid-State Nuclear Magnetic Resonance Spectroscopy", *Anal. Chem.* **1990**, *62*, 2532.
3. Munson, E. J.; Lazo, N. D.; Moellenhoff, M. E.; Haw, J. F. "CO is Neither an Intermediate nor a Catalyst in MTG Chemistry on Zeolite HZSM-5", *J. Am. Chem. Soc.* **1991**, *113*, 2783.
4. Lazo, N. D.; Richardson, B. R.; Schettler, P. D.; White, J. F.; Munson, E. J.; Haw, J. F. "In Situ Variable-Temperature MAS ¹³C NMR Study of the Reactions of Isobutylene in Zeolites HY and HZSM-5", *J. Phys. Chem.* **1991**, *95*, 9420.
5. Munson, E. J.; Haw, J. F. "NMR Observation of Trimethyloxonium Formation from Dimethyl Ether on Zeolite HZSM-5", *J. Am. Chem. Soc.* **1991**, *113*, 6303.
6. Munson, E. J.; Kheir, A. A.; Lazo, N. D.; Haw, J. F. "In Situ Solid-State NMR Study of Methanol-to-Gasoline Chemistry in Zeolite HZSM-5", *J. Phys. Chem.* **1992**, *96*, 7740. Correction due to printer's error: *J. Phys. Chem.* **1993**, *97*, 4248.
7. Munson, E. J.; Ferguson, D. B.; Kheir, A. A.; Haw, J. F. "Applications of a New CAVERN Design to the Study of Reactions on Catalysts Using in Situ Solid-State NMR", *J. Catal.* **1992**, *136*, 504.
8. Lambregts, M. J.; Munson, E. J.; Kheir, A. A.; Haw, J. F. "¹³C NMR Study of Acetylene Cyclotrimerization on Platinum-Alumina Catalysts", *J. Am. Chem. Soc.* **1992**, *114*, 6875.
9. Oliver, F. G.; Munson, E. J.; Haw, J. F. "High-Temperature in Situ MAS NMR Studies of Chemical Reactions on Catalysts", *J. Phys. Chem.* **1992**, *96*, 8106.
10. Munson, E. J.; Xu, T.; Haw, J. F. "In Situ NMR Study of Allyl Alcohol Conversion on Zeolites: Evidence for an Allyl Cation Intermediate", *J. Chem. Soc., Chem. Commun.* **1993**, 75.
11. Munson, E. J.; Haw, J. F. "Reaction Tuning in Zeolites: An in Situ MAS NMR Study of Acetaldehyde Chemistry on HZSM-5", *Angew. Chem.* **1993**, *32*, 615.
12. Munson, E. J.; Murray, D. K.; Haw, J. F. "Shallow-Bed CAVERN Designs for in Situ Solid-State NMR Studies of Catalytic Reactions", *J. Catal.* **1993**, *141*, 733.
13. Munson, E. J.; Kheir, A. A.; Haw, J. F., "An in Situ Solid-State NMR Study of the Formation and Reactivity of Trialkylonium Ions in Zeolites", *J. Phys. Chem.* **1993**, *97*, 7321.

14. Xu, T.; Munson, E. J.; Haw, J. F. "Toward a Systematic Chemistry of Organic Reactions in Zeolites: In Situ NMR Studies of Ketones", *J. Am. Chem. Soc.* **1994**, *116*, 1962.
15. Haw, J. F.; Hall, M. B.; Alvarado-Swaisgood, A. E.; Munson, E. J.; Lin, Z.; Beck, L.; Howard, T. "Integrated NMR and Ab Initio Study of Acetonitrile in Zeolites: A Reactive Complex Model of Zeolite Acidity", *J. Am. Chem. Soc.* **1994**, *116*, 7308.
16. Xu, T.; Zhang, J.; Munson, E. J.; Haw, J. F. "A Report of a Persistent Allyl Cation on HZSM-5 Zeolite Was Due to Propanal", *J. Chem. Soc., Chem. Commun.* **1994**, 2733.
17. Lagow, R. J.; Kampa, J. J.; Wei, H.-C.; Battle, S. L.; Genge, J. W.; Laude, D. A.; Harper, C. J.; Bau, R.; Stevens, R. C.; Haw, J. F.; Munson, E. J. "Synthesis of Linear Acetylenic Carbon: The "sp" Carbon Allotrope", *Science* **1995**, *267*, 362.
18. Gaede, H. C.; Taylor, R. E.; Munson, E. J.; Pines, A.; Song, Y.; Reimer, J. A. "High-Field Cross-Polarization NMR from Laser-Polarized Xenon to Surface Nuclei", *Adv. Magn. Reson.* **1995**, *8*, 373.
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20. Thakur, K. A. M.; Kean, R. T.; Zupfer, J. M.; Buehler, N. U.; Doscotch, M. A.; Munson, E. J. "Solid-State ^{13}C CP-MAS NMR Studies of the Crystallinity and Morphology of Poly(L-lactide)", *Macromolecules* **1996**, *29*, 8844-8851.
21. Zhu, H.; Khankari, R. K.; Padden, B. E.; Munson, E. J.; Gleason, W. B.; Grant, D. J. W. "Physicochemical Characterization of Nedocromil Bivalent Metal Salt Hydrates: 1. Nedocromil Magnesium", *J. Pharm. Sci.* **1996**, *85*, 1026-1034.
22. Zhu, H.; Padden, B. E.; Munson, E. J.; Grant, D. J. W. "Physicochemical Characterization of Nedocromil Bivalent Metal Salt Hydrates: 2. Nedocromil Zinc", *J. Pharm. Sci.* **1997**, *86*, 418-429.
23. Isbester, P. K.; Kestner, T. A.; Munson, E. J. "High-Resolution Variable-Temperature MAS ^{19}F NMR Spectroscopy of Fluorocarbon Polymers", *Macromolecules* **1997**, *30*, 2800-2801.
24. Thakur, K. A. M.; Kean, R. T.; Hall, E. S.; Kolstad, J. J.; Lindgren, T. A.; Doscotch, M. A.; Siepmann, J. I.; Munson, E. J. "High Resolution ^{13}C and ^1H Solution NMR Study of Poly(lactide)", *Macromolecules* **1997**, *30*, 2422-2428.
25. Holland, B. T.; Isbester, P. K.; Blanford, C. F.; Munson, E. J.; Stein, A. "Synthesis of Ordered Aluminophosphate and Galloaluminophosphate Mesoporous Materials with Anion Exchange Properties Utilizing Polyoxometalate Cluster/Surfactant Salts as Precursors", *J. Am. Chem. Soc.* **1997**, *119*, 6796-6803.

26. Zhu, H.; Halfen, J. A.; Young, V. G., Jr.; Padden, B. E.; Munson, E. J.; Menon, Z.; Grant, D. J. W. "Physicochemical Characterization of Nedocromil Bivalent Metal Salt Hydrates: 3. Nedocromil Calcium", *J. Pharm. Sci.* **1997**, *86*, 1439-1447.
27. Thakur, K. A. M.; Kean, R. T.; Hall, E. S.; Doscotch, M. A.; Munson, E. J. "A Quantitative Method for Determination of Lactide Composition in Poly(Lactide) Using ^1H NMR", *Anal. Chem.* **1997**, *69*, 4303-4309.
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31. Doscotch, M. A.; Evans, J. F.; Munson, E. J. "Fourier Transform Nuclear Magnetic Resonance Spectroscopy Experiment for Undergraduate and Graduate Students", *J. Chem. Educ.* **1998**, *75*, 1008-1013.
32. Thakur, K. A. M.; Kean, R. T.; Hall, E. S.; Kolstad, J. J.; Munson, E. J. " ^1H NMR Spectroscopy in the Analysis and Characterization of Poly(Lactide)", *Int. J. Polym. Anal. Charact.* **1998**, *4*, 379-391.
33. Thakur, K. A. M.; Kean, R. T.; Zell, M. T.; Padden, B. P.; Munson, E. J. "An alternative interpretation of the HETCOR NMR spectra of poly(lactide)", *Chem. Comm.* **1998**, 1913.
34. Skoog, S. J.; Jorgenson, A.L.; Campbell, J. P.; Douskey, M. L.; Munson, E. J.; Gladfelter, W. L. "Structure and Reactivity of the Zero-Valent Ruthenium Complex $\text{Ru}(1,2\text{-bis}(\text{diphenylphosphino})\text{ethane})(\text{CO})_3$ and the Dicationic Ruthenium Dimer $[\text{Ru}_2(1,2\text{-bis}(\text{diphenylphosphino})\text{ethane})_2(\text{CO})_6]^{2+}$ ", *J. Organomet. Chem.* **1998**, *557*, 13-28.
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