

CURRICULUM VITAE

RICHARD A. YOST

(April 2017)

Colonel Allen R. and Margaret G. Crow Professor
Head of Analytical Chemistry, Department of Chemistry
Professor of Pathology, Immunology, and Laboratory Medicine
Professor of Natural Resources and the Environment
Director, Southeast Center for Integrated Metabolomics
Professor of Pathology, University of Utah

University of Florida
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2155 N.W. 3rd Place
Gainesville, FL 32603-1513
Phone - (352)375-4599

Personal Data

Born May 31, 1953, Martins Ferry, Ohio
Married, one daughter and two sons

Education

1971-1974 University of Arizona, B.S. Chemistry
1975-1979 Michigan State University, Ph.D. Analytical Chemistry

Experience

1977 Research at LaTrobe University, Victoria, Australia
1979-1983 Assistant Professor of Chemistry, University of Florida
1983-1989 Associate Professor of Chemistry, University of Florida
1986 Sabbatical, Army Chemical Research and Development Center
1989-present Professor of Chemistry, University of Florida
1993-present Professor, UF School of Natural Resources and Environment
1994-2000, 2006-Head, Analytical Chemistry Division, University of Florida
1999-2001 Fellow & Advisory Board Member, Institute for Science and Health Policy, UF
1999-present Founding Member, William R. Maples Center for Forensic Science, UF
2001 Associate Dean for Research, College of Liberal Arts & Sciences, UF
2001-present Member, Center for Research at the Bio/Nano Interface, UF
2001-present Senior Member, UF Health Cancer Center
2006-2009 Chair Elect, Chair, and Past Chair, Faculty Senate, UF
2006-2010 Vice Chair and Member, Advisory Council of Faculty Senates of Florida
2007-2008 Member, Board of Trustees, UF
2007-present Member, Emerging Pathogens Institute, UF
2010-2011 Robin and Jean Gibson Term Professor, College of Liberal Arts & Sciences
2010-2012 Chair, Advisory Council of Faculty Senates of Florida
2010-2012 Member, Florida Board of Governors, State University System
2012-2014 Past Chair, Advisory Council of Faculty Senates of Florida
2012 Visiting Pathologist, University of Utah, ARUP (Sabbatical)
2013-2015 Co-Director, Southeast Center for Integrated Metabolomics (NIH)
2013-present Professor of Pathology, University of Utah and ARUP
2014-present Professor of Pathology, Immunology, and Laboratory Medicine, UF
2015-present Colonel Allen R. and Margaret G. Crow Professor
2015-present Director, Southeast Center for Integrated Metabolomics (NIH)

Honors and Awards

1975-1979	NSF Graduate Fellow
1975-1979	L.L. Quill Fellow
1977-1978	ACS Analytical Division Fellow
1993	ASMS Award for Distinguished Contribution to Mass Spectrometry
2015-2016	UF Doctoral Dissertation Mentoring/Advising Award

Societies

1974-	Phi Beta Kappa
1974-	Phi Kappa Phi
1974-	Member, American Chemical Society
1976-	Member, American Society for Mass Spectrometry
1997-1999	Secretary, American Society for Mass Spectrometry
1998-	Founding Member, International Mass Spectrometry Society
1990-	Founding Member, NA Chapter of the International Chemometrics Society
2008-2010	Treasurer, American Society of Mass Spectrometry
2016-2018	Vice President for Programs, American Society for Mass Spectrometry
2018-2020	President, American Society for Mass Spectrometry
2020-2022	Past President, American Society for Mass Spectrometry

Research Interests

Fundamentals, instrumentation, and applications in analytical chemistry. Development of new mass spectrometric and ion mobility instrumentation and techniques, and the application of these techniques in areas such as biomedical, pharmaceutical, environmental, petrochemical, and forensic chemistry. Metabolomics and clinical chemistry.

Teaching Experience

MSU - General, Organic, Quantitative Analysis, Thermodynamics, Graduate Electronics Laboratory

UF - Instrumental Analysis, Instrumental Analysis Laboratory, Quantitative Analysis, Analytical Seminar, Computerized Instrumentation and Electronics, Chemometrics, Special Topics (Advances in Mass Spectrometry), Mass Spectrometric Methods, Consumer Chemistry ("Chemistry for Poets"), General Chemistry II Honors

Short Courses - Modern Analytical Chemistry (UF) 1983, 1984, 1985, 1986, 1987, 1988
Tandem Mass Spectrometry (Purdue) 1983
Recent Advances in Mass Spectrometry (SAS-FACSS Meeting) 1984, (Army CRDEC) 1986
Practical LC/MS and MS/MS (Sweden) 1987
Practical MS/MS Analysis (ASMS Meeting) 1988, 1989, 1990, 1993, 1994, 1995, 1996
(Pittcon) 1990, 1992, 1993, 1994, 1995, (Amsterdam) 1991
Choices in Mass Spectrometry (Pittcon) 1989
Quadrupole Ion Trap Mass Spectrometry: Fundamentals and Practice (Pittcon) 1996, 1997, 1998, (Society for Analytical Chemistry of Pittsburgh) 1996
LC/MS, GC/MS and MS/MS with Quadrupole Ion Trap Mass Spectrometers (Pittcon) 1999, 2000, 2001, 2002, 2003, 2004

Undergraduate Research Assistants

1. Marshall Reel (1980 – 1981)
2. Eric Joffre (1983 – 1984)
3. Cynthia Fenn (1984)
4. Mark Bolgar (1985 – 1986)
5. Brent Kleintop (1987)
6. Susan Adkins (1987 – 1988)
7. Carol L. Daniels (1993)
8. Karl Kuchma (1993 – 1994)
9. Georgie Kovacs (1995 – 1996)
10. Jeremy Edwards (1996 – 1997)
11. Douglas F. Stewart (1997 – 1998)
12. Andria Hobbs (1997 – 2000)
13. Matt Holden (1998 – 1999)
14. Matthew H. Merves (2003)
15. Evan MacDonald (2005 – 2006)
16. Jessica Ocariz (2005 – 2006)
17. Ashley Bartczak (2005 – 2006)
18. Jennifer Webber (2006)
19. Laura Templeton (2006 – 2007)
20. Cara Capitena (2007 – 2008)
21. Nathaniel Gomer (2007 – 2008)
22. Dominic Colosi (2007 – 2008)
23. Diana Mora-Montero (2007 – 2008)
24. Kasia Cudzilo (2007 – 2008)
25. Kyle Cromwell (2008 – 2010)
26. Sara M. Costello (2009)
27. Carly Ferguson (2009)
28. Vivian Cornélio (2009)
29. Fernanda Sales Figuiero (2009)
30. Steve Almodovan (2009 – 2010)
31. Kerolyn deSouza Valente (2010 – 2011)
32. Bill Kipersztok (2010)
33. Gabriela C. Miguel (2010 – 2011)
34. William P. Mounfield (2010 – 2012)
35. Rupal Bhana (2011 – 2012)
36. Raquelle Hendershot (2011 – 2013)
37. Katelyn Bobeck (2011 – 2014)
38. Robin Kemperman (2014)
39. Antoine Ducrocq (2014)
40. Jordan Zeldin (2014)
41. Jordan Clear (2014)
42. Mathew Kazaleh (2014 - 2016)
43. Danielle McDougall (2014 – 2015)
44. Harrison King (2014 – 2016)
45. Nicholas Kroeger (2015- 2016)
46. Liz Ransom (2015 - 2016)
47. Megan Marks (2016 – 2017)
48. Christopher Gongar (2016 -)
49. Nicolas Azcarate (2016 -)
50. Berkley Olsen (2016 -)
51. Michelle Palumbo (2016 -)
52. Ryan Wortman (2016 -)

High School Research Assistants

1. Danith Ly (1989)
2. Chris Wheeler (1989)
3. Chris Bray (1992)
4. Mark Haney (1994)
5. Michael Akers (1994)
6. Yan-Ping Qi (1995)
7. Carla Crawford (1995-1996)
8. Tuan Truong (1996)
9. Samantha Hersman (2007)

Graduate Research Assistants

1. Dean D. Fetterolf, Ph.D. (1978 - 1982)
2. Harry O. Brotherton, Ph.D. (1978 - 1982)
3. Susan V. Hummel, (1978 - 1983)
4. Jodie V. Johnson, Ph.D. (1980 - 1984)
5. Robert J. Perchalski, Ph.D. (1980 - 1985)
6. Michael L. Trehy, Ph.D. (1981 - 1984)
7. Edward D. Britton, M.S. (1981 - 1985)
8. Mary Beth Budd, M.S. (1981 - 1984)
9. Mike S. Lee, M.S. (1982 - 1985), Ph.D. (1985 - 1987)
10. Chin-Shyan Roan, M.S. (1982 - 1985)
11. Maw-Rong Lee, M.S. (1983 - 1985)
12. Kenneth P. Matuszak, Ph.D. (1983 - 1987)
13. Michael J. Gehron, Ph.D. (1983 - 1987)
14. David W. Berberich, Ph.D. (1984 - 1988)
15. Todd A. Gillespie, Ph.D. (1984 - 1988)
16. Mark E. Hail, Ph.D. (1984 - 1988)
17. Brian D. Beato, Ph.D. (1985 - 1989)
18. Kevin J. Volk, Ph.D. (1985 - 1989)
19. Randall E. Pedder, Ph.D. (1985 - 1992)
20. Jody A. Freeman, Ph.D. (1986 - 1991)
21. Stacy-Ann Rossi, Ph.D. (1987 - 1991)
22. Ulrich R. Bernier, M.S. (1987 - 1992), Ph.D. (1992 - 1995)
23. Anthony P. Annacchino, Jr., Ph.D. (1988 - 1993)
24. Nathan A. Yates, Ph.D. (1988 - 1994)
25. Cecilia Basic, Ph.D. (1988 - 1992)
26. Brent L. Kleintop, Ph.D. (1988 - 1993)
27. Rafael R. Vargas, Ph.D. (1988 - 1993)
28. Donald M. Eades, Ph.D. (1989 - 1993)
29. Brad I. Coopersmith, Ph.D. (1989 - 1994)
30. John D. Laycock, Ph.D. (1989 - 1994)
31. William A. VanAusdale, M.S. (1989 - 1994)
32. Jon A. Jones, Ph.D. (1989 - 1995)
33. James L. Stephenson, Jr., Ph.D. (1990 - 1995)
34. Matthew M. Booth, Ph.D. (1991 - 1996)
35. Charles J. Schmidt, (1991 - 1998)
36. Timothy P. Griffin, Ph.D. (1991 - 1995)
37. James A. Ferguson, Ph.D. (1991 - 1996)
38. Stephen M. Boué, Ph.D. (1992 - 1997)
39. Jon P. DeGnore, Ph.D. (1992 - 1997)
40. Christopher D. Reddick, Ph.D. (1992 - 1997)

41. Maria del Pilar Ospina, Ph.D. (1993 - 1998)
42. Scott T. Quarmby, Ph.D. (1993 - 1997)
43. Tracie L. Williams, Ph.D. (1993 - 1997)
44. Shannan M. Carlson, M.S. (1993 - 1995)
45. George B. Guckenberger, V, Ph.D. (1993 - 1998)
46. Valerie A. Landrio, M.S.T. (1994 - 1996)
47. Maria Alejandra Rodriguez, Ph.D. (1994 - 1999)
48. Joseph E. McClellan, Ph.D. (1995 - 2000)
49. Fredrick J. Troendle, Ph.D. (1996 - 2000)
50. Joseph J. Mulholland, Ph.D. (1996 - 2000)
51. Kevin J. McHale, Ph.D. (1997 - 2002)
52. James P. Murphy III, Ph.D. (1997 - 2002)
53. Todd Huml, (1998 - 2001)
54. Michael W. Belford, Ph.D. (1998 - 2002)
55. Richard F. Reich, M.S. (1999 - 2001)
56. Gisele Zamperlini, (1999 - 2001)
57. Leonard C. Rorrer, III, M.S. (1999 - 2002)
58. Alisha C. Mitchell-Roberts, Ph.D. (2000 - 2005)
59. William J. Perella, M.S. (2001 - 2003)
60. Timothy J. Garrett, Ph.D. (2001 - 2006)
61. Samaret M. Otero, Ph.D. (2001 - 2006)
62. Christopher K. Hilton, Ph.D. (2002 -)
63. Hong Yu, Ph.D. (2002 - 2006)
64. Hidee L. Aponte, M.S. (2002 - 2004)
65. Frank A. Kero, Ph.D. (2003 - 2008)
66. PingPing Her (2003 - 2004)
67. John A. Bowden III, Ph.D. (2003 - 2008)
68. Dodge Baluya, Ph.D. (2003 - 2008)
69. Catherine Yu. (2004 - 2005)
70. Jennifer A. Garrett, M.S. (2004 - 2008), Ph.D. (2008)
71. Rachelle R. Landgraf, Ph.D. (2004 - 2008)
72. Michael P. Napolitano, Ph.D. (2004 - 2013)
73. Austin L. Turner (2005 - 2007)
74. Daniel Magparangalan, Ph.D. (2005 - 2010)
75. Erick F. Molina-Rojas, Ph.D. (2005 -)
76. Jared J. Boock, M.S. (2005 - 2007)
77. Soledad Cerutti, M.S. (2005 - 2007), Ph.D. (2007 - 2009)
78. Marilyn Prieto, PhD (2006 - 2010)
79. David Pirman, PhD (2006 - 2011)
80. Alex Wu, PhD (2006 - 2009)
81. Leonard C. Rorrer, III, Ph.D. (2007 - 2010)
82. Richard F. Reich, Ph.D. (2007 - 2010)
83. Kyle Lunsford, Ph.D. (2007 - 2011)
84. Robert Menger, Ph.D. (2008 - 2013)
85. Chia-Wei Tsai, Ph.D. (2008 - 2015)
86. Whitney Stutts, Ph.D. (2008 - 2013)
87. Noelle Elliot, Ph.D. (2008 - 2012)
88. Jacina Redden M.S. (2008 - 2010)
89. Hillary Lathrop, Ph.D. (2010 - 2013)
90. Manasi Mangaonkar M.S. (2010 - 2012), Ph.D. (2012 - 2015)
91. Elizabeth Muffly, Ph.D. (2010 - 2015)
92. Emily V. O'Neill, Ph.D. (2010 - 2014)
93. Michael Costanzo, Ph.D. (2010 - 2015)

94. Yu-Hsuan Tsai, Ph.D. (2010 -2015)
95. Ahmed Moghieb, Ph.D. (2010 -2015)
96. Jared J. Boock, Ph.D. (2011 - 2015)
97. Rainey Patterson, Ph.D. (2011 - 2016)
98. Christopher Beekman, Ph.D. (2011 - 2015)
99. Christopher Chouinard, Ph.D. (2012 - 2016)
100. Candice A. Ulmer, Ph.D. (2012 - 2016)
101. Michelle Reid, Ph.D. (2013 -)
102. Louis Searcy, Ph.D. (2013 -)
103. Jeremy Koelmel, Ph.D. (2013 -)
104. Michael Wei, Ph.D. (2013 -)
105. Emily L. Gill, Ph.D. (2014 -)
106. George A. Sarkis, Ph.D. (2014 - 2017)
107. Robin Kemperman, Ph.D. (2015 -)
108. Nicholas R. Oranzi, Ph.D. (2015 -)
109. Allison J. Levy, Ph.D. (2015 -)
110. Hamad A. Yadikar, Ph.D. (2015 -)
111. Taylor Domenick, Ph.D. (2016 -)
112. Jiajun Lei, Ph.D. (2016-)
113. Russell Lewis, Ph.D. (2016 -)
114. Vanessa Rubio, Ph.D. (2016 -)

Postdoctoral Associates

1. Michael L. Trehly (1984 - 1985)
2. Jodie V. Johnson (1984 - 1997)
3. Joseph S-C. Chang (1988 - 1989)
4. Matthew M. Booth (1997 – 1999)
5. Wells Wu (2000 - 2002)
6. Michael W. Belford (2002)
7. Alisha C. Mitchell-Roberts (2005 – 2006)
8. Timothy J. Garrett (2006)
9. Robert Menger (2013)
10. Christopher Beekman (2015)

Visiting Scientists

1. Robert J. O'Brien, Portland State University (1981 - 1982)
2. Roger Guevremont, National Research Council (Canada) (1985 - 1986)
3. Capt. John C. Anders, Walter Reed Army Institute of Research (1986)
4. Douglas W. Kuehl, US EPA Environmental Research Laboratory (1986 - 1987)
5. Jehuda Yinon, Weizmann Institute (Israel) (1993 - 1994, 1997, 1998)
6. Sue Silverton, Pennsylvania Medical Center (1993)
7. Ping-Chung Kuo, National Formosa University (2008)
8. Li Hua, Guilin University (2017)

Grants and Contracts

1979-1982 \$10,000	ACS Petroleum Research Fund "Direct Determination of Fragmentation Pathways by Triple Quadrupole Mass Spectrometry"
1979-1980 \$4,250	UF Division of Sponsored Research "Field Desorption and Ionization Sources for Quadrupole Mass Spectrometry"
1980 \$3,000	UF Division of Sponsored Research "Mass Spectrometry Development"
1980-1981 \$4,000	UF Division of Sponsored Research "Triple Quadrupole Mass Spectrometry for Analysis of Explosives Vapors and Residues"
1980-1983 \$233,000	National Science Foundation "Triple Quadrupole MS/MS for Direct Mixture Analysis"
1981 \$3,500	UF Division of Sponsored Research "Development of High Sensitivity Ion Sources"
1981-1982 \$8,000	NIH Biomedical Research Support Grant "Study of Epileptic Brain Dysfunction by Laser Microprobe Mass Spectrometry"
1981-1982 \$2,000	Hooker Research Center "MS/MS for Trace Analysis of Organics in Blood and Urine"
1982-1983 \$9,500	Texas Air Control Board "Analysis of Environmental Samples by GC/MS and GC/MS/MS"
1982-1983 \$30,000	Florida STAR Program (with John J. McCreary) "The Fate of Industrial Organic Compounds in Drinking Water Aquifers"
1983 \$2,000	UF Division of Sponsored Research "Pesticide Multiresidue Analysis by Tandem Quadrupole Mass Spectrometry"
1984 \$4,452	UF Division of Sponsored Research "Triple Quadrupole MS/MS for Mixture Analysis"
1984-1985 \$48,893	Environmental Protection Agency "Water Disinfection By-Products and Pathways Resulting from Chlorination of Nitrogenous Substances in Natural Waters"
1984-1985 \$14,987	Naval Research Laboratory "Analysis of LSD in Urine by MS/MS"
1984-1985 \$12,500	Lederle Laboratories "Research in Tandem Mass Spectrometry"

Grants and Contracts - continued

1984-1987 \$568,903	Air Force Engineering and Service Center "Development of a Portable Tandem Mass Spectrometric Analyzer"
1985 \$1,000	National Science Foundation "Travel to International Mass Spectrometry Conference"
1985-1988 \$303,477	Army Chemical Research and Development Center "Florida CRDC Technology Center" (Overall Center \$1,932,500)
1985-1986 \$12,500	American Cyanamid "Research in Tandem Mass Spectrometry"
1986-1987 \$24,665	Army Chemical Research and Development Center "Sabbatical Leave Support"
1986-1987 \$30,600	Pratt and Whitney "Development of Advanced Methodologies: Properties of Aircraft Fuels"
1986 \$8,000	Lawrence Livermore National Laboratory "Analysis of Trace Biomarkers in Oil Shale"
1987-1989 \$147,800	Army Chemical Research and Development Center "Ion Trap Tandem Mass Spectrometry"
1986-1988 \$50,000	Exxon (with A.R. Katritzky) "Research Agreement"
1987 \$59,450	Teledyne CME "Evaluation of the Ion Trap Tandem Mass Spectrometer"
1987-1988 \$25,170	Florida Department of Business Regulation "MS/MS for Illicit Drug Screening"
1987-1988 \$6,000	Nutriclean "New Methods for Determination of Pesticide Residues in Foods"
1987-1988 \$2,500	Merrell Dow Research Institute "Trace Measurement of Prostaglandins"
1987-1988 \$3,000	American Cancer Society (with S. Normann) "MS/MS Studies - Lymphocyte Inhibition"
1988 \$7,041	UF Division of Sponsored Research "MS/MS Studies of the Stability of Potential Cancer Phototherapy Agents"
1988-1989 \$6,545	UF Division of Sponsored Research "Development of New Instrumental Methods for the On-Line Identification of Drug Metabolites"

Grants and Contracts - continued

1988-1991 \$906,938	Joint Enterprise for Advanced Aerospace Research (NASA/Finnigan) "Miniaturization of Mass Spectrometric Systems for NASA Manned Space Environments"
1989-1991 \$50,000	Sandoz Research Institute "Analytical Ion Trap Mass Spectrometry"
1989-1990 \$6,000	Alcoa "Tandem Mass Spectrometry Research"
1989-1990 \$11,200	NutriClean "Trace Analysis of Natural Sulfur Fungicides"
1990-1991 \$4,168	Florida Space Grant Consortium "Space Assistantship Enhancement"
1990 \$4,168	UF Division of Sponsored Research "Space Life Support Monitoring by Mass Spectrometry and Artificial Intelligence"
1990-1994 \$231,580	Environmental Protection Agency-ERL Duluth "Novel Integrated Instrumental Approach to Identifying Toxic and Bioaccumulatable Compounds in Hazardous Wastes"
1990-1994 \$483,661	Environmental Protection Agency-EMSL Cincinnati "LC/MS and MS/MS in the Quadrupole Ion Trap"
1990 \$5,000	Alcon Laboratories "Identification of Pharmaceutical Degradation Products by MS/MS"
1990 \$2,000	Florida Department of Environmental Regulation "Environmental Polymer Analysis by MS/MS"
1991-1993 \$31,000	Bristol-Myers Squibb Pharmaceutical Research Institute "Laser Microprobe MS/MS"
1991 \$4,810	UF Division of Sponsored Research "Chiral Ion-Molecule Reactions in the Quadrupole Ion Trap"
1991 \$4,480	Florida Department of Environmental Regulation "Fenholloway River Analyses"
1991-1995 \$58,500	US Department of Agriculture "Identification of Human Mosquito Attractants"
1991-1994 \$38,000	UF Food Science and Human Nutrition "Fatty Acid Analysis by Ion Trap GC/MS"
1991-1992 \$25,000	Sandoz Research Institute "Isotope Ratio Quantitation with Ion Trap GC/MS"

Grants and Contracts - continued

1991-1992 \$15,000	Monsanto Environmental Sciences Center "Ion Trap MS/MS Software Development"
1992 \$80,000	NASA Ames Research Center "Ion Trap MS/MS Automation and Artificial Intelligence"
1992-1994 \$6,000	Vistakon/Johnson & Johnson "Analytical Applications of MS/MS"
1992 \$4,953	UF Division of Sponsored Research (co-PI with J.V. Johnson) "Matrix-assisted Laser Desorption Quadrupole Ion Trap Mass Spectrometry"
1993-1994 \$75,082	NASA Ames Research Center "Basic and Applied Research on Ion Trap Mass Spectrometric Systems"
1993 \$3,467	UF Division of Sponsored Research "MS/MS Characterization of Photodynamic Therapy Agents"
1993-1996 \$36,000	Florida Space Grant Consortium "Ion Trap Mass Spectrometry for Aerospace Applications"
1994 \$8,600	UF Division of Sponsored Research "Basic and Applied Research on Ion Trap Mass Spectrometric Systems"
1994 \$50,000	UF Division of Sponsored Research/College of Liberal Arts & Sciences Research Assistantships
1995-1996 \$27,500	Sandoz Research Institute "Electrospray/Ion Trap LC/MS/MS"
1995-2000 \$170,000	Bristol-Myers Squibb Pharmaceutical Research Institute "Laser Microprobe Quadrupole Ion Trap Mass Spectrometry"
1995-2000 \$189,000	US Department of Agriculture "Analysis of Human and Host Animal Emanations for the Presence of Attractants to Hematophagous Diptera"
1996-2001 \$152,000	Finnigan MAT "GC/MS/MS on the Quadrupole Ion Trap"
1994-1997 \$37,000	Alcoa (co-PI with J.V. Johnson) "Tandem Mass Spectrometry Analysis"
1997-1998 \$14,000	UF CLAS Research Initiative "Mass Spectrometric Investigations of Structure, Conformation, and Noncovalent Binding of Proteins"
1997-2000 \$36,000	Florida Space Grant Consortium "Polymer Characterization and Elucidation by Mass Spectrometry"

Grants and Contracts - continued

1998-2002	American Waterworks Association Research Foundation (co-PI with G. Henderson)
\$298,356	"Development of Methods for the Analysis of DBPs in Biological Samples and Their Application to Human Kinetics and Metabolism Studies"
1998-1999	UF Opportunity Fund (co-PI with W. Buhi)
\$118,600	"Formation of a Contraceptive Drug Discovery Group"
1998-2001	U.S. Environmental Protection Agency (Co-PI with G. Henderson)
\$566,291	"Human Kinetics and Metabolism of Disinfection By-Products of Water Chlorination"
1998-2000	NATO (Co-PI with F. Volk and J. Yinon)
\$8,200	"Origin Identification of Explosives Related to Terrorist Activities"
1999	UF CLAS Research Initiative
\$10,000	"Investigation of Higher Order Structure of Biological Macromolecules in Vitro and in Vacuo by Mass Spectrometry"
1999-2000	UF University Scholars Program (Fellowship for Andria Hobbs)
\$2,500	"GC/MS/MS for Analysis of Cocaine in Hair"
1999-2003	National Institutes of Health (Co-PI with P. Stacpoole)
\$172,794	"Dichloroacetate Kinetics, Metabolism, and Human Toxicology" (overall grant \$1,347,947 direct)
2000-2005	US Department of Agriculture
\$282,475	"Identification of Chemicals from Human and Animal Hosts that Attract Mosquitoes and Other Blood-sucking Arthropods"
2000-2003	NASA Kennedy Space Center (NASA Graduate Student Research Program)
\$66,000	"High Performance Mass Spectrometry with a Miniature Ion Trap for Biological and Environmental Monitoring"
2000-2001	NASA Kennedy Space Center/Dynacs
\$29,997	"Design of a Miniature Ion Trap Mass Spectrometer for Launchpad Monitoring"
2000-2001	Florida Space Grant Consortium
\$10,000	"Miniature Ion Trap Mass Spectrometer for Space-related Biological and Environmental Monitoring"
2000-2001	NIEHS Superfund Research Program
\$17,000	"Laser Microprobe Mass Spectrometry for Mapping Xenobiotics and Biotransformation Products in Intact Tissue"

Grants and Contracts - continued

2000-2001 \$30,000	Bristol-Myers Squibb Pharmaceutical Research Institute "High Sensitivity LC and CE/ESI/MS/MS"
2001-2003 \$209,408	TSWG/US Secret Service (Co-PI with Ian Tebbett) "Reproducibility of Estimates of the Age of Inks"
2002 \$30,000	Finnigan MAT "New Strategies for Laser Desorption on the Quadrupole Ion Trap"
2002-2003 \$41,672	NIEHS Supplement (Co-PI with Peter Stacpoole) "Mechanisms of Peripheral Neuropathy"(overall grant \$200,000)
2003 \$30,000	Thermo-Finnigan "Fundamental Studies of FAIMS and the Quadrupole Ion Trap"
2003-2004 \$60,000	Ionalytics, Inc. "Studies of Atmospheric Pressure Laser Desorption Coupled to High-Field Asymmetric Waveform Ion Mobility Spectrometry (FAIMS)"
2004-2009 \$270,508	NIH (Co-PI with Peter Stacpoole) "Dichloroacetate Kinetics, Metabolism, and Toxicology" (overall grant \$2,985,769)
2004 \$7,500	University of Miami, College of Medicine "LC/FAIMS/MS Studies in Cystic Fibrosis Biomarkers"
2004-2007 \$130,000	Thermo-Finnigan "Development and Testing of a New Hybrid Linear Ion Trap/Time-of-Flight Mass Spectrometer for Laser Microprobe Analysis"
2005–2008 \$1,967,000	Homeland Security Advanced Research Projects Agency "Real-Time Multispectral Detection of Improvised Explosives Devices"
2006-2008 \$50,000	NIH (Co-PI with Gregory Conner at U Miami) "Regulation of Airway Lactoperoxidase Host Defense – ESI/FAIMS/MS/MS Subcontract" (overall grant \$1,382,170)
2006-2010 \$60,000	Bristol-Myers Squibb "Laser Microprobe Mass Spectrometry Technique Development: Tissue Analysis, Imaging and Quantitative Performance"
2006-2011 \$172,000	US Department of Agriculture "Development of Portable Devices for Detection and Quantification of Insecticides, Repellents, and Inhibitors"
2007-2013 \$510,068	National Science Foundation/OISE (Co-PI with M.T. Rodgers and J.R. Eyler) "PIRE: A US-Dutch Mass Spectrometry Consortium for Advanced Modeling and Biological Structure and Imaging Applications" (Overall grant \$2,500,000)

Grants and Contracts - continued

2007-2011 \$285,000	National Science Foundation (PI with H.H. Hill, Jr.) "Novel Technologies for Ion Mobility and Mass Spectrometry for the Detection of Improvised Explosive Devices (IEDs)"
2007-2011 \$339,179	DOE (Co-PI with G. Peter) "Integrated Nondestructive Spatial and Chemical Analysis of Lignocellulosic Materials during Pretreatment and Bioconversion to Ethanol" (Overall grant \$1,100,000)
2008-2011 \$110,000	Thermo Scientific "Imaging Mass Spectrometry and FAIMS: Fundamental and Instrumental Studies"
2008-2010 \$24,800	UF Clinical and Translational Science Institute Grant (Co-PI with Timothy Garrett) "Development of a MALDI Hybrid Linear Ion Trap/Time-of-Flight Imaging Mass Spectrometer"
2008-2009 \$70,708	UF Clinical and Translational Science Institute Grant (Co-PI with David Powell) "Innovations in Metabolomics Methodology"
2009-2010 \$50,000	US Department of Homeland Security "Electrospray/APCI Ion Mobility Mass Spectrometer for Quantitative AN/UN Analysis" (Overall grant \$449,992)
2012-2013 \$40,000	Agilent Scientific "Micro FAIMS/Triple Quad MS: Instrumental Studies and Analytical Capabilities"
2013-2018 \$9,056,198	NIH Common Fund "Southeast Center for Integrated Metabolomics"
2014-2017 \$262,727	Agilent Scientific "Developments in Ion Mobility and Mass Spectrometry for Clinical, Lipidomics, and Metabolomics Applications"
2014-2018 \$265,592	Wellspring, Inc. "Clinical Applications of Mass Spectrometry"
2015-2017 \$160,914	Cannabix, Inc. "FAIMS Breathalyzer"
2015-2017 \$255,287	Breathtec, Inc. "FAIMS for Breath Testing"
2015-2017 \$20,000	Prosolia "Flow Probe for Clinical Analysis"

Grants and Contracts - continued

2015-2017 \$10,000	Gainesville Police (PI with Kari Basso) "Compound Identification for K9 Detection"
2015-2020 \$25,000,000	NIH (Co-PI with David R. Nelson) "CTSI- Together: Transforming and Translating Discovery to Improve Health"
2016-2018 \$150,000	NIH (Co-PI with Cuong Nguyen) "Development of Single-Cell Metabolomics"
2016-2017 \$141,144	Partnership for Clean Competition "Ion Mobility – Mass Spectrometry for Improved Analysis of Endogenous Anabolic Steroids"
2017-2018 \$150,000	American Heart Association (co-PI with Laura Musselman) "Identification of Toxic Lipid Species in the Heart"

Proposals Submitted

2016-2022 \$20,004,407	NIH (PI with Glenn Walter) "Center for Transducer Identification and Discovery (CTID)"
2016-2018 \$1,003,098	Bankhead-Coley Cancer Research Program (Co-PI with Maryann Rahman) "Imaging of Cellular Traffic in Dendritic Cell Therapy for Brain Tumors"
2017-2018 \$600,000	NIH S10 program (co-PI with Tim Garrett) "Imaging Tandem Mass Spectrometer with High Spatial and Mass Resolution"
2017-2018 \$150,000	DARPA (co-PI with Champak Das) "Real-time Assessment of Antimicrobial Concentrations for Personalized Treatment of Infectious Diseases"
2017-2020 \$1,164,904	Neuroendocrine Tumor Research Foundation (NETRF) "The MYC/MAX/HIF Pathways: Changing the Paradigm in Neuroendocrine Cancers"
2017-2018 \$100,000	NIH "Integration of Metabolomics with Other Omics Data"
2017-2019 \$275,000	NIH (Co-PI with Michael Costanzo) "Development of a Novel FAIMS and FAIMS/MS Based System for Diagnostic Screening of Diabetes Mellitus Using Human Exhaled Breath"
2017-2019 \$275,000	NIH (Co-PI with Michael Costanzo) "Development of a Novel FAIMS and FAIMS/MS Based System for Diagnostic Screening of Infectious Respiratory Diseases Using Human Exhaled Breath"
2017-2020 \$287,088	Agilent Scientific "Developments in Ion Mobility and Mass Spectrometry for Clinical, Lipidomics, and Metabolomics Applications"

Scientific Advisory Boards

Wellspring Clinical Lab (2010 -)
Mozaic Solution (2014 -)
Breathtec Biomedical (2015 -)
IROA Technologies (2016 -)

Consulting

Lawrence Livermore National Laboratories (1980 - 1984)
Finnigan MAT Corporation (now Thermo Scientific) (1980 -)
Bendix Environmental Systems Division (1985 - 1986)
Bristol-Myers Squibb (1989 -)
Wellspring Clinical Lab (2010 -)
Agilent Scientific (2012 -)
Mozaic Solutions (2014 -)
Breathtec Biomedical (2016 -)
Cannabix Technologies (2016 -)
IROA Technologies (2016 -)

Reviewing

National Science Foundation
National Institutes of Health, Biomedical Engineering and Technology Study Section,
Metallobiochemistry Study Section
NASA Advanced Environmental Monitoring Review Panel
Army Research Office
Department of Energy
Environmental Protection Agency
National Institute of Space Biomedical Research
Natural Science and Engineering Research Council of Canada
International Science Foundation
Analytical Chemistry
Analytical Instrumentation
Analytical Letters
Analyst
Biochromatography
Biomedical and Environmental Mass Spectrometry
Chemical Reviews
International Journal of Mass Spectrometry
Journal of the American Chemical Society
Journal of Chemical Education
Journal of Analytical and Applied Pyrolysis
Journal of the American Society for Mass Spectrometry
Journal of Mass Spectrometry
Journal of Physical Chemistry
Organic Mass Spectrometry
Talanta

Conference Organization

Session Organizer, Gordon Conference on Analytical Chemistry, 1985
Symposium Organizer, Eastern Analytical Symposium, 1985
Symposium Organizer, Southeast Regional ACS Meeting, 1987
Mass Spectrometry Program Chairman, FACSS Meeting, 1988, 1989
Symposium Organizer, Pittsburgh Conference on Analytical Chemistry, 1989
Symposium Organizer, ASMS Annual Conference, 1989
Chairman, ASMS Ion Trap Interest Group, 1995-97
Symposium Organizer, Pittsburgh Conference on Analytical Chemistry, 1996
Symposium Organizer, Pittsburgh Conference on Analytical Chemistry, 1998
Findeis Award Symposium Organizer, Eastern Analytical Symposium, 1998
Symposium Organizer, Pittsburgh Conference on Analytical Chemistry, 1999
Symposium Organizer, Pittsburgh Conference on Analytical Chemistry, 2001
Symposium Organizer, Pittsburgh Conference on Analytical Chemistry, 2004
Founding Chairman, ASMS Ion Mobility Interest Group, 2004
Symposium Organizer, Pittsburgh Conference on Analytical Chemistry, 2005
Founding Chairman, ASMS Mass Spectrometric Imaging Interest Group, 2007
Symposium Organizer, Pittsburgh Conference on Analytical Chemistry, 2007
Symposium Organizer, Pittsburgh Conference on Analytical Chemistry, 2011
Symposium Organizer, Pittsburgh Conference on Analytical Chemistry, 2013
Symposium Organizer, Pittsburgh Conference on Analytical Chemistry, 2014
Symposium Organizer, ASMS Annual Conference, 2014
Symposium Organizer, Pittsburgh Conference on Analytical Chemistry, 2015
Symposium Organizer, Pittsburgh Conference on Analytical Chemistry, 2016
Vice President for Programs, ASMS 2016-2018

Offices and Committees

Past President, American Society for Mass Spectrometry 2020-2022
President, American Society for Mass Spectrometry 2018-2020
Vice President for Programs, American Society for Mass Spectrometry 2016-2018
Treasurer, American Society for Mass Spectrometry, 2008-2010
Secretary, American Society for Mass Spectrometry, 1997-1999
Scientific Advisory and Review Board, Lawrence Livermore National Laboratory, Chemistry and Materials Science, 1995-2003
Award Committee, American Chemical Society Field and Franklin Award for Outstanding Achievement in Mass Spectrometry, 1986-1988
Award Committee, American Chemical Society Chemical Instrumentation Award, 1987-1989; Chairman, 1988-1989
Award Committee, American Society for Mass Spectrometry Research Award, 1987-1990
Award Committee, American Society for Mass Spectrometry Awards, 1996-1999
Florida Society for Environmental Analysts/Florida Department of Environmental Protection, Committee on Detection Limits, 1992
Nominating Committee, American Society for Mass Spectrometry, 1993-1995
National Nominations Board, Outstanding Young American Awards, 1996-2001

Editorial Boards

The Journal of the American Society for Mass Spectrometry, 1989-1997
International Journal of Mass Spectrometry, 1996-present

Guest Editor

Guest Editor, *International Journal of Mass Spectrometry*, Ion Mobility/Mass Spectrometry special issue, 2010

Biographical Listings

Men of Achievement (England)
American Men and Women of Science
Outstanding Young Men of America
International Directory of Distinguished Leadership
Personalities of the South
Personalities of the Americas
Strathmores Who's Who
International Who's Who
Who's Who in the South and Southwest
Who's Who of Emerging Leaders in America
Who's Who Among Young American Professionals
Who's Who in American Education
Who's Who in Sciences Higher Education
Who's Who in Society
Who's Who in America
Who's Who in the World

Service for the University and College

Director, Southeast Center for Integrated Metabolomics, 2015 -
UF Presidential Search Committee and Co-Chair, Campus Visit Subcommittee, 2014-2015
UF Honorary Degrees, Distinguished Alumnus Awards & Memorials Committee, 2014 –,
Chair 2015-2017
UF Research Policy Committee, 2014 -
Search Committee Chair, Department of Medical Chemistry Chair, 2014 – 2015
Search Committee Co-Chair, Preeminence Hires in Metabolomics 2013 - 2015
Co-Director, Southeast Center for Integrated Metabolomics, 2013 - 2015
Chair, CLAS College Assembly, 2013-2014
Past Chair, Advisory Council of Faculty Senates, 2012 - 2014
Task Force on the Future of the College of Liberal Arts & Sciences, 2012 - 20013
Chair, Advisory Council of Faculty Senates, 2010 - 2012
Member, Florida Board of Governors, State University System, 2010 - 2012
CLAS Faculty Council, Vice Chair, 2009 – 2010, Chair 2010-2011, Member 2013-2014
FEO Task Force 2009 – 2011
Vice Chair, Advisory Council of Faculty Senates, 2008 - 2010
Past Chair, Faculty Senate, University of Florida, 2008 - 2009
Chair, Faculty Senate, University of Florida, 2007 - 2008
Member, Board of Trustees, University of Florida, 2007 - 2008
Member, Advisory Council of Faculty Senates, 2006 - 2010
Chair Elect, Faculty Senate, University of Florida, 2006 - 2007
Governance Task Force, College of Liberal Arts & Sciences, 2006 - 2007
Faculty Senate Steering Committee, 2005 - 2009
Senate Council on Research and Scholarship, 2004 - 2007, Chair, 2005 - 2006
UF Master Plan Steering Committee, 2005 - 2006
UF Research Policy Council, 2005 - 2006
Associate Dean for Research, College of Liberal Arts & Sciences, 2001
Search Committee, Director, Center for Gerontological Studies/Institute on Aging, 2001-2002
Institute for Science and Health Policy, Advisory Board Member, 1999 - 2001
Clinical Research Center Analytical Core Advisory Committee, 1998 - present
Office of Research, Technology, and Graduate Education, Board of Directors, 1998 - 1999
Task Force on Electronic Research Administration, 1998

Graduate School, Strategic Planning Committee, 1995 - 1996
Provost's Task Force on Graduate Tuition Payment Allocation, 1995 - 1996
Graduate Council, 1994 -1998
University Senate, 1992 - 1994, 2004 - 2009
ICBR Steering Committee for Mass Spectrometry in Biotechnology, Chair, 1990 - 1993

Service for the Department

Division Head, Analytical Chemistry, 1995 - 2000, 2006 – present
Leadership Board Liaison Committee, 2014 -
Advisory Committee, 1995 - 2000, 2006 - present
Faculty Search Advisory Committee, 2002 - 2007
Safety Training Coordinator, 2002-2007
Technical Facilities Committee, 1999 - 2007
Technical Facilities Safety Committee Chair, 2003 - 2007
Technical Facilities Electronics Shop Committee, 2001-2007
Supervisor, Machine Shop, 1999 - 2000
Graduate Advisory and Curriculum Committee, 1990-2001, 2005-2007
Graduate Advising Committee, 2001-2003
External/Alumni Relations Committee, 1986-2007, 2009 - ; Chair 2009 – 2012, 2014 -
Publicity and Faculty Awards Committee, 1984 - 2007
Search Committee Chair, 1988-1989, 1989-1990, 1991-1992, 1992-1993, 1997-1998, 1998-
1999, 2005-2006, 2010-2011, 2014-2015, 2015-1026
Graduate Selection Committee, 1989 -1992
Graduate Curriculum Committee, 2015 -
Leigh Hall Rededication Committee Chair, 1994 -1995
Chemistry Lab Building Dedication Committee Chair, 1990-1991
Safety Committee, 1983 -1992
Building Committee, 1985 -1992
Industrial Affiliates Newsletter Editorial Board Chair, 1988 -1993
Undergraduate Laboratory Committee Chair, 1992 - 1994

Papers and Seminars Presented

"Selected Ion Fragmentation with a Tandem Quadrupole Mass Spectrometer," (with C.G. Enke and J.D. Morrison), *26th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1978.

"Triple Quadrupole Mass Spectrometer for Direct Mixture Analysis and Structure Elucidation," (with C.G. Enke), *27th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 1979.

"Low Energy Fragmentation of the Major Ions of Cyclohexane by Triple Quadrupole Mass Spectrometry," (with R.K. Latven, C.G. Enke), *27th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 1979.

*"Direct Mixture Analysis by Triple Quadrupole Mass Spectrometry," (with C.G. Enke), *ACS National Meeting*, September 13, 1979.

*"Triple Quadrupole Mass Spectrometry for Mixture Analysis and Structure Elucidation," (with C.G. Enke), *Expochem*, '79, October 22, 1979.

"Triple Quadrupole MS/MS," Florida State University, November 5, 1979.

*"Triple Quadrupole MS/MS," (with C.G. Enke), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 12, 1980.

"Triple Quadrupole MS/MS," Finnigan Corporation, March 25, 1980.

*"Triple Quadrupole MS/MS," *Gordon Conference on Analytical Chemistry*, August 15, 1980.

"Tandem Mass Spectrometry," Veterans Administration Hospital (Gainesville), August 27, 1980.

"Instrumentation for Quadrupole MS/MS," Lawrence Livermore Laboratory, September 19, 1980.

"Triple Quadrupole MS/MS," University of Arizona, November 25, 1980.

"Collision-Induced Dissociation and Reaction Processes in Triple Quadrupole Mass Spectrometry," (with D.D. Fetterolf), *Florida ACS Meeting-in-Miniature*, May 7, 1981.

*"Triple Stage Quadrupole Mass Spectrometry: Instrumentation and Applications," Finnigan User's Group, *29th Annual Conference on Mass Spectrometry and Allied Topics*, May 24, 1981.

*"Triple Quadrupole MS/MS," *ACS Analytical Division Summer Symposium*, July 1, 1981.

"Increased Sensitivity in Mass Spectrometric Analysis with Triple Quadrupole Instruments," *2nd Asilomar Conference*, September 4, 1981.

"Direct Mixture Analysis by Tandem Mass Spectrometry (MS/MS)," UF Nuclear Engineering Science, October 1, 1981.

"Tandem Mass Spectrometry: MS/MS for Mixture Analysis," University of Tennessee at Chattanooga, November 2, 1981.

"Tandem Mass Spectrometry: MS/MS for Mixture Analysis," Middle Tennessee State University, November 3, 1981.

"Tandem Mass Spectrometry: MS/MS for Mixture Analysis," Fisk University, November 4, 1981.

"Determination of Regional Distribution of Drugs in Brain Tissue by Triple Quadrupole Mass Spectrometry," (with R.J. Perchalski), *American Epilepsy Foundation Annual Meeting*, December 3, 1981.

"Tandem Mass Spectrometry: MS/MS for Mixture Analysis," University of Georgia, January 18, 1982.

"Screening for Drugs and Metabolites in Racing Animals by Triple Quadrupole MS/MS," (with H.O. Brotherton), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 8, 1982.

"A New Dimension: Energy-Resolved Triple Quadrupole Mass Spectrometry," (with D.D. Fetterolf), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 8, 1982.

"Combined Chromatography and Tandem Mass Spectrometry: GC/MS/MS and LC/MS/MS," (with D.D. Fetterolf), *ACS National Meeting*, March 31, 1982.

*"Triple Quadrupole MS/MS for Analysis of Complex Environmental Samples," *ACS National Meeting*, April 1, 1982.

"Trace Analysis of Drugs and Metabolites in Physiological Fluids and Tissues by Tandem Mass Spectrometry," (with H.O. Brotherton), *ACS National Meeting*, April 1, 1982.

"Development of MS/MS Methods for Chlorinated Hydrocarbons in Physiological Fluids and Environmental Samples," (with S.V. Hummel), *ACS National Meeting*, March 31, 1982.

"Laser Desorption Mass Spectrometry," UF Surface Science Group, April 13, 1982.

*"Computers in the Laboratory," *Florida Section ACS Meeting*, May 7, 1982.

"A Microcomputer Interface for Use in the Undergraduate Analytical Chemistry Laboratory," (with J.V. Johnson and K.R. Williams), *Florida Section ACS Meeting*, May 7, 1982.

"Recent Advances in Tandem Mass Spectrometry," Lawrence Livermore National Laboratory, June 1, 1982.

*"Biomedical and Clinical Applications of MS/MS," *Finnigan MAT Users Group*, June 4, 1982.

"Tandem Mass Spectrometry for Studies of Drug Action and Metabolism," (with H.O. Brotherton and R.J. Perchalski), *30th Annual Conference on Mass Spectrometry and Allied Topics*, June 8, 1982.

Papers and Seminars Presented - continued

"An Evaluation of Triple Quadrupole MS/MS for On-Line Analysis of Trace Sulfur-Containing Species from Oil Shale Processing," (with C.M. Wong and R.W. Crawford), *30th Annual Conference of Mass Spectrometry and Allied Topics*, June 11, 1982.

"Computerized Structure Elucidation by Tandem Mass Spectrometry," (with J.V. Johnson), *5th Annual International Conference on Computers in Chemical Research and Education (ICCCRE)*, July 12, 1982.

"Tandem Mass Spectrometry for Studies of Drug Action and Metabolism," (with H.O. Brotherton and R.J. Perchalski), *9th International Conference on Mass Spectrometry* (Vienna), August 30, 1982.

*"Tandem Mass Spectrometry: New Techniques in Mixture Analysis and Structure Elucidation," (with J.V. Johnson), *NIH Instrumentation Symposium*, November 17, 1982.

"Careers in Chemistry," Bucholz High School, December 6, 1982.

"Mass Spectrometry's Second Coming," Florida Institute of Technology, February 11, 1983.

"Tandem Mass Spectrometry: MS/MS for Mixture Analysis," University of Delaware, March 14, 1983.

*"Teaching Electronics and Computers at the Graduate Level," *Florida Section ACS Meeting*, May 5, 1983.

"Femtograms and Parts-Per-Trillion: Ultratrace Analysis by Tandem Mass Spectrometry," *31st Annual Conference on Mass Spectrometry and Allied Topics*, May 10, 1983.

*"Rapid Screening and Confirmation for Drugs and Metabolites in Racing Animals by Tandem Mass Spectrometry" (with H.O. Brotherton), *5th International Conference on the Control of the Use of Illegal Drugs in Racing Horses*, June 16, 1983.

*"Tandem Mass Spectrometry for Studies of Drug Action and Metabolism," *ACS National Meeting*, August 29, 1983.

*"Ion-Molecule Reactivity and Collision Spectroscopy of $C_6H_5^+$," (with J.E. Campana and J.V. Johnson), *3rd Asilomar Conference*, September 19, 1983.

"Tandem Mass Spectrometry for Drug Metabolism Studies," Lederle Labs, October 20, 1983.

"Mass Spectrometry's Second Coming," UF Major Analytical Instrumentation Center, November 3, 1983.

"MS/MS Analysis of Toluene's Atmospheric Degradation Products," (with B.E. Dumdei, R.J. O'Brien, and S.V. Hummel), *ACS NW Regional Meeting*, December 28, 1983.

"Mass Spectrometry's Second Coming," Florida A&M University, February 15, 1984.

Papers and Seminars Presented - continued

"Mass Spectrometry's Second Coming," Stetson University, February 23, 1984.

*"Femtograms and Parts-Per-Trillion: Ultratrace Analysis by Tandem Mass Spectrometry," *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 5, 1984.

"Clinical and Pharmaceutical Applications of Tandem Mass Spectrometry (MS/MS)," Squibb, March 8, 1984.

"MS/MS Analysis of High Carbon-Number Geoporphyrins," (with J.M.E. Quirke, L.L. Questa, D.M. Laman, J.V. Johnson, and E.D. Britton), *ACS National Meeting*, April, 9, 1984.

"The Products of Toluene's Degradation under Simulated Atmospheric Conditions," (with B.E. Dumdei, R.J. O'Brien, and S.V. Hummel), *ACS National Meeting*, April 9, 1984.

"Femtograms and Parts-Per-Trillion: Ultratrace Analysis by Tandem Mass Spectrometry," Finnigan Seminar Series (San Jose), April 18, 1984.

"Tandem Mass Spectrometry: MS/MS for Mixture Analysis," Georgia Tech, April 19, 1984.

"Femtograms and Parts-Per-Trillion: Ultratrace Analysis by Tandem Mass Spectrometry," *Finnigan Seminar Series (Houston)*, April 30, 1984.

"Determination of Aldicarb, Aldicarb Nitrile, and Aldicarb Oxime by GC/MS," (with M.L. Trehy and J.J. McCreary), *Florida Section ACS Meeting*, May 10, 1984.

"Tandem Mass Spectrometry for Characterization of Geoporphyrins," (with E.D. Britton, J.V. Johnson, J.M.E. Quirke, and L.L. Questa), *Florida Section ACS Meeting*, May 10, 1984.

"Tandem Mass Spectrometry for the Trace Determination of Tryptolines in Crude Brain Extracts," (with J.V. Johnson, K.F. Faull, and O. Beck), *Florida Section ACS Meeting*, May 10, 1984.

*"Triple Stage Quadrupole Mass Spectrometry for Clinical and Pharmaceutical Analysis," (with J.V. Johnson), *Finnigan MAT Users Group*, May 26, 1984.

"Determination of Aldicarb, Aldicarb Nitrile, and Aldicarb Oxime in Water by Gas Chromatography," (with M.L. Trehy and J.J. McCreary), *32nd Annual Conference on Mass Spectrometry and Allied Topics*, May 28, 1984.

"Negative Ion Chemical Ionization GC/MS for Quantitative Measurement of Urinary Octopamines and Synephrines," (with K.E. Ibrahim, J.M. Midgley, M.W. Crouch, C.M. Williams, and M.B. Budd), *32nd Annual Conference on Mass Spectrometry and Allied Topics*, May 28, 1984.

"Tandem Mass Spectrometry for the Trace Determination of Tryptolines in Crude Brain Extract," (with J.V. Johnson, K.F. Faull, and J.D. Barchas), *32nd Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1984.

Papers and Seminars Presented - continued

"The Products of Toluene's Degradation under Simulated Atmospheric Conditions," (with B.E. Dumdei, R.J. O'Brien, and S.V. Hummel), *4th Environmental Analytical Chemistry Symposium*, June 20, 1984.

"Tandem Mass Spectrometry for Trace Analysis of Drugs and Metabolites," Finnigan Seminar Series (Miami), June 25, 1984.

*"MS/MS: Tandem Mass Spectrometry for Pharmaceutical Analysis," *24th Annual Conference on Pharmaceutical Analysis*, August 1, 1984.

"Increasing the Information Content of Mass Spectrometry: MS/MS," Lawrence Livermore National Laboratory, August 3, 1984.

"Why MS/MS?" Finnigan MAT, August 7, 1984.

"Tandem Mass Spectrometry for Trace Determination of Tryptolines in Crude Brain Extracts," (with J.V. Johnson, K.F. Faull, and O. Beck), *International Conference on Mass Spectrometry in the Health and Life Sciences*, September 9, 1984.

*"Tandem Mass Spectrometry (MS/MS) for Studies of Drug Metabolism," *Pharmaceutical Manufacturers Association - Drug Metabolism Meeting*, September 10, 1984.

"Clinical and Pharmaceutical Applications of Tandem Mass Spectrometry," Upjohn Company, October 2, 1984.

"Tandem Mass Spectrometry: Fundamentals, Instrumentation and Applications," *First Annual IBM Mass Spectrometry Symposium*, January 15, 1985.

"Femtograms and Parts-Per-Trillion: Trace Analysis by Tandem Mass Spectrometry," University of Georgia, January 29, 1985.

*"Biotransformation and Excretion: Metabolite Identification by Mass Spectrometric Methods," (with R.J. Perchalski and M. Lee), *Symposium on Frontiers of Pharmacology*, February 5, 1985.

"Femtograms and Parts-Per-Trillion: Trace Analysis by Tandem Mass Spectrometry (MS/MS)," University of Alabama, (Tuscaloosa), February 7, 1985.

"Femtograms and Parts-Per-Trillion: Trace Analysis by Tandem Mass Spectrometry (MS/MS)," University of Alabama (Birmingham), February 8, 1985.

*"Trace Analysis by Tandem Mass Spectrometry: MS/MS," *First Annual Cincinnati Symposium*, February 13, 1985.

"MS/MS: Tandem Mass Spectrometry for Pharmaceutical Analysis," UF College of Pharmacy, February 20, 1985.

"Extremely Rapid Analysis for Thermally Labile Compounds by GC/MS," (with M.L. Trehy), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, February 25, 1985.

Papers and Seminars Presented - continued

"Drug Analysis by Tandem Mass Spectrometry (MS/MS)," Louisiana State University Medical Center, February 26, 1985.

*"MS/MS: Tandem Mass Spectrometry for Forensic Chemistry and Toxicology," *ACS National Meeting*, April 29, 1985.

*"Application of Tandem MS/MS to Localization of Double Bonds in Polyolefins," (with D.A. Carlson and C.S. Roan), *ACS National Meeting*, April 29, 1985.

"Water Chlorination By-Products and Pathways Resulting from Chlorination of Nitrogenous Substances in Natural Waters," (with M.L. Trehy), *ACS National Meeting*, April 30, 1985.

*"Tandem Mass Spectrometry for Characterization of High Carbon Number Geoporphyrins," with E.D. Britton, J.V. Johnson, and J.M.E. Quirke), *ACS National Meeting*, May 2, 1985.

*"Free-Base Porphyrins from the Phosphate Basin of Gafse (Tunisia)," (with J.M.E. Quirke, E.D. Britton, and J. Trichet), *ACS National Meeting*, May 2, 1985.

*"Trace Analysis by Tandem Mass Spectrometry: MS/MS," *15th Annual Symposium on the Analytical Chemistry of Pollutants*, May 20, 1985.

"Identification of Drug Metabolites with Triple Quadrupole Mass Spectrometry," (with M. Lee and R.J. Perchalski), *33rd Annual Conference on Mass Spectrometry and Allied Topics*, May 27, 1985.

"GC/MS/MS for the Simultaneous Determination of Indoleamines and Tryptolines in Crude Extracts of Rat Brain," (with J.V. Johnson, K.F. Faull, O. Beck, and J.D. Barchas), *33rd Annual Conference on Mass Spectrometry and Allied Topics*, May 28, 1985.

*"Tandem Mass Spectrometry for Environmental Analysis," *33rd Annual Conference on Mass Spectrometry and Allied Topics*, May 29, 1985.

"Investigation of Chlorination By-Products of Nitrogenous Substances by Mass Spectrometry," (with M.L. Trehy), *33rd Annual Conference on Mass Spectrometry and Allied Topics*, May 29, 1985.

*"Solving Problems in Trace Analysis by Triple Quadrupole Mass Spectrometry," *33rd Annual Conference on Mass Spectrometry and Allied Topics*, May 31, 1985.

*"Tandem Mass Spectrometry: Clinical and Pharmaceutical Applications," (with R.J. Perchalski, J.V. Johnson, M.B. Budd, and M. Lee), *Great Lakes Regional ACS Meeting*, June 12, 1985.

"Solving Problems in Trace Analysis by Triple Quadrupole MS/MS," Toray Research Center (Japan), July 15, 1985.

"Tandem Mass Spectrometry (MS/MS) for Biomedical and Pharmaceutical Analysis," Chugai Pharmaceutical (Japan), July 15, 1985.

Papers and Seminars Presented - continued

*"Tandem Mass Spectrometry (MS/MS) for Biomedical Trace Analysis," (Plenary Lecture) *Biomedical Mass Spectrometry Conference (Japan)*, July 16, 1985.

"Solving Problems in Trace Analysis by Triple Quadrupole MS/MS," National Normal University (Taiwan), July 22, 1985.

"Solving Problems in Trace Analysis by Triple Quadrupole MS/MS," Chung-Shan Institute of Science and Technology (Taiwan), July 23, 1985.

"Trace Analysis by Tandem Mass Spectrometry: MS/MS," National Science Council (Taiwan), July 24, 1985.

"Trace Analysis by Tandem Mass Spectrometry: MS/MS," National Tsing-Hua University (Taiwan), July 25, 1985.

"Solving Problems in Trace Analysis by Triple Quadrupole Mass Spectrometry," Showa Denko K.K. (Japan), July 29, 1985.

"Tandem Mass Spectrometry for Biomedical and Pharmaceutical Analysis," Sankyo (Japan), July 29, 1985.

*"Why Hyphenated Methods?" *Gordon Conference on Analytical Chemistry*, August 12, 1985.
"Tandem Mass Spectrometry for Biomedical and Pharmaceutical Analysis," *10th International Conference on Mass Spectrometry*, (Swansea, Wales), September 13, 1985.

"GC/MS/MS for the Simultaneous Determination of Indoleamines and Tryptolines in Crude Extracts of Rat Brain," (with J.V. Johnson, K.F. Faull, O. Beck, and J.D. Barchas), *10th International Conference on Mass Spectrometry*, (Swansea, Wales), September 13, 1985.

"Solving Problems in Trace Analysis by Triple Quadrupole MS/MS," *Finnigan Seminar Series (New Orleans)*, September 30, 1985.

"Solving Problems in Trace Analysis by Triple Quadrupole MS/MS," *Finnigan Seminar Series (Ottawa)*, October 3, 1985.

*"Trace Analysis by Tandem Mass Spectrometry: MS/MS," *Workshop on Mass Spectrometric Detection of Biological Materials*, November 18, 1985.

*"Mixture Analysis by MS/MS," *Eastern Analytical Symposium*, November 20, 1985.

"Mass Spectrometry's Second Coming," College of Charleston, January 16, 1986.

*"Trace Analysis by Tandem Mass Spectrometry: MS/MS," *Mass Spectrometry Symposium* (Stockholm, Sweden), April 28, 1986.

*"Solving Problems by MS/MS," *Mass Spectrometry Symposium* (Helsinki, Finland), April 29, 1986.

Papers and Seminars Presented - continued

**"Solving Environmental Problems by Tandem Mass Spectrometry," *Florida Section ACS Meeting*, May 15, 1986.

"Design and Characterization of an Atmospheric Pressure Ionization Source for a Portable Tandem Mass Spectrometer," (with K.M. Matuszak, M.E. Hail, and J.V. Johnson), *Florida Section ACS Meeting*, May 15, 1986.

**"Tandem Mass Spectrometry: Coming of Age," (Introductory Plenary Lecture) *34th Annual Conference on Mass Spectrometry and Allied Topics*, June 9, 1986.

"Negative Chemical Ionization MS/MS for the Identification of Chlorinated Compounds in Northern Shark Liver," (with R. Guevremont, W.D. Jamieson, and P.G. Sim), *34th Annual Conference on Mass Spectrometry and Allied Topics*, June 10, 1986.

"Electrophilic Modifier Gases in CI: Enhancement of the Positive CI Responses of Analytes in Trace Analysis," (with J.V. Johnson), *34th Annual Conference on Mass Spectrometry and Allied Topics*, June 11, 1986.

"Tandem Mass Spectrometry for the Determination of Trace Levels of LSD in Human Urine," (with J.V. Johnson, M.R. Lee, M.S. Lee, and J.C. Anders), *34th Annual Conference on Mass Spectrometry and Allied Topics*, June 12, 1986.

"Capabilities and Limitations of Tandem Mass Spectrometry for the Identification of Drug Metabolites," (with M.S. Lee and R.J. Perchalski), *34th Annual Conference on Mass Spectrometry and Allied Topics*, June 13, 1986.

"GC/MS/MS for Low-Level Quantitation of Pyrethroid Residues," (with F.W. Brill, P. Francis, and M. Lee), *6th IUPAC International Conference on Pesticide Chemistry*, August 10, 1986.

"Trace Mixture Analysis by Tandem Mass Spectrometry: MS/MS," University of Delaware, September 5, 1986.

"Biomedical and Pharmaceutical Applications of Tandem Mass Spectrometry: MS/MS," Army Medical Research Institute of Infectious Diseases, September 18, 1986.

"Biomedical and Pharmaceutical Applications of Tandem Mass Spectrometry: MS/MS," Pfizer, November 7, 1986.

"The Role of Tandem Mass Spectrometry in Rapid Detection at Trace Levels," *Conference on Chemical Defense Research*, November 20, 1986.

"Trace Analysis by Tandem Mass Spectrometry," Utah State University, February 23, 1987.

"Tandem Mass Spectrometry for Biomedical and Pharmaceutical Analysis," University of Utah, February 24, 1987.

"Tandem Mass Spectrometry: Biomedical and Pharmaceutical Applications," University of Arizona, February 27, 1987.

Papers and Seminars Presented - continued

"Optimization of Ion Transmission in the TSQ 70," (with M.E. Hail and J.V. Johnson), *Finnigan MAT Users Meeting*, May 24, 1987.

"Ion-Molecule Reactions in the Ion Trap Mass Spectrometer," (with R.E. Pedder, D.W. Berberich, and J.V. Johnson), *Finnigan MAT Users Meeting*, May 24, 1987.

"Biooxidation Studies with Electrochemistry/Thermospray/Tandem Mass Spectrometry," (with K.J. Volk, M.S. Lee, and A. Brajter-Toth), *Finnigan MAT Users Meeting*, May 24, 1987.

"Analyte Detection in Solid Polymer Matrices by Pyrolysis-Atmospheric Pressure Chemical Ionization-MS/MS," (with A.P. Snyder and J.H. Kremer), *35th Annual Conference on Mass Spectrometry and Allied Topics*, May 25, 1987.

"Design and Performance of a New API Source Compatible with a Commercial Tandem Mass Spectrometer," (with K.P. Matuszak, M.E. Hail, and J.V. Johnson), *35th Annual Conference on Mass Spectrometry and Allied Topics*, May 26, 1987.

"Fundamental Studies of Thermospray Ionization: Investigation of the Thermospray Plume," (with Mike S. Lee), *35th Annual Conference on Mass Spectrometry and Allied Topics*, May 26, 1987.

"Comparison of MS/MS With Triple Quadrupole and Ion Trap Tandem Mass Spectrometers," (with J.V. Johnson, D. Bradford, and P. Kelly), *35th Annual Conference on Mass Spectrometry and Allied Topics*, May 28, 1987.

"Picogram to Microgram Analysis by Gas Chromatography/Ion Trap Mass Spectrometry," (with W. McClennen and A.P. Snyder), *35th Annual Conference on Mass Spectrometry and Allied Topics*, May 28, 1987.

"Tandem Mass Spectrometry for Determining Trace Levels of Steranes in Crude Shale Oil," (with J.V. Johnson, C.M. Wong, and H.R. Gregg), *35th Annual Conference on Mass Spectrometry and Allied Topics*, May 28, 1987.

"Hydrocarbon Type Analysis of Jet Fuel With Gas Chromatography/Mass Spectrometry," (with M.J. Gehron), *35th Annual Conference on Mass Spectrometry and Allied Topics*, May 28, 1987.

"The Effect of Metal Atoms on Electron Impact and Chemical Ionization Mass Spectra of Geoporphyrins," (with B.D. Beato and J.M.E. Quirke), *35th Annual Conference on Mass Spectrometry and Allied Topics*, May 28, 1987.

"Forensic Comparison of Explosives By Thermospray Liquid Chromatography-Mass Spectrometry," (with D.W. Berberich and D.D. Fetterolf), *35th Annual Conference on Mass Spectrometry and Allied Topics*, May 29, 1987.

*"Tandem Mass Spectrometry: Potential for Microbiological Applications," *First International Symposium on the Interface between Analytical Chemistry and Microbiology*, June 5, 1987.

Papers and Seminars Presented - continued

"Pyrolysis-APCI-MS/MS Characterization of Biopolymers and Streptococci," (with A.P. Snyder, J.H. Kremer, W. Windig, and H.L.C. Meuzelaar), *First International Symposium on the Interface between Analytical Chemistry and Microbiology*, June 5, 1987.

*"Tandem Mass Spectrometry (MS/MS): An Overview," *Swedish Chemistry Society*, June 11, 1987.

"Pyrolysis API/MS/MS of Polymers," (with A.P. Snyder, J.H. Kremer, and S.A. Liebman), *Gordon Conference on Analytical Pyrolysis*, July 6, 1987.

*"Amino Acids as Potential Precursors for Halogenated By-products Formed on Chlorination of Natural Waters," (with M.L. Trehly and C.J. Miles), *ACS National Meeting*, September 2, 1987.

*"Tandem Mass Spectrometry (MS/MS): Application to Organic Geochemistry," (with J.V. Johnson, E.D. Britton, M.J. Gehron, and B.D. Beato), *ACS National Meeting*, September 2, 1987.

*"Mass Spectrometric Studies of Porphyrins: Doubly Charged Ions," (with B.D. Beato and J.M.E. Quirke), *ACS National Meeting*, September 2, 1987.

*"Tandem Mass Spectrometric Analyses of Geoporphyrins Isolated from Oil Shale Kerogen," (with J.M.E. Quirke, B.D. Beato, G. Van Berkel, and R.H. Filby), *ACS National Meeting*, September 2, 1987.

*"The Role of Chromatographic Separation in Conjunction with Tandem Mass Spectrometry," (with M.S. Lee), *Eastern Analytical Symposium*, September 19, 1987.

"Hydrocarbon Type Analysis of Jet Fuel with Gas Chromatography/Mass Spectrometry," (with M.J. Gehron), *U.F. Environmental Research Poster Session*, October 6, 1987.

"The Effect of Metal Atoms on EI and CI Mass Spectra of Geoporphyrins," (with B.D. Beato), *U.F. Environmental Research Poster Session*, October 6, 1987.

"Biooxidation Studies with Electrochemistry/Thermospray/Tandem Mass Spectrometry," (with K.J. Volk, M.S. Lee, and A. Brajter-Toth), *U.F. Environmental Research Poster Session*, October 6, 1987.

"Solving Environmental Problems by Tandem Mass Spectrometry," *Environmental Science and Engineering*, October 8, 1987.

"Electrochemistry/Thermospray/Tandem Mass Spectrometry in the Study of Biological Oxidations," (with A. Brajter-Toth and K.J. Volk), *Electrochemical Society Meeting*, October 15, 1987.

"Mass Spectrometric Strategies for Fuels Analysis," *Pratt and Whitney*, October 26, 1987.

"Fundamental Studies of Chemical Ionization in a Quadrupole Ion Trap Mass Spectrometer," (with D.W. Berberich), *Southeast Regional Meeting of the American Chemical Society*, November 5, 1987.

Papers and Seminars Presented - continued

"Biooxidation Studies with Electrochemistry/Thermospray/Tandem Mass Spectrometry," (with K.J. Volk, M.S. Lee, and A. Brajter-Toth), *Southeast Regional Meeting of the American Chemical Society*, November 5, 1987.

"Tandem Mass Spectrometry for the Identification of Impurities Produced in the Catalytic Oxidation of o-Xylene to Phthalic Anhydride," (with T.A. Gillespie), *Southeast Regional Meeting of the American Chemical Society*, November 5, 1987.

"Biooxidation Studies with Electrochemistry/Thermospray/Tandem Mass Spectrometry," (with K.J. Volk, M.S. Lee, and A. Brajter-Toth), *Conference on Chemical Defense Research*, November 18, 1987.

"Enhancements to MS/MS in a Quadrupole Ion Trap Mass Spectrometer," (with R.E. Pedder), *Conference on Chemical Defense Research*, November 18, 1987.

"Chemical Ionization MS/MS in a Quadrupole Ion Trap Mass Spectrometer," (with D.W. Berberich), *Conference on Chemical Defense Research*, November 18, 1987.

"Comparison of MS/MS with Triple Quadrupole and Ion Trap Tandem Mass Spectrometers," (with J.V. Johnson) *Conference on Chemical Defense Research*, November 18, 1987.

"Fundamental Studies of Thermospray Ionization: Investigation of the Thermospray Plume," (with M.S. Lee), *Conference on Chemical Defense Research*, November 18, 1987.

"Biomedical and Pharmaceutical Applications of Tandem Mass Spectrometry (MS/MS)," Alcon Laboratories, January 28, 1988.

*"Trade-offs in Tandem Methods: Combined Sample Preparation/Chromatography/Mass Spectrometry," *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, February 23, 1988.

"High Sensitivity MS/MS with an Ion Trap Mass Spectrometer," (with P.E. Kelley, M. Weber-Grabau, C.S. Campbell, and J.V. Johnson), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, February 24, 1988.

"Tandem Mass Spectrometry (MS/MS): Progress and Prospects," Midwest Mass Spectrometry User Group, February 29, 1988.

"Solving Problems by Tandem Mass Spectrometry (MS/MS)," Monsanto Company, March 1, 1988.

*"Studies on Porphyrin Geochemistry," (with J.M.E. Quirke and Brian Beato), *Florida Section ACS Meeting*, April 13, 1988.

"Tandem Mass Spectrometry: Coming of Age", LaTrobe University (Australia), May 11, 1988.

*"Tandem Mass Spectrometry: Analytical Capabilities and Applications," *Symposium on MS/MS*, (Sydney, Australia), May 13, 1988.

Papers and Seminars Presented - continued

*"Tandem Mass Spectrometry (MS/MS): Progress and Prospects," (Plenary Lecture), *Australia/New Zealand Mass Spectrometry Conference*, (Brisbane, Australia), May 17, 1988.

**"MS/MS: Tandem Mass Spectrometry for Forensic Analysis," *International Conference on Forensic Science*, (Brisbane, Australia), May 23, 1988.

"Fate of Pesticides in Chlorinated Water" (with C.J. Miles and M.L. Trehly), *ACS National Meeting*, June 5, 1988.

"Analysis of the Nickel and Vanadyl Geoporphyrins from New Albany Bitumen by Electron Ionization and Ammonia Chemical Ionization Tandem Mass Spectrometry," (with B.D. Beato, J.M.E. Quirke, M.A. Concha, R.H. Filby, G.E. Mercer, and G.J. Van Berkel), *36th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 1988.

"Collisionally Activated Dissociation (CAD) Studies in the Optimization of MS/MS for the Trace Determination of Prostaglandins," (with T.A. Gillespie), *36th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 1988.

"Characterization of Tandem Mass Spectrometry in the Quadrupole Ion Trap," (with J.V. Johnson), *36th Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 1988.

"Computer Simulation of Ion Trajectories in a Quadrupole Ion Trap Mass Spectrometer," (with R.E. Pedder), *36th Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 1988.

**"Practical MS/MS Analysis," (with J.V. Johnson), *36th Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 1988.

"Measurement of Arachidonic Acid Metabolites: Immunoaffinity Purification with GC/MS, GC/MS/MS, and DCI/MS/MS," (with T.A. Gillespie, M.E. Hail, J.J. Vrbanac, and D.R. Knapp), *36th Annual Conference on Mass Spectrometry and Allied Topics*, June 8, 1988.

"Concepts and Applications of Short Open Tubular Columns in Gas Chromatography/Mass Spectrometry," (with M.E. Hail), *36th Annual Conference on Mass Spectrometry and Allied Topics*, June 8, 1988.

"Comparison of Charge Exchange and Electron Ionization in Quadrupole Ion Trap and Triple Quadrupole Mass Spectrometers," (with D.W. Berberich and M.E. Hail), *36th Annual Conference on Mass Spectrometry and Allied Topics*, June 9, 1988.

"Fundamental Studies of Solution-Phase and Gas-Phase Reactions in Electrochemistry/Thermospray/Tandem Mass Spectrometry," (with K.J. Volk and A. Brajter-Toth), *36th Annual Conference on Mass Spectrometry and Allied Topics*, June 10, 1988.

**"Analytical Capabilities and Applications of the Quadrupole Ion Trap," (with J.V. Johnson, D.W. Berberich, and R.E. Pedder), *36th Annual Conference on Mass Spectrometry and Allied Topics*, June 10, 1988.

Papers and Seminars Presented - continued

"The Dependence of Ion Formation on Thermospray Plume Characteristics," (with M.S. Lee), *36th Annual Conference on Mass Spectrometry and Allied Topics*, June 10, 1988.

*"The Role of Chromatography in Conjunction with Tandem Mass Spectrometry," (with J.V. Johnson), *The Ohio Valley Chromatography Symposium*, June 17, 1988.

*"Tandem Mass Spectrometry (MS/MS): Progress and Prospects," *American Association for Clinical Chemistry National Meeting*, July 24, 1988.

"Optimization of Ion Transmission in the TSQ70," (with J.V. Johnson and M.E. Hail), *Finnigan MAT International Users Forum*, (Bordeaux, France), August 28, 1988.

"On-Line Electrochemistry/Thermospray/Tandem Mass Spectrometry: A New Approach for Studying Electrochemical and Biochemical Redox Reactions," (with K.J. Volk, M.S. Lee, and A. Brajter-Toth), *11th International Conference on Mass Spectrometry*, (Bordeaux, France), September 2, 1988.

"Chemical Ionization and Tandem Mass Spectrometry with the Quadrupole Ion Trap Mass Spectrometer," (with J.V. Johnson, D.W. Berberich, and R.E. Pedder), *11th International Conference on Mass Spectrometry*, (Bordeaux, France), September 2, 1988.

*"Tandem-in-Time Mass Spectrometry in the Quadrupole Ion Trap," (with J.V. Johnson, D.W. Berberich, and R.E. Pedder), *ACS National Meeting*, September 25, 1988.

*"The Role of the Chelated Metal on the Mass Spectra of Metalloporphyrins," (with K.D. Stanley, J.M.E. Quirke, and B.D. Beato), *ACS National Meeting*, September 29, 1988.

*"Tandem Mass Spectrometry for Drug Metabolite Identification," (with R.J. Perchalski, M.S. Lee, and K.J. Volk), *Eastern Analytical Symposium*, October 2, 1988.

"Tandem Mass Spectrometry: Coming of Age," *East Tennessee Mass Spectrometry Group*, October 13, 1988.

"Tandem Mass Spectrometry (MS/MS): Progress and Prospects," *Oak Ridge National Laboratory*, October 14, 1988.

*"Tandem Mass Spectrometry and Artificial Intelligence for Environmental Monitoring of Life Support Systems," (with J.V. Johnson, M.E. Hail, and C.M. Wong), *Pacific Conference on Chemistry and Spectroscopy*, October 26, 1988.

*"Triple Quadrupole and Quadrupole Ion Trap Tandem Mass Spectrometry for the Determination of Morphine Alkaloids," (with J.V. Johnson), *Pacific Conference on Chemistry and Spectroscopy*, October 26, 1988.

*"Electrochemistry On-Line with Tandem Mass Spectrometry: An Innovative Approach for Studying Redox Reactions," (with K.J. Volk and A. Brajter-Toth), *Southeast Regional Meeting of the American Chemical Society*, October 27, 1988.

Papers and Seminars Presented - continued

**Explosives, Drug, and Technical Polymer Applications of Pyrolysis/Atmospheric Pressure Ionization/Tandem Mass Spectrometry," (with A.P. Snyder and S.A. Liebman), *FACSS Meeting*, October 30, 1988.

"Chemical Ionization and Tandem Mass Spectrometry with the Quadrupole Ion Trap Mass Spectrometer," (with J.V. Johnson, D.W. Berberich, and R.E. Pedder), *Conference on Chemical Defense Research*, November 16, 1988.

"Electrochemistry On-line with Tandem Mass Spectrometry: An Innovative Approach for Studying Redox Reactions (with K.J. Volk and A. Brajter-Toth), *Conference on Chemical Defense Research*, November 17, 1988.

"Tandem Mass Spectrometry (MS/MS): Progress and Prospects," University of Pittsburgh, February 9, 1989.

"New Strategies for Enhanced Structure Elucidation of Porphyrins by Tandem Mass Spectrometry (MS/MS)," (with B.D. Beato and J.M.E. Quirke), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 7, 1989.

"Enzymes and Electrochemistry On-line with Tandem Mass Spectrometry: An Innovative Approach to Studying Xenobiotic Metabolism," (with K.J. Volk and A. Brajter-Toth), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 7, 1989.

**Tandem-in-Time Mass Spectrometry in the Quadrupole Ion Trap," (with J.V. Johnson, D.W. Berberich, and R.E. Pedder), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 8, 1989.

"Trade-Offs in Multidimensional Tandem Methods: Combined Sample Preparation/Chromatography/Tandem Mass Spectrometry," Chicago Mass Spectrometry and Applied Spectroscopy Groups, March 21, 1989.

"The Concentrations of Tryptoline and Methtryptoline in Rat Brain," (with K.F. Faull, J.V. Johnson, and P. Peura), *American Society for Neurochemistry Meeting*, March 25, 1989.

**The Quest for the Ultimate Computerized Analytical Instrument," *ACS National Meeting*, April 11, 1989.

**Structure Elucidation of Geoporphyrins by Desorption Tandem Mass Spectrometry: Carbon-Number, Pyrolic Structure, and Sequencing Information from One Experiment," (with B.D. Beato and J.M.E. Quirke), *ACS National Meeting*, April 13, 1989.

**Comparison of the Metal Porphyrin Distributions in Bitumens Isolated from Intact New Albany Shale with Those from the Bitumen of the Demineralized Shale," (with M.A. Concha, J.M.E. Quirke, B.D. Beato, G.E. Mercer, and R.H. Filby), *ACS National Meeting*, April 14, 1989.

**Spectroscopic Properties of Metalloporphyrins: Implications for Geoporphyrins," (with K.D. Stanley, R. Lopez de la Vega, J.M.E. Quirke, and B.D. Beato), *ACS National Meeting*, April 14, 1989.

Papers and Seminars Presented - continued

"Tandem Mass Spectrometry: Progress and Prospects," Louisiana State University, April 21, 1989.

"Tandem-in-Time Mass Spectrometry in the Quadrupole Ion Trap," (with J.V. Johnson, D.W. Berberich, and R.E. Pedder) *Finnigan MAT AB Scandinavian Users' Meeting* (Helsinki, Finland), April 27, 1989.

"Biomedical and Pharmaceutical Applications of Tandem Mass Spectrometry," Bristol-Myers, May 10, 1989.

*"Ion Injection into Ion Traps," (with R.E. Pedder), *37th Annual Conference on Mass Spectrometry and Allied Topics*, May 22, 1989.

"Injection of Ions into a Quadrupole Ion Trap from a Chemical Ionization Source Using a DC Quadrupole," (with R.E. Pedder and M. Weber-Grabau), *37th Annual Conference on Mass Spectrometry and Allied Topics*, May 23, 1989.

"Fundamental Studies of Chemical Ionization Mechanisms of Porphyrins and Metalloporphyrins," (with B.D. Beato), *37th Annual Conference on Mass Spectrometry and Allied Topics*, May 23, 1989.

"Mass Spectrometric Insights into Biological Redox Reactions," (with K.J. Volk and A. Brajter-Toth), *37th Annual Conference on Mass Spectrometry and Allied Topics*, May 23, 1989.

"Studies of the Ion/Molecule Reaction of Esterification by Ion Trap Mass Spectrometry," (with J.S.-C. Chang), *37th Annual Conference on Mass Spectrometry and Allied Topics*, May 23, 1989.

"Triple Quadrupole and Quadrupole Ion Trap Tandem Mass Spectrometry (MS/MS) for the Determination of Morphine Alkaloids," (with J.V. Johnson), *37th Annual Conference on Mass Spectrometry and Allied Topics*, May 25, 1989.

"GC Sample Introduction into the Collision Cell of a Triple Quadrupole Mass Spectrometer for Mass-Selected Reactant Ion CI," (with M.E. Hail and D.W. Berberich), *37th Annual Conference on Mass Spectrometry and Allied Topics*, May 25, 1989.

"Estimation of Mutagenic/Carcinogenic Potential of Environmental Contaminants by Ion-Molecule Reactions and Tandem Mass Spectrometry," (with J.A. Freeman, J.V. Johnson, M.E. Hail, and D.W. Kuehl), *37th Annual Conference on Mass Spectrometry and Allied Topics*, May 25, 1989.

"Negative Ionization in Quadrupole Ion Trap Mass Spectrometry: Effects of Voltages and Reaction Times," (with D.W. Berberich), *37th Annual Conference on Mass Spectrometry and Allied Topics*, May 25, 1989.

*"Advances in Ion Trap MS/MS," *6th Montreux International Symposium on LC/MS, SFC/MS, CZE/MS, and MS/MS*, July 20, 1989.

Papers and Seminars Presented - continued

*"Opportunities for Using Expert Systems in Design, Monitoring, and Control of Advanced Life Support Systems on Manned Space Missions," (with C.M. Wong, M.R. Rudokas, and R.S. Upadhye), *ACS National Meeting*, September 10, 1989.

"Estimation of Mutagenic/Carcinogenic Potential of Environmental Contaminants by Ion-Molecule Reactions and Tandem Mass Spectrometry," (with J.A. Freeman, J.V. Johnson, M.E. Hail, and D.W. Kuehl), *UF Environmental Research Poster Session*, October 31, 1989.

"Mass Spectrometry Tandem-in-Time (in Space): Ion Trap MS/MS and Spacecraft Life-Support Monitoring," *Bay Area Mass Spectrometry Discussion Group*, January 3, 1990.

"Simultaneous Resonant Excitation of Multiple Ions in a Quadrupole Ion Trap," (with J.V. Johnson and R.E. Pedder), *ASMS Sanibel Conference on Ion Trap Mass Spectrometry*, January 30, 1990.

"A Comparison of Ion Trap and Ion Cyclotron Resonance Mass Spectrometers for Obtaining Ion/Molecule Reaction Rate Constants," (with C. Basic, J.E. Bruce, and J.R. Eyler), *ASMS Sanibel Conference on Ion Trap Mass Spectrometry*, January 30, 1990.

*"Simulation and Experiment: Understanding the Physics and Chemistry of Ion Trap MS/MS," *ASMS Sanibel Conference on Ion Trap Mass Spectrometry*, January 30, 1990.

"Tandem Mass Spectrometry (MS/MS): Progress and Prospects, Research Triangle Mass Spec Discussion Group, February 12, 1990.

"Model DNA/Carcinogen Ion-Molecule Reactions to Estimate the Carcinogenic Potential of Environmental Contaminants," NIEHS, February 12, 1990.

"Model DNA/Carcinogen Ion-Molecule Reactions to Estimate the Carcinogenic Potential of Environmental Contaminants," (with J.A. Freeman, J.V. Johnson, and D.W. Kuehl), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 5, 1990.

*"Chemistry of Porphyrins with Extended n-Alkyl or Branched Alkyl Substituents," (with J.M.E. Quirke, M.O. Mosaku, M.A. Quinones, and S.-A. Rossi), *ACS National Meeting*, April 26, 1990.

"Evaluation of Ion Temperature of Determination of Ion/Molecule Reaction Rate Constants in a Quadrupole Ion Trap Mass Spectrometer," (with C. Basic and J.R. Eyler), *38th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 1990.

"Rapid Chromatographic Separation for the Determination of Underivatized Steroids with Tandem Mass Spectrometry," (with S.A. Rossi and J.V. Johnson), *38th Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 1990.

"Quantitative Gas Chromatography/Ion Trap Mass Spectrometry Using Isotopically Labeled Internal Standards," (with B.L. Kleintop and C.R. Abolin), *38th Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 1990.

Papers and Seminars Presented - continued

"Resonant Excitation for CID in the Quadrupole Ion Trap: Energetics and Efficiencies," (with J.V. Johnson, R.E. Pedder, and B.A. Kleintop), *38th Annual Conference on Mass Spectrometry and Allied Topics*, June 8, 1990.

*"Tandem Mass Spectrometry (MS/MS): Progress and Prospects," (Plenary Lecture), *Chemical Institute of Canada National Meeting*, July 19, 1990.

*"Ion-Molecule Reaction Studies for Modeling In-Vivo Mutagenicity by Tandem Mass Spectrometry," (with J.A. Freeman, J.V. Johnson, and D.W. Kuehl), *ACS Analytical Division Summer Symposium*, July 26, 1990.

*"Electrochemistry and Enzymes On-line with Mass Spectrometry," (with A.F. Brajter-Toth and K.J. Volk), *ACS Analytical Division Summer Symposium*, July 27, 1990.

*"Artificial Intelligence and Quadrupole Ion Trap Mass Spectrometry for Monitoring Life Support Systems," (with J.V. Johnson, C. Basic, R.R. Vargas, B.L. Kleintop, N.A. Yates, P. Palmer, and C.M. Wong), *FACSS Meeting*, October 10, 1990.

*"Expert Systems and Mass Spectrometry: An Arranged Marriage," (with P.T. Palmer, C.M. Wong, J.V. Johnson, and N.A. Yates), *Pacific Conference on Chemistry and Spectroscopy*, October 25, 1990.

*"Modeling Biochemical Reactions by Gas-Phase and Solution-Phase Reactions in Tandem Mass Spectrometry," *Joint Southeast/Southwest Regional Meeting of the American Chemical Society*, December 5, 1990.

"Effective Ion Temperatures in a Quadrupole Ion Trap Mass Spectrometer," (with C. Basic and J.R. Eyler), *ASMS Sanibel Conference on Ion Activation*, January 31, 1991.

"Ion-Molecule Reaction Studies for Modeling In-Vivo Mutagenicity by Tandem Mass Spectrometry" (with J.A. Freeman and J.V. Johnson), *ASMS Sanibel Conference on Ion Activation*, January 31, 1991.

"Automated Resonant Excitation via Frequency Assignment Pre-scans and Broadband Excitation in the Quadrupole Ion Trap," (with N.A. Yates, S.C. Bradshaw, and D.B. Tucker), *ASMS Sanibel Conference on Ion Activation*, January 31, 1991.

"Comparison of Gas Chromatographic and Probe Sample Introduction Method Detection Limits on a Triple Quadrupole Mass Spectrometer," (with S.A. Rossi and J.V. Johnson), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 4, 1991.

"Studies of Ion Energies in Quadrupole Ion Trap Mass Spectrometers," (with C. Basic and J.R. Eyler), *Pittsburgh Conference in Analytical Chemistry and Applied Spectroscopy*, March 4, 1991.

*"MS/MS Strategies for Estimating Carcinogenic Potential and for Screening Environmental Samples," (with J.A. Freeman, J.V. Johnson, and D.W. Kuehl), *ACS National Meeting*, April 15, 1991.

Papers and Seminars Presented - continued

"Tandem Mass Spectrometric Studies of Unusual EI Fragmentation Pathways of 5-Nitrooctaethylporphyrin and Its Divalent Metal Complexes," (with J.D. Laycock, J.D. Quirke, and D. Stanley), *39th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 1991.

"Theoretical and Practical Aspects of Short-Column Gas Chromatography/Mass Spectrometry Sample Injection Methods," (with S.A. Rossi), *39th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 1991.

"Short Capillary Column GC/FID under Vacuum Outlet Conditions and Its Relevance to GC/MS," (with U.R. Bernier and S.A. Rossi), *39th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 1991.

"Gas-Phase Reactions of Nucleoside and Nucleotide Ions in a Triple Quadrupole Mass Spectrometer," (with A.P. Annacchino, Jr., J.A. Freeman, and D.W. Kuehl), *39th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 1991.

"Implementation of Parent and Neutral Loss Scanning and Selected Reaction Monitoring on a Quadrupole Ion Trap Mass Spectrometer," (with J.V. Johnson and R.E. Pedder), *39th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 1991.

"Mass-Selective Ionization Techniques in a Quadrupole Ion Trap," (with D.M. Eades and N.A. Yates), *39th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 1991.

"Resonant Excitation for GC/MS/MS in the Quadrupole Ion Trap via Frequency-Assignment Pre-Scans and Broadband Excitation," (with N.A. Yates, C. Bradshaw, and D.B. Tucker), *39th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 1991.

"Extending the Linear Dynamic Range of the Quadrupole Ion Trap for GC/MS Analyses Employing Isotopically Labeled Internal Standards," with B.L. Kleintop and C.R. Abolin), *39th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 1991.

"Determining Effective Ion Energies in a Quadrupole Ion Trap Mass Spectrometer," (with C. Basic and J.R. Eyler), *39th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 1991.

"A Comparative Study of Selective Mass Storage and Two-Step Isolation in the Quadrupole Ion Trap," (with N.A. Yates, C. Bradshaw, and D.B. Tucker), *39th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 1991.

*"The Future of MS/MS," *Finnigan MAT International Users' Forum*, (Amsterdam), August 25, 1991.

*"Automation of the MS/MS Experiment in the Quadrupole Ion Trap," (with N.A. Yates), *FACSS Meeting*, October 6, 1991.

*"Practical MS/MS in the Quadrupole Ion Trap: Potentials and Challenges," (with J.V. Johnson and N.A. Yates), *4th International Workshop on Tandem Mass Spectrometry*, November 21, 1991.

Papers and Seminars Presented - continued

*"Chromatography and MS/MS," (with J.V. Johnson), *4th International Workshop on Tandem Mass Spectrometry*, November 22, 1991.

*"Ongoing Developments in Ion Trap Research," (with C. Basic), *First Canadian and European Workshop on Ion Trap Mass Spectrometry*, January 7, 1992.

"Effect of RF Phase on the Trapping Efficiency of Laser-Desorbed Ions in a Quadrupole Ion Trap Mass Spectrometer," (with R.R. Vargas), *ASMS Sanibel Conference on Lasers in Mass Spectrometry*, (Sanibel Island, FL), January 26, 1992.

"Short Capillary Column GC/FID under Vacuum Outlet Conditions," (with U.R. Bernier), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 9, 1992.

"Particle Beam/Ion Trap Mass Spectrometry for LC/MS Analysis of Compounds of Environmental Interest," (with B.L. Kleintop and D.M. Eades), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 9, 1992.

"Analysis of Drug Compounds in Biological Matrices Using Laser Desorption/Quadrupole Ion Trap Tandem Mass Spectrometry," (with R.R. Vargas), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 10, 1992.

"Approaches to Enhancing Associative Ion-Molecule Reactions in a Triple Quadrupole Mass Spectrometer," (with A.P. Annacchino and J.V. Johnson), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 11, 1992.

*"Chemical Analysis Using the Quadrupole Ion Trap: Environmental Applications," (with J.V. Johnson, B.L. Kleintop, B.I. Coopersmith, N.A. Yates, and D.M. Eades), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 12, 1992.

"Tandem Mass Spectrometry (MS/MS): Progress and Prospects," Ethyl Technical Center (Baton Rouge), March 13, 1992.

*"Instrumental Methods for Improved Gas Chromatography/Tandem Mass Spectrometry on the Quadrupole Ion Trap," (with N.A. Yates), *Kenan Analytical Award Symposium*, April 14, 1992.

"Tandem Mass Spectrometry (MS/MS): Progress and Prospects," *Toledo Section SAS*, April 21, 1992.

"Tandem Mass Spectrometry (MS/MS): Progress and Prospects," *Ohio Valley Section SAS*, April 22, 1992.

"Tandem Mass Spectrometry (MS/MS): Progress and Prospects," *Minnesota Section SAS*, April 23, 1992.

"Trade-Offs in Multidimensional Tandem Methods: Combined Sample Preparation/Chromatograph/Tandem Mass Spectrometry," *Piedmont Section SAS*, April 24, 1992.

Papers and Seminars Presented - continued

"Fundamental and Practical Considerations of Mass Range Extension in a Quadrupole Trap Mass Spectrometer," (with M.M. Booth, J.L. Stephenson and J.V. Johnson), *Florida Section ACS Meeting, April 30, 1992.*

"Short Capillary Column GC/FID Under Vacuum Outlet Conditions," (with U.R. Bernier), *Florida Section ACS Meeting, April 30, 1992.*

"Investigation of Metabolic Pathways of Aromatic Amines by Electrochemistry Coupled with Mass Spectrometry," (with J.A. Jones and D.W. Kuehl), *Florida Section ACS Meeting, April 30, 1992.*

"Tandem Mass Spectrometric Studies of Nitro-Octaethylporphyrin and Its Divalent Metallated Complexes," (with J.D. Laycock and J.M.E. Quirke), *Florida Section ACS Meeting, April 30, 1992.*

"Fundamentals and Applications in High Resolution Quadrupole Ion Trap Mass Spectrometry," (with J.L. Stephenson, M.M. Booth, and J.V. Johnson), *Florida Section ACS Meeting, April 30, 1992.*

*"The Future of Tandem Mass Spectrometry (MS/MS)," (Keynote Lecture), *Association of Official Analytical Chemists NERS Annual Meeting, May 11, 1992.*

*"New Strategies for Analytical Ion Trap Mass Spectrometry," *Finnigan MAT Users Meeting, May 31, 1992.*

*"Managing People," *Young Mass Spectrometrists' Workshop, 40th Annual Conference on Mass Spectrometry and Allied Topics, May 31, 1992.*

"Nucleophile/Electrophile Ion/Molecule Reactions in a Quadrupole Ion Trap Mass Spectrometer," (with B.I. Coopersmith), *40th Annual Conference on Mass Spectrometry and Allied Topics, June 1, 1992.*

"Particle Beam LC/MS Analyses of Compounds of Environmental Interest Using a Quadrupole Ion Trap Mass Spectrometer," (with B.L. Kleintop and D.M. Eades), *40th Annual Conference on Mass Spectrometry and Allied Topics, June 3, 1992.*

"Approaches to Enhancing Associative Ion-Molecule Reactions in a Triple Quadrupole Mass Spectrometer," (with A.P. Annacchino and J.V. Johnson), *40th Annual Conference on Mass Spectrometry and Allied Topics, June 3, 1992.*

"Fundamentals of Short-Column GC/MS/MS and Applications to Anabolic Steroid Screening," (with S.A. Rossi and J.V. Johnson), *40th Annual Conference on Mass Spectrometry and Allied Topics, June 3, 1992.*

"Chemical Ionization with a Particle Beam LC/MS Interface on an Ion Trap Mass Spectrometer," (with D.M. Eades and B.L. Kleintop), *40th Annual Conference on Mass Spectrometry and Allied Topics, June 3, 1992.*

Papers and Seminars Presented - continued

"Artificial Intelligence and Mass Spectrometry for Life Support Systems Monitoring," (with P.T. Palmer, C.M. Wong, J.V. Johnson, and N.A. Yates), *40th Conference on Mass Spectrometry and Allied Topics*, June 3, 1992.

"Electron Energy in a Quadrupole Ion Trap Mass Spectrometer," (with R.E. Pedder and J.V. Johnson), *40th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 1992.

"Investigation of Metabolic Pathways of Aromatic Amines by Electrochemistry/Particle Beam/Mass Spectrometry," (with J.A. Jones and D.W. Kuehl), *40th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 1992.

"Analysis of Spiperone in a Biological Matrix Using Laser Desorption/Quadrupole Ion Trap Tandem Mass Spectrometry," (with R.R. Vargas, M.S. Lee, S.L. Moon, and I.E. Rosenberg), *40th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 1992.

"An Expert System/Ion Trap Mass Spectrometry Approach for Life Support Systems Monitoring," (with P.T. Palmer, C.M. Wong, J.V. Johnson, N.A. Yates, and M. Story), *International Conference on Environmental Systems*, July 13, 1992.

**"Particle Beam LC/MS on the Quadrupole Ion Trap," (with B.L. Kleintop and D. Eades), *FACSS*, September 21, 1992.

**"Electrochimie en Ligne avec la Spectrométrie de Masse (MS/MS)," (with K.J. Volk), *Journées Frances de Spectrométrie de Masse* (Metz, France), September 22, 1992.

**"Probing the Physics and Chemistry of Quadrupole Ion Trap Mass Spectrometry via Experiment and Simulation," *9th Asilomar Conference on Mass Spectrometry*, September 28, 1992.

**"SWIFT in the Quadrupole Ion Trap," (with N.A. Yates), *9th Asilomar Conference on Mass Spectrometry*, September 28, 1992.

**"Particle Beam LC/MS with a Quadrupole Ion Trap Mass Spectrometer: Instrumentation and Application for Environmental Analyses," (with B.L. Kleintop, D.M. Eades, J.A. Jones and J.V. Johnson), *ACS Regional Meeting on Recent Advances in Mass Spectrometry*, October 16, 1992.

"Investigation of Metabolic Pathways of Aromatic Amines by Electrochemistry/ Particle Beam/Mass Spectrometry," (with J.A. Jones), *Florida Environmental Research Expo*, October 26, 1992.

**"Tandem Mass Spectrometry (MS/MS): Progress and Prospects," *Joint Southeast/Middle Atlantic Regional American Chemical Society Meeting*, December 8, 1992.

"Mass Spectrometry's Second Coming," UF Undergraduate Chemical Society, February 2, 1993.

"Confinement of Ions to the Collision Cell of a Triple Quadrupole Mass Spectrometer," (with A.P. Annacchino), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 9, 1993.

Papers and Seminars Presented - continued

"Determination of Mosquito Attractants Emanating from Human Skin by Tandem Mass Spectrometry," (with U.R. Bernier, C.E. Schreck, and D.R. Barnard), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 10, 1993.

"Analytical Applications of Selective Ion/Molecule Reactions in the Quadrupole Ion Trap Mass Spectrometer," (with B.I. Coopersmith and D.W. Kuehl), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 11, 1993.

"'Black Canyon' Effects on Cl Reagent Ions in a Quadrupole Ion Trap," (with D.M. Eades) *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 11, 1993.

"Laser Desorption/Ion Trap Mass Spectrometry and Tandem Mass Spectrometry of Drug Compounds in Biological Matrices," (with R.R. Vargas, M.S. Lee, S.L. Moon, and I.E. Rosenberg), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 11, 1993.

"Improved Ion Trap Instrumentation for Particle Beam LC/MS," (with B.L. Kleintop and D.M. Eades), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 11, 1993.

"High-mass Analysis on the Quadrupole Ion Trap Mass Spectrometer," (with J.V. Johnson, M.M. Booth, J.L. Stephenson, and R.R. Vargas), *Florida Section ACS Meeting*, May 6, 1993.

"Tandem Mass Spectrometry of Human Skin Emanations for the Determination of Mosquito Attractants," (with U.R. Bernier, C.E. Schreck, and D.R. Barnard), *41st Annual Conference on Mass Spectrometry and Allied Topics*, May 31, 1993.

"Investigation of Photochemical Reactions via On-Line Thermospray Tandem Mass Spectrometry," (with J.D. Laycock and J.M.E. Quirke), *41st Annual Conference on Mass Spectrometry and Allied Topics*, May 31, 1993.

"A Novel Benchtop Ion Trap Mass Spectrometer for GC/MS/MS," (with N.A. Yates, T.P. Griffin, and P.R. Borum), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1993.

"Infrared Multiphoton Dissociation Studies in the Quadrupole Ion Trap Using a Multi-Pass Optical Arrangement," (with J.L. Stephenson, Jr., M.M. Booth, J.A. Shalosky, and J.R. Eyler), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1993.

*"The Mass Changing Reaction Between MS and MS," (Awards Lecture, with C.G. Enke), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 1993.

"Gas Chromatography/Ion Trap Mass Spectrometry Using an External Ion Source," (with M.M. Booth and J.L. Stephenson), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 1993.

"Experimental Investigations of Ion Secular Frequency during Isolation in a Quadrupole Ion Trap," (with D.M. Eades and J.V. Johnson), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 1993.

Papers and Seminars Presented - continued

"Rapid Evaluation of Polymers Using Particle Beam/Chemical Ionization Mass Spectrometry," (with J.M. Wood, U.R. Bernier, and J.V. Johnson), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 1993.

"The Development of Mass-Selected Automatic Gain Control on a Quadrupole Ion Trap Mass Spectrometer," (with T.P. Griffin and N.A. Yates), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 1993.

"Characterization of High-Mass Analysis on the Quadrupole Ion Trap Mass Spectrometer," (with J.V. Johnson, M.M. Booth, J.L. Stephenson, Jr., and R.R. Vargas), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 1993.

"Predicting Degradation Products of Environmental Contaminants by On-Line Electrochemistry/Mass Spectrometry," (with J.A. Jones and D.W. Kuehl), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 1993.

"A New Model for the Estimation of Ion Kinetic Energy in a Quadrupole Ion Trap," (with R.E. Pedder), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 1993.

"Investigations in Resonance Excitation in the Quadrupole Ion Trap Mass Spectrometer," (with J.V. Johnson and R.E. Pedder), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 1993.

"Further Investigations of Nucleophile/Electrophile Ion/Molecule Reactions in an Ion Trap Mass Spectrometer," (with B.I. Coopersmith and D.W. Kuehl), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 3, 1993.

"Non-Linear Resonance Effects during Ion Storage in a Quadrupole Ion Trap," (with D.M. Eades), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 3, 1993.

"Differentiation of Isomers through Energy-Resolved CAD and Ion/Molecule Reactions in an Ion Trap Mass Spectrometer," (with B.I. Coopersmith), *41st Annual Conference on Mass Spectrometry and Allied Topics*, June 3, 1993.

*"Short-Column Vacuum GC and GC/MS/MS," *FACSS*, October 17, 1993.

"Ion Trap MS/MS: Potentials and Pitfalls," *Finnigan Corporation Annual Meeting*, November 13, 1993.

*"Tandem Photo-induced Dissociation/Collision-induced Dissociation Experiments in the Quadrupole Ion Trap," (with J.L. Stephenson, Jr., M.M. Booth, J.A. Shalosky, and J.R. Eyler), *Lake Louise Workshop on Tandem Mass Spectrometry* (Calgary, Canada), November 19, 1993.

"Negative Ion Chemical Ionization Gas Chromatography/Ion Trap Mass Spectrometry Using an External Ion Source," (with M.M. Booth and J.L. Stephenson, Jr.), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 1, 1994.

Papers and Seminars Presented - continued

"Identification of Volatile Mosquito Attractants by GC/MS and GC/MS/MS," (with U.R. Bernier, C.E. Schreck, and D.R. Barnard), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 2, 1994.

"Pharmaceutical and Biomedical Applications of Tandem Mass Spectrometry," Eli Lilly, March 31, 1994.

"Tandem Mass Spectrometry (MS/MS): Progress and Prospects," Southern Illinois University, April 1, 1994.

"Tandem Mass Spectrometry (MS/MS): Progress and Prospects," Ohio State University, April 25, 1994.

"Strategies for the Determination of Mosquito Attractants by Tandem Mass Spectrometry," (with U.R. Bernier, C.E. Schreck, and D.R. Bernard), *Florida Meeting of the American Chemical Society*, May 5, 1994.

"Increased Trapping Efficiency of Laser Desorbed Ions in a Quadrupole Ion Trap Mass Spectrometer," (with C.D. Reddick and R.R. Vargas), *Florida Meeting of the American Chemical Society*, May 6, 1994.

"Effects of Buffer Gas Introduction on Ion Storage Efficiency and Detection," (with T.L. Williams and J.L. Stephenson, Jr.), *Florida Meeting of the American Chemical Society*, May 6, 1994.

"Detection of Ion Stored in a Quadrupole Ion Trap by Rapid Removal of the RF Trapping Field," (with J.A. Jones), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, May 30, 1994.

"Mass Spectrometric Investigation of a Novel Metabolic Pathway of 2,4,6-Trinitrotoluene (TNT)," (with H.T. Mayfield, C. Vorbeck, W.C. Mahone, and J. Yinon), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, May 30, 1994.

"Identification of Thermal Decomposition Products of Explosives by Pyrolysis-GC/MS," (with J. Yinon and S. Bulusu), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, May 30, 1994.

"Reactions of Nucleotides with Electrophiles in a Tandem Mass Spectrometer Using Electrospray Ionization," (with S.M. Carlson, U.R. Bernier, and A.P. Annacchino, Jr.), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, May 30, 1994.

"Electrospray MS/MS Monitoring of Electrochemically-Generated Oxidation Products," (with J.A. Ferguson and R.T. Kennedy), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, May 30, 1994.

"Stability Diagram Studies Using Ramped RF/DC Voltages in a Quadrupole Ion Trap," (with T.P. Griffin), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, May 30, 1994.

Papers and Seminars Presented - continued

"Gas Phase Ion Chemistry Considerations of the Infrared Multiple Photon Dissociation Process in the Quadrupole Ion Trap," (with J.L. Stephenson, Jr., M.M. Booth, and J.R. Eyler), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, May 30, 1994.

"New Strategies for the Analysis of Environmental Samples Using Thermospray Coupled with Tandem Mass Spectrometry," (with W.A. Van Ausdale), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, May 30, 1994.

"Non-Linear Resonance Effects during Ion Injection into a Quadrupole Ion Trap," (with S.M. Boué and J.A. Jones), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, May 30, 1994.

"GC/MS/MS on a Quadrupole Ion Trap Mass Spectrometer Using Mass-Selective Automatic Gain Control," (with S.T. Quarmby and T.P. Griffin), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1994.

"The Design of a Hybrid Time-of-Flight/Quadrupole Ion Trap Mass Spectrometer Utilizing a DC Quadrupole Deflector," (with M.M. Booth and J.L. Stephenson, Jr.), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1994.

"Ion-Molecule Reactions of CO₂ in the Quadrupole Ion Trap: Implications for Biological Metabolic Studies," (with J.V. Johnson and S.F. Silverton), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1994.

"Gas Chromatography/Selective Ion-Molecule Reactions for the Detection of Carcinogens and Mutagens," (with B.I. Coopersmith and D.W. Kuehl), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 1994.

"Tandem Mass Spectrometric Determination of Mosquito Attractants Originating from Humans," (with U.R. Bernier, C.E. Schreck, and D.R. Barnard), *42nd Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 1994.

*"Advanced Automation for Ion Trap Mass Spectrometry: New Opportunities for Real-time Autonomous Analysis," (with P.T. Palmer, C.M. Wong, J.D. Salmonson, T.P. Griffin, and N.A. Yates), *Conference on Computer Applications in Analytical Spectroscopy*, June 15, 1994.

"Pyrolysis GC/MS of Explosives: A Thermal Decomposition Characterization Study," (with J. Yinon and S. Bulusu), *13th International Conference on Mass Spectrometry*, (Budapest, Hungary), August 27, 1994.

"Mass Spectral Identification of a Hydride Meisenheimer Complex of 2,4,6-Trinitrotoluene (TNT)," (with J. Yinon, J.V. Johnson, U.R. Bernier, H.T. Mayfield, and C.W. Mahone), *13th International Conference on Mass Spectrometry*, (Budapest, Hungary), August 27, 1994.

*"Tandem Mass Spectrometry (MS/MS): Fundamentals, Instrumental Advances, and Pharmaceutical Applications," (Keynote lecture) *7th International Workshop on Tandem Mass Spectrometry*, (Calgary, Canada), December 2, 1994.

Papers and Seminars Presented - continued

"New Instrumentation for Electrospray/Ion Trap of Biological Molecules," (with J.L. Stephenson, Jr., M.M. Booth, S. Quarmby, and J.R. Eyler), *ASMS Sanibel Conference on Electrospray Mass Spectrometry*, January 22, 1995.

"The Design of a Hybrid Time-of-Flight/Quadrupole Ion Trap/Time-of-Flight (TOF/QIT/TOF) Mass Spectrometer for the Analysis of Biological Macromolecules," (with M.M. Booth, G.B. Guckenberger, and J.L. Stephenson, Jr.), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 6, 1995.

"A Novel Electrospray Ionization/Ion Trap Mass Spectrometer for Photodissociation of Biological Macromolecular Ions," (with J.L. Stephenson, Jr., M.M. Booth, J.A. Shalosky, and J.R. Eyler), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 6, 1995.

"Effects of Ion Population upon Mass Assignment and RF/DC Isolation for GC/MS/MS," (with T.P. Griffin), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 9, 1995.

"The Effect of Ion Population on Ion Frequencies in a Quadrupole Ion Trap: Practical Implications for GC/MS/MS," (with S.T. Quarmby), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 9, 1995.

*"Advances in Ion Trap Mass Spectrometry: Photodissociation as a Tool for Structural Elucidation," (with J.L. Stephenson, Jr., M.M. Booth, J.R. Eyler), *ACS National Meeting*, April 2, 1995.

*"The Analysis of Biomolecules Using Electrospray Ionization/Ion Trap Mass Spectrometry and Laser Photodissociation," (with J.L. Stephenson, Jr., M.M. Booth, J.R. Eyler), *ACS National Meeting*, April 5, 1995.

"Effect of Ion Population upon MS/MS Parameters in a Quadrupole Ion Trap," (with T. Griffin), *43rd Annual Conference on Mass Spectrometry and Allied Topics*, May 21, 1995.

"Mass Spectrometry of Porphyrins: Ionization and Appearance Energies," (with J. Ferguson, J. Quirke, J.V. Johnson), *43rd Annual Conference on Mass Spectrometry and Allied Topics*, May 21, 1995.

"Investigations of Mass Shifts in the Ion Trap Mass Spectrometer," (with J.P. DeGnore), *43rd Annual Conference on Mass Spectrometry and Allied Topics*, May 21, 1995.

"Characterization of Acylcarnitines by GC/MS/MS," (with S. Carlson, J.V. Johnson, P. Borum, U. Bernier), *43rd Annual Conference on Mass Spectrometry and Allied Topics*, May 21, 1995.

"Photodissociation of Electrosprayed Ions in a Quadrupole Ion Trap," (with S.M. Boué, J.L. Stephenson), *43rd Annual Conference on Mass Spectrometry and Allied Topics*, May 21, 1995.

"Chemical Reactions vs Collision-Induced Dissociation to Cleave Amide Bonds," (with T.L. Williams, J.L. Stephenson), *43rd Annual Conference on Mass Spectrometry and Allied Topics*, May 21, 1995.

Papers and Seminars Presented - continued

"MALDI of Drug Compounds from Intact Biological Tissue," (with C. Reddick), *43rd Annual Conference on Mass Spectrometry and Allied Topics*, May 21, 1995.

"Mass Spectrometric Studies on Porphyrins and Geoporphyrins," (with J.M.E. Quirke, G.J. Van Berkel), *43rd Annual Conference on Mass Spectrometry and Allied Topics*, May 21, 1995.

"Implications of Ion Population for GC/MS/MS on a Quadrupole Ion Trap," (with S.T. Quarmby), *43rd Annual Conference on Mass Spectrometry and Allied Topics*, May 21, 1995.

"Reactions of NO⁺ in a QITMS: Implications for Biological Metabolic Studies," (with S.F. Silverton, C. Basic, and J.V. Johnson), *43rd Annual Conference on Mass Spectrometry and Allied Topics*, May 21, 1995.

"Characterization of GS-15 and Biomarkers of the Helderberg Formation," (with M. Ospina, D. Powell, J. Channell), *43rd Annual Conference on Mass Spectrometry and Allied Topics*, May 21, 1995.

"DEP/CI-MS/MS Characterization of Sulfonylurea Herbicides," (with J.V. Johnson), *43rd Annual Conference on Mass Spectrometry and Allied Topics*, May 21, 1995.

"The Future of MS/MS," Procter and Gamble, June 27, 1995.

"New Directions in Ion Trap Mass Spectrometry," Bay Area Mass Spectrometry Discussion Group, August 28, 1995.

"Pharmaceutical and Biomedical Applications of Tandem Mass Spectrometry," North Jersey Mass Spectrometry Discussion Group, September 19, 1995.

"Pharmaceutical and Biomedical Applications of Ion Trap Mass Spectrometry," Wyeth-Ayerst, September 20, 1995.

*"New Directions in Ion Trap Mass Spectrometry," FACSS, October 18, 1995.

*"Ion Trap Mass Spectrometry in Pharmaceutical Research," *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 5, 1996.

"Simulation and Animation of Ion Motion in the Ion Trap," (with J.P. DeGnore), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 5, 1996.

"Mass Spectrometry Studies of Distorted Porphyrins," (with J.A. Ferguson and J.M.E. Quirke), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 5, 1996.

"Detection of Drug Compounds from Intact Biological Tissue," (with C.D. Reddick), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 5, 1996.

"Photodissociation in a Quadrupole Ion Trap for the Structural Elucidation of Antibiotics," (with S.M. Boué and J.L. Stephenson), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 5, 1996.

Papers and Seminars Presented - continued

"Selective Cleavage of Peptide Bonds Using Ion/Molecule Reactions," (with T.L. Williams), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 5, 1996.

"Pharmaceutical and Biomedical Applications of Tandem Mass Spectrometry," UF College of Pharmacy, March 21, 1996.

"Fundamental Studies of Ion Injection and Trapping of Electrosprayed Ions on a Quadrupole Ion Trap," (with S.T. Quarmby, J.C. Schwartz, and J.E.P. Syka), *44th Annual Conference on Mass Spectrometry and Allied Topics*, May 13, 1996.

"A Novel Laser Microprobe QITMS for Imaging of Drug Compounds in Intact Biological Tissue," (with C.D. Reddick), *44th Annual Conference on Mass Spectrometry and Allied Topics*, May 13, 1996.

"Increased Sensitivity for Quadrupole Ion Traps by Rapid Removal of RF," (with J.P. DeGnore and J.A. Jones), *44th Annual Conference on Mass Spectrometry and Allied Topics*, May 13, 1996.

"Selective Cleavage of Peptide Bonds Using Ion/Molecule Reactions," (with T.L. Williams), *44th Annual Conference on Mass Spectrometry and Allied Topics*, May 13, 1996.

"Ionization Energies and CID Fragmentation Patterns of Distorted Porphyrins," (with J.A. Ferguson and J.M.E. Quirke), *44th Annual Conference on Mass Spectrometry and Allied Topics*, May 13, 1996.

"Carbohydrate Analysis Using Electrospray/Photodissociation in the Quadrupole Ion Trap," (with S.M. Boué and J.L. Stephenson), *44th Annual Conference on Mass Spectrometry and Allied Topics*, May 13, 1996.

"Internal Energy Effects on Low and High Energy Collision-Induced Dissociation," (with M. Ospina and D.H. Powell), *44th Annual Conference on Mass Spectrometry and Allied Topics*, May 13, 1996.

"Identification of Two Species from the Demethylation of Derivatized Free Carnitine in GC/MS/MS," (with S.M. Carlson, P. Borum, and J.V. Johnson), *44th Annual Conference on Mass Spectrometry and Allied Topics*, May 13, 1996.

"ESI- and MALDI-Quadrupole Ion Trap Mass Spectrometry in Biomedical Research," (with M.M. Booth, S.M. Boué, S.T. Quarmby, J.L. Stephenson, T.L. Williams, and J.V. Johnson) *8th National Symposium on Mass Spectrometry*, (Joensuu, Finland), August 21, 1996.

"Towards Sequencing Analysis of a Series of Conducting Copolymers," (with G. Weerasekera, T.E. Herod, C. Reddick, and R.S. Duran), *ACS National Meeting*, August 28, 1996.

"Protein Conformation and Noncovalent Interactions Studied in a Quadrupole Ion Trap," (with T.L. Williams, A. Rodriguez), *ASMS Sanibel Conference on Quadrupole Ion Traps*, January 26, 1997.

"Ion Injection: From Fundamentals to Biomedical Applications," *ASMS Sanibel Conference on Quadrupole Ion Traps*, January 26, 1997.

Papers and Seminars Presented - continued

"The Trapping of Ions Injected into a Quadrupole Ion Trap: How and Why We Can do Better," (with S.T. Quarmby), *ASMS Sanibel Conference on Quadrupole Ion Traps*, January 26, 1997.

"New Directions in Ion Trap Mass Spectrometry," East Tennessee Mass Spec Discussion Group, February 18, 1997.

"Electrospray Ionization/Ion Trap MS for the Study of Non-Covalent Interactions between Long-Range Electron Transfer Proteins," (with A. Rodriguez and T.L. Williams), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 17, 1997.

"Ion-Molecule Reactions for Structure Determination in a Quadrupole Ion Trap," (with G.B. Guckenberger, V), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 20, 1997.

*"Emerging Techniques in Mass Spectrometry," *NIEHS Superfund Symposium on Emerging Technologies for Assessing Exposure to Environmental Contaminants*, March 21, 1997.

"Comparison of Low and High Energy CID to MALDI Post Source Decay," (with M. Ospina, L. Sapp, N. Denslow, and D. Powell), *45th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1997.

"Ion-Molecule Reactions as a Tool for Determining Sites and Degree of Protein Phosphorylation," (with T.L. Williams), *45th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1997.

"Noncovalent Interactions between Cytochrome c and Cytochrome c Peroxidase by Quadrupole Ion Trap MS," (with A. Rodriguez and T.L. Williams), *45th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1997.

"Distorted Porphyrins: Fragmentation Pathways and Ionization Energies Using Triple Quadrupole Mass Spectrometry," (with J.A. Ferguson and J.M.E. Quirke), *45th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1997.

"Investigation of Free and Acylcarnitines by LC/ESI/MS/MS on a Quadrupole Ion Trap," (with J.E. McClellan, S.T. Quarmby, and P.R. Borum), *45th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1997.

"Improved Ion Ejection Efficiency in the Quadrupole Ion Trap," (with J.P. DeGnore), *45th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1997.

*"Pushing the Bioanalytical Envelope with Ion Trap Mass Spectrometry," (with T.L. Williams, M.A. Rodriguez, C.D. Reddick, F.J. Troendle, J.E. McClellan, and J.J. Mulholland), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 4, 1998.

"Microscale Purge and Trap GC/MS Analysis of Human Skin Emanations," (with M.M. Booth, U.R. Bernier, D.L. Kline, and D.R. Barnard), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 3, 1998.

Papers and Seminars Presented - continued

"Electrospray Ionization/Ion Trap Mass Spectrometry Study of Biomolecules Micelle Formation," (with A. Rodriguez), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 3, 1998.

"Parent and Neutral Loss Monitoring on a Quadrupole Ion Trap Mass Spectrometer," (with S.T. Quarmby and J.E. McClellan), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 4, 1998.

"Bile Acid-Saponin Interactions Studied by Electrospray Ionization/Ion Trap Mass Spectrometry," (with A. Rodriguez), *46th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1998.

"Internal Energy Effects in Collision-Induced Dissociation," (with M. Ospina and D.H. Powell), *46th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 1998.

*"Forensic Identification of Explosives by Electrospray Ionization-Tandem Mass Spectrometry (ESI-MS/MS)," (with J. Yinon and J.E. McClellan), *46th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 1998.

*"Pushing the Bioanalytical Envelope with Ion Trap Mass Spectrometry," (Plenary Lecture), *Symposium on Chemical and Pharmaceutical Structure Analysis*, September 23, 1998.

*"Bioanalytical Chemistry and Ion Trap Mass Spectrometry," *Eastern Analytical Symposium*, November 16, 1998.

"Environmental Trace Analysis of Explosives in Water by Electrospray LC/MS," (with J. Yinon and J.E. McClellan), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 9, 1999.

"Drug Detection in Intact Tissue by MALDI and LD/CI MS/MS," (with F.J. Troendle and C.D. Reddick), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 10, 1999.

"Environmental Trace Analysis of Explosives in Water by Electrospray LC/MS," (with J. Yinon and J.E. McClellan), *14th Conference of the Israel Society for Mass Spectrometry*, March 21, 1999.

"Pushing the Bioanalytical Envelope with Ion Trap Mass Spectrometry," Pennsylvania State University, March 31, 1999.

"Electrospray Mass Spectra of Bile Acids and Related Molecules: Micelles or Aggregates?" (with M.A. Rodriguez), *47th Annual Conference on Mass Spectrometry and Allied Topics*, June 13, 1999.

"Multi-level CID: A Novel Approach for Improving MS/MS on the Quadrupole Ion Trap," (with J.J. Mulholland), *47th Annual Conference on Mass Spectrometry and Allied Topics*, June 13, 1999.

Papers and Seminars Presented - continued

"Trace Analysis of Explosives by Liquid Chromatography/Electrospray Ionization Mass Spectrometry," (with J.E. McClellan, M.A. Holden, J. Yinon), *47th Annual Conference on Mass Spectrometry and Allied Topics*, June 13, 1999.

"Detection of Pharmaceutical Compounds in Tissue by Matrix-Assisted Laser Desorption Ionization (MALDI) and Laser Desorption/Chemical Ionization (LD/CI) MS/MS with a Quadrupole Ion Trap," (with F.J. Troendle and C.D. Reddick), *47th Annual Conference on Mass Spectrometry and Allied Topics*, June 13, 1999.

"Development of a Hybrid Quadrupole Ion Trap/Quadrupole Mass Filter Mass Spectrometer," (with J.P. Murphy III and J.E. McClellan), *47th Annual Conference on Mass Spectrometry and Allied Topics*, June 13, 1999.

*"Fragile Ions in the Quadrupole Ion Trap Mass Spectrometer," (with J.E. McClellan, J.J. Mulholland, J.P. Murphy III), *47th Annual Conference on Mass Spectrometry and Allied Topics*, June 13, 1999.

*"Origin Identification of Explosives by Electrospray LC/MS," (with J.E. McClellan, F. Volk, and J. Yinon), *International Association for Forensic Sciences*, August 25, 1999.

"Bioanalytical Chemistry and Ion Trap Mass Spectrometry," University of Arizona, October 15, 1999.

"Trace Analysis by MS/MS," Weizmann Institute of Science (Israel), February 3, 2000.

"Adduct Ion Formation of Nitro-compounds in Electrospray Ionization-Quadrupole Ion Trap Mass Spectrometry," (with R.F. Reich and J.E. McClellan), *48th Annual Conference on Mass Spectrometry and Allied Topics*, June 12, 2000.

*"HI-RES: A Novel Approach to Ion Ejection on the Quadrupole Ion Trap Mass Spectrometer Capable of Resolving Isobars and Multiply-charged Isotopic Envelopes up to a +15 Charge State," (with J.J. Mulholland), *48th Annual Conference on Mass Spectrometry and Allied Topics*, June 12, 2000.

"Development of a Research-grade Quadrupole Ion Trap Mass Spectrometer with Microelectrospray Ionization Interface," (with K.J. McHale), *48th Annual Conference on Mass Spectrometry and Allied Topics*, June 12, 2000.

"Fundamental Studies of Ion Injection into the Quadrupole Ion Trap," (with J.P. Murphy), *48th Annual Conference on Mass Spectrometry and Allied Topics*, June 14, 2000.

"A Quadrupole Ion Trap Laser Microprobe Instrument for the Mapping of Pharmaceutical Compounds in Intact Tissue," (with J.J. Coon and F.J. Troendle), *48th Annual Conference on Mass Spectrometry and Allied Topics*, June 14, 2000.

"Bioanalytical Chemistry and Ion Trap Mass Spectrometry," University of Utah, July 7, 2000.

Papers and Seminars Presented - continued

*"Liquid Chromatography/Mass Spectrometry (LC/MS) of Explosives: Mechanistics and Applications," (with J. Yinon and J. E. McClellan), *American Chemical Society National Meeting*, August 21, 2000.

"Ion Trap Mass Spectrometry: Fundamentals, Instrumentation, and Bioanalytical Applications," University of Arizona, September 6, 2000.

"Trace Analysis by Tandem Mass Spectrometry," National Center for Forensic Science, Orlando, FL, January 16, 2001.

*"Mapping Small Molecules in Tissue by Laser Desorption/Ion Trap Mass Spectrometry: The Critical Role of MS/MS," (with F.J. Troendle and J.J. Coon), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 5, 2001.

"Examining Wild-type and Transgenic C. Elegans for FMRF amide-like Peptides via Capillary Liquid Chromatography Tandem Mass Spectrometry," (with K.J. McHale, S. Jezzini, C. Li, and A.S. Edison), *49th Annual Conference on Mass Spectrometry and Allied Topics*, May 28, 2001.

"Strategies for High Resolution on the Quadrupole Ion Trap Mass Spectrometer," (with D.N. Dickinson and J.P. Murphy), *49th Annual Conference on Mass Spectrometry and Allied Topics*, May 28, 2001.

"A Comprehensive Study of Space Charge and Peak Splitting in the Quadrupole Ion Trap," (with J.P. Murphy, S.T. Quarumby, and G.B. Guckenberger), *49th Annual Conference on Mass Spectrometry and Allied Topics*, May 28, 2001.

"A Quadrupole Ion Trap Mass Spectrometer for Quantitative Analysis of Nitrogen-Purged Compartments within the Space Shuttle," (with A.K. Ottens and T.P. Griffin), *49th Annual Conference on Mass Spectrometry and Allied Topics*, May 28, 2001.

"Sampling Strategies for SPME GC/MS Investigations of Host Emanations in the Role of Mosquito Attraction," (with M.T. Huml, U.R. Bernier, and D.R. Barnard), *49th Annual Conference on Mass Spectrometry and Allied Topics*, May 31, 2001.

"Trace Detection and Quantitation of Explosives Using LC/APCI-MS," (with R.F. Reich), *49th Annual Conference on Mass Spectrometry and Allied Topics*, May 31, 2001.

"Laser Desorption Mass Spectrometric Screening for Biomarkers in Diagnosis of Inherited Metabolic Disorders," (with M.W. Belford), *49th Annual Conference on Mass Spectrometry and Allied Topics*, May 31, 2001.

"Laser Microprobe Quadrupole Ion Trap Mass Spectrometry for the Mapping of Environmental Toxicants from the Intestinal Tissue of Channel Catfish," (with J.J. Coon and M.O. James), *49th Annual Conference on Mass Spectrometry and Allied Topics*, May 31, 2001.

"Strategies for High Resolution on the Quadrupole Ion Trap Mass Spectrometer," (with D.N. Dickinson and J.P. Murphy), *FACSS Meeting*, October 12, 2001.

Papers and Seminars Presented - continued

"The Development of a Novel Atmospheric Pressure-Laser Desorption/Chemical Ionization (AP-LD/CI) Interface for Imaging Mass Spectrometry," (with J.J. Coon, M.O. James, and W.W. Harrison), *17th Asilomar Conference on Mass Spectrometry*, October 22, 2001.

*"Determining the Age of Ballpoint Ink on Questioned Documents by LC/MS," (with A. Mitchell and I. Tebbett), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 18, 2002.

"The Role of Clustering on Ion Behavior in FAIMS," (with L.C. Rorrer III, R. Guevremont, and D. Barnett), *50th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2002.

"The Forensic Analysis of Ballpoint Inks by LC/MS," (with A. Mitchell and I. Tebbett), *50th Annual Conference on Mass Spectrometry and Allied Topics*, June 5, 2002.

"Aerogels as Novel Polymeric Matrices for Laser Desorption," (with M.W. Belford), *50th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2002.

*"Aerogels as Novel Polymeric Matrices for Laser Desorption," (with M.W. Belford), *Desorption 2002 International Meeting*, September 4, 2002.

*"Ion Mobility At High Fields (FAIMS): Fundamentals and Analytical Capabilities For Electrospray And Laser Desorption Mass Spectrometry," (with M.W. Belford, C.K. Hilton and L.C. Rorer III), *Florida ACS Meeting and Exposition*, May 11, 2003.

"Identification by GC/MS of Chemicals from Human and Avian Hosts that Attract Mosquitoes," (with S.M. Otero, U.R. Bernier, D.L. Kline, and D.R. Barnard), *51st Annual Conference on Mass Spectrometry and Allied Topics*, June 9, 2003.

"Reduction of Chemical Background from Matrix-Assisted Laser Desorption Ionization with High-Field Asymmetric Waveform Ion Mobility Spectrometry on a Quadrupole Ion Trap Mass Spectrometer," (with M.W. Belford), *51st Annual Conference on Mass Spectrometry and Allied Topics*, June 9, 2003.

"Characterization of the Lipid Content in Peripheral Nerve Tissue from Rats Exposed to Dichloroacetate," (with T.A. Garrett, X. Guo, and P.W. Stacpoole), *51st Annual Conference on Mass Spectrometry and Allied Topics*, June 10, 2003.

"High resolution modeling of the entrance and exit apertures in a quadrupole ion trap using SIMION 7.0," (with C.K. Hilton), *51st Annual Conference on Mass Spectrometry and Allied Topics*, June 11, 2003.

"Development of an online gradient extraction technique for determining relative age of ballpoint pen inks," (with A. Mitchell), *51st Annual Conference on Mass Spectrometry and Allied Topics*, June 12, 2003.

*"Ion Mobility at High Fields (FAIMS): Fundamentals and Analytical Capabilities," (with M.W. Belford and R. Guevremont), *51st Annual Conference on Mass Spectrometry and Allied Topics*, June 12, 2003.

Papers and Seminars Presented - continued

*"High-field Asymmetric Waveform Ion Mobility Spectrometry (FAIMS): Mass Spectrometry Complement or Replacement?" (with C.K. Hilton and A. Mitchell), *4th Workshop on Harsh-Environment Mass Spectrometry*, October 9, 2003.

*"Laser Desorption and Ion Analysis at Atmospheric Pressure," (with C.K. Hilton, A. Mitchell, and M.W. Belford), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 9, 2004.

"Trace Analysis of Thiocyanate Ion, a Possible Biomarker for Cystic Fibrosis, by ESI/FAIMS/MS (Electrospray Ionization/High-Field Asymmetric/Waveform Ion Mobility Spectrometry/Mass Spectrometry," (with F.A. Kero, C.K. Hilton, and G.E. Conner), *Florida ACS Meeting and Exposition*, May 7, 2004.

"Exploring AP/MALDI/MS and AP/MALDI/FAIMS/MS as Novel Instrumental Approaches for Biological Agent Analysis," (with A.C. Mitchell-Roberts), *52nd Annual Conference on Mass Spectrometry and Allied Topics*, May 24, 2004.

"Practical Implications of Fundamental Ion Motion in High-Field Asymmetric/Waveform Ion Mobility Spectrometry (FAIMS)," (with C.K. Hilton and R. Guevremont), *52nd Annual Conference on Mass Spectrometry and Allied Topics*, May 24, 2004.

"Trace Analysis of Thiocyanate Ion, a Possible Biomarker for Cystic Fibrosis, by ESI/FAIMS/MS," (with F.A. Kero, C.K. Hilton, and G.E. Conner), *52nd Annual Conference on Mass Spectrometry and Allied Topics*, May 24, 2004.

"Development of a Substrate for Surface-Enhanced Laser Desorption/Ionization (SELDI) with Affinity for Selected Analytes," (with H. Yu), *52nd Annual Conference on Mass Spectrometry and Allied Topics*, May 26, 2004.

"Controlling the Degree of Head Group Fragmentation of Phospholipids in Electrospray Ionization Mass Spectrometry," (with T.J. Garrett and M.H. Merves), *52nd Annual Conference on Mass Spectrometry and Allied Topics*, May 27, 2004.

"Human Kinetics of Environmental Levels of ¹³C₂-Dichloroacetate as Determined by GC/MS/MS in ECNCI Mode," (with M. Jia, G.N. Henderson, P.A. Chadik, and P.W. Stacpoole), *52nd Annual Conference on Mass Spectrometry and Allied Topics*, May 27, 2004.

"Characterization of Post-translational Modification of SERCA-CA²⁺ATPase by Mass Spectrometry," (with H.L. Apontee, D.G. Taylor, H.J. Knot, and N.D. Denslow), *52nd Annual Conference on Mass Spectrometry and Allied Topics*, May 27, 2004.

*"Mapping Small Molecules in Tissue by Laser Desorption/Ionization Tandem Mass Spectrometry (MS/MS)," (Plenary Lecture), *2nd Annual Conference of the Taiwan Society for Mass Spectrometry*, June 15, 2004.

Papers and Seminars Presented - continued

*"Ion Trap Mass Spectrometry: Fundamentals, Instrumentation, and Bio-analytical Applications)," (Plenary Lecture), 2nd Annual Conference of the Taiwan Society for Mass Spectrometry, June 15, 2004.

"Recent Advances in Ion Trap Mass Spectrometry," National Chung-Hsing University (Taiwan), June 18, 2004.

"Human Levels of Halocacetic Acids from Chlorinated Drinking Water," (with G.N. Henderson, Bonnie Coats, P.A. Chadik, M. Jia, M. Chadha, and P.W. Stacpoole), 4th International ISSX Meeting, September 1, 2004.

*"Mapping Small Molecules in Intact Tissue by Laser Microprobe Ion Trap Tandem Mass Spectrometry," (with T.J. Garrett), *Symposium on Chemical and Pharmaceutical Structure Analysis*, October 19, 2004

*"The Role of FAIMS and MS/MS in Biological Agent Analysis by AP-MALDI," (with A.C. Mitchell-Roberts), 17th Sanibel Conference on Mass Spectrometry: Mass Spectrometry in Forensic Science and Counterterrorism, January 29, 2005.

*"Ion Mobility: Innovations in Instrumentation and Applications," *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 3, 2005.

*"Imaging Mass Spectrometry: The Role of MS./MS," (with T.J. Garrett), *Proteomics Seminar Series*, Boston MA, May 2, 2005.

*"Imaging Mass Spectrometry: The Role of MS./MS," (with T.J. Garrett), *Proteomics Seminar Series*, Somerset NJ, May 3, 2005.

*"Imaging Mass Spectrometry: The Role of MS./MS," (with T.J. Garrett), *Proteomics Seminar Series*, Philadelphia PA, May 4, 2005.

*"Imaging Mass Spectrometry: The Role of MS./MS," (with T.J. Garrett), *Proteomics Seminar Series*, Bethesda MD, May 5, 2005.

"Quantitative Analysis of Thiocyanate Ion in Exhaled Breath Condensates by Electrospray Ionization Tandem Mass Spectrometry," (with F.A. Kero, L.K. Bajpai, M. Booth, D. Dennis, and G.E. Conner), *Florida ACS Meeting and Exposition*, May 6, 2005.

"Polymer surface modification for MALDI sample preparation," (with Hong Yu), *53rd Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 2005.

*"Factors affecting transmission and resolution in high-field asymmetric waveform ion mobility spectrometry (FAIMS)," (with C. Hilton and R.Guevremont), *53rd Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 2005.

"GC/MS/MS Characterization of Steroids and their Metabolites in Alligators," (with J.A. Bowden, M.P. Gunderson, and L.J. Guillette, Jr), *53rd Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 2005.

Papers and Seminars Presented - continued

"Imaging Mass Spectrometry with LD/MSⁿ at Different Pressure Regimes," (with T.J. Garrett, V. Kovtoun, H. Bui, M.C. Prieto Conaway, K. Miller, and G. Stafford), *53rd Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 2005.

"Investigations of Ionization Techniques for the Analysis of Biological Agents by High Field Asymmetric Waveform Ion Mobility (FAIMS) Mass Spectrometry," (with A.C. Mitchell-Roberts), *53rd Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 2005.

"Identification of Candidate Attractant Compounds from Chicken Feathers for the Mosquito Vector of the West Nile Virus by GC/MS," (with S.M. Otero Santos, U. Bernier, S.A. Allan, B. Quinn, M.M. Booth, D.L. Kline, and D.R. Barnard), *53rd Annual Conference on Mass Spectrometry and Allied Topics*, June 8, 2005.

"Kinetics of orally or intravenously administered 1, 2-¹³C-DCA in human," (with M. Jia, B. Coats, M. Chadha, B. Frentzen, P.A. Chadik, G.N. Henderson, and P.W. Stacpoole), *53rd Annual Conference on Mass Spectrometry and Allied Topics*, June 8, 2005.

"ESI/MS/MS monitoring of trace levels of thiocyanate and other low mass inorganic ions in exhaled breath," (with F.A. Kero, L.K. Bajpai, M.M. Booth, D.M. Dennis, and G.E. Conner), *53rd Annual Conference on Mass Spectrometry and Allied Topics*, June 9, 2005.

"Strategies to reduce the effects of field imperfections in quadrupole ion traps," (with D.L. Baluya, C.K. Hilton, B.J. Shortt, M.R. Darrach, and A. Chutjian), *53rd Annual Conference on Mass Spectrometry and Allied Topics*, June 9, 2005.

*"Compound-Specific Imaging of Biological Tissue by Laser Microprobe Mass Spectrometry," *UF Biochemistry Seminar*, February 14, 2006.

"Development of Matrix-Matched Standards for the Quantification of Cinnamaldehyde in Commercial Ground Cinnamon in Headspace-SPME-GC/MS," (with J.M. Ocariz, E.M. MacDonald, A.A. Bartczak, J.J. Hammersand, Y. Wang, F.A. Kero, K.J. Ziegler, and K.R. Williams), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 13, 2006.

*"From Residual Gas Analyzer to an Analytical Workhorse - The Quadrupole Mass Spectrometer," *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 15, 2006.

*"Imaging Mass Spectrometry with LD/MSⁿ on a Linear Ion Trap," (with T.J. Garrett), *Florida ACS Meeting and Exposition*, May 12, 2006.

"Development of a High-Throughput SPE-LC-MS/MS Method to Quantitate Trace Levels of Endogenous Thiocyanate in Complex Biological Fluids," (with F.A. Kero, M.M. Booth, D.M. Dennis, B.A. Goldberger, and G.E. Conner), *Florida ACS Meeting and Exposition*, May 12, 2006.

"Identification of the Most Abundant Chemicals in Commercial Ground Cinnamon obtained by Liquid Extraction and Gas Chromatography/Mass Spectrometry," (with A.A. Bartczak, E.M. MacDonald, Y. Wang, F.A. Kero, and K.R. Williams), *Florida ACS Meeting and Exposition*, May 12, 2006.

Papers and Seminars Presented - continued

“Effect of Carrier Gas Composition in FAIMS/MS on Separation of Charge States and Conformers of Intact Proteins,” (with R. Landgraf and C.K. Hilton), *Florida ACS Meeting and Exposition*, May 12, 2006.

“Lipid Profiling in *Aplysia californica* using Intermediate-Pressure MALDI with a Linear Ion Trap,” (with T.J. Garrett and L. Moroz), *Florida ACS Meeting and Exposition*, May 12, 2006.

“The Application of G/MS to Quantify 17 β Estradiol within the Thyroid-Gonad Signalling Pathway of the American Alligator (*Alligator Mississippiensis*)”, (with J.A. Bowden, D.S. Bermudez and L.J. Guillette), *Florida ACS Meeting and Exposition*, May 12, 2006.

“Structure-Activity Relationships of Tryptic Peptide Behavior in High-Field Asymmetric Waveform Ion Mobility Spectrometry (FAIMS), (with J.A. Garrett and C.K. Hilton), *54th Annual Conference on Mass Spectrometry and Allied Topics*, May 29, 2006.

“Use of Ion Mobility Spectrometry to Characterize Odor Plumes From Field Release of Compounds that Modify Mosquito Host-Seeking Behavior,” (with S.M. Otero, U.R. Bernier), *54th Annual Conference on Mass Spectrometry and Allied Topics*, May 29, 2006.

“The Application of G/MS to Quantify 17 β Estradiol within the Thyroid-Gonad Signalling Pathway of the American Alligator (*Alligator Mississippiensis*)”, (with J.A. Bowden, D.S. Bermudez and L.J. Guillette), *54th Annual Conference on Mass Spectrometry and Allied Topics*, May 29, 2006.

“Effect of Carrier Gas Composition in FAIMS/MS on Separation of Charge States and Conformers of Intact Proteins,” (with R. Landgraf and C.K. Hilton), *54th Annual Conference on Mass Spectrometry and Allied Topics*, May 29, 2006.

“Characterization of Explosive Compounds Using High-Field Asymmetric-Waveform Ion Mobility Spectrometry,” (with J.J. Boock and C.K. Hilton), *54th Annual Conference on Mass Spectrometry and Allied Topics*, May 29, 2006.

“Development of a High-Throughput SPE-LC-MS/MS Method to Quantify Trace Levels of Endogenous Thiocyanate in Complex Biological Fluids,” (with F.A. Kero, M.M.Booth, D.M. Dennis, B.A. Goldberger, and G.E. Conner), *54th Annual Conference on Mass Spectrometry and Allied Topics*, May 29, 2006.

*”Imaging Mass Spectrometry with a New Intermediate-Pressure MALDI Linear Ion Trap Mass Spectrometer,” (with T.J. Garrett, V.V. Kovtoun, H. Bui, N. Izgarian, M.C. Prieto-Conaway, and G.C. Stafford), *54th Annual Conference on Mass Spectrometry and Allied Topics*, May 31, 2006.

“Lipid Profiling in *Aplysia californica* using Intermediate-Pressure MALDI with a Linear Ion Trap,” (with M.P. Napolitano, T.J. Garrett and L. Moroz), *54th Annual Conference on Mass Spectrometry and Allied Topics*, May 31, 2006.

“Surface Modification of an RF Polymer with Aptamers for MALDI Sample Preparation,” (with H. Yu, J.C. Yang, W. Tan, and D. Magparangalan), *54th Annual Conference on Mass Spectrometry and Allied Topics*, May 31, 2006.

Papers and Seminars Presented - continued

“Computer-Controlled Multi-Channel Inkjet Printing of MALDI Matrices for Imaging Mass Spectrometry,” (with D. Baluya and T.J. Garrett), *54th Annual Conference on Mass Spectrometry and Allied Topics*, May 31, 2006.

*“Imaging Lipids in Nerve Tissue by Intermediate Pressure LD/MSⁿ on a Linear Ion Trap,” (with T.J. Garrett), *54th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 2006.

*“Utility of Multistage Mass Spectrometric Imaging by MALDI Ion-Trap MS in the Analysis of Drugs and Metabolites in Biological Tissues” (with D. Drexler, T.J. Garrett, J. Cantone, R. Deters, J. Mitroka, M. Prieto Conaway, S. Adams, and M. Sanders), *54th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 2006.

“The Effects of Temperature Control in FAIMS Separation,” (with C.K. Hilton), *54th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 2006.

“FAIMS: Concepts, Parameters, and Fundamentals,” (with C.K. Hilton), *15th International Conference on Ion Mobility Spectrometry*, July 24, 2006.

*“Approved Terminology to be Used to Describe Ion Mobility Spectrometry Processes and Instrumentation” (with C.S. Harden, G.A. Eiceman, C.L.P. Thomas, and H.H.Hill), *15th International Conference on Ion Mobility Spectrometry*, July 25, 2006.

“Ion Mobility Spectrometry/High-Field Asymmetric-Waveform Ion Mobility Spectrometry/Ion Trap Mass Spectrometry (IMS/FAIMS/ITMS) – Concepts, Challenges, and Benefits of a Novel Multistage Instrument” (with C.K. Hilton, M.J. Pollard, and H.H.Hill), *15th International Conference on Ion Mobility Spectrometry*, July 27, 2006.

“IMS-FAIMS-QIT Mass Spectrometry” (with M.J. Pollard, C.K. Hilton, and H.H. Hill), *15th International Conference on Ion Mobility Spectrometry*, July 27, 2006.

*“Compound-Specific Imaging of Biological Tissue by Laser Microprobe Mass Spectrometry,” (with T.J. Garrett), *Scripps Florida Collaborative Seminar Series*, August 10, 2006.

*“Imaging Mass Spectrometry with a New Intermediate-Pressure MALDI Linear Ion Trap Mass Spectrometer,” (with T.J. Garrett, V.V. Kovtoun, H. Bui, N. Izgarian, M.C. Prieto-Conaway, and G.C. Stafford), *17th International Mass Spectrometry Conference*, Prague, August 28, 2006.

*“Compound-Specific Imaging of Biological Tissue by Laser Microprobe Mass Spectrometry,” *UF Topics in Cancer Cell Biology Seminar Series*, UF, September 8, 2006.

*“Characterization of Explosive Compounds Using High-Field Asymmetric-Waveform Ion Mobility Spectrometry,” (with J.J. Boock and C.K. Hilton), *FACSS*, September 28, 2006.

*“MALDI Imaging: Higher Pressures, Ion Trap MSⁿ, and Applications to Lipids,” (with T.J. Garrett, D. Baluya, M.P. Napolitano, R.R. Landgraf, and D. Magparangalan), *19th Sanibel Conference on Mass Spectrometry*, January 21, 2007.

Papers and Seminars Presented - continued

"Identifying Lipid Changes in Spinal Cord as a Result of Dichloroacetate Treatment using Intermediate-Pressure MALDI Coupled to a Linear Ion Trap," (with R.R Landgraf, T.J. Garrett, and P.W. Stacpoole), *19th Sanibel Conference on Mass Spectrometry*, January 20, 2007.

*Recent Developments in High-Field Ion Mobility (FAIMS): Instrumentation and Applications (with J.J. Boock, J.A. Garrett, C.K. Hilton, R.R. Landgraf, E.F. Molina, and S.M. Otero, *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, February 26, 2007.

**Practical Issues for the Structural Characterization of Phospholipids by Tandem Mass Spectrometry," (with T.J. Garrett), *Moffitt Symposium on Mass Spectrometry*, April 12, 2007.

"Separation of Tryptic Peptide Ions with High-Field Asymmetric-Waveform Ion Mobility Mass Spectrometry (FAIMS)," (with J.A. Garrett, C.K. Hilton), *Moffitt Symposium on Mass Spectrometry*, April 12, 2007.

"Identifying Lipid Changes in Nerve Tissue as a Result of Dichloroacetate Treatment using IP-MALDI Coupled to a Linear Ion Trap," (with R.R. Landgraf, T.J. Garrett, P.W. Stacpoole), *Moffitt Symposium on Mass Spectrometry*, April 12, 2007.

"The Application of Gas Chromatography Mass Spectrometry for the Development of a Comprehensive Steroid Profile," (with J.A. Bowden, D.S. Bermudez, L.J. Guillette Jr.), *Moffitt Symposium on Mass Spectrometry*, April 12, 2007.

**Tissue Imaging by Intermediate-Pressure MALDI/Linear Ion Trap Tandem Mass Spectrometry," *Moffitt Symposium on Mass Spectrometry*, April 13, 2007.

**High-Field Asymmetric Waveform Ion Mobility Spectrometry: An Emerging Analytical Tool," (with C.K. Hilton), *Moffitt Symposium on Mass Spectrometry*, April 13, 2007.

"Sample Preparation Strategies For the Development Of A Comprehensive Steroid Profile Using GC/MS," (with John A. Bowden; Dieldrich S. Bermudez; Louis J. Guillette Jr.), *Florida ACS Meeting and Exposition*, May 10, 2007.

"Novel Charge-State Separation of Tryptic Peptide Ions B by High-Field Asymmetric-Waveform Ion Mobility Spectrometry," (with Jennifer A. Garrett; Christopher K. Hilton; Matthew J. Pollard; Herbert H. Hill, Jr.), *Florida ACS Meeting and Exposition*, May 10, 2007.

"Mass Spectrometric Imaging Of Lipids On Single Cells," (with Michael P. Napolitano; Peter Lovell; Leonid L. Moroz), *Florida ACS Meeting and Exposition*, May 10, 2007.

"Evaluation of the effects of celecoxib on the 3-sulfate-17-B-estradiol / 17-sulfate-17-B-estradiol ratio in urine and plasma by liquid chromatography-tandem mass spectrometry," (with Austin Turner, Timothy J. Garrett, Margaret Crouch), *Florida ACS Meeting and Exposition*, May 10, 2007.

"From Blood to Breath: the Detection of THC in Exhaled Breath by Adsorbent Tube LC-MS/MS," (with Frank A. Kero; Timothy E. Morey; W. Brit Smith; Matthew M. Booth; Bruce A. Goldberger; Richard J. Melker; Donn M. Dennis), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2007.

Papers and Seminars Presented - continued

"Identifying Lipid Changes in Nerve Tissue as a Result of Dichloroacetate Treatment using IP-MALDI Coupled to a Linear Ion Trap," (with Rachelle R. Landgraf; Timothy J. Garrett; Peter W. Stacpoole), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2007.

"Mass Spectrometric Imaging of Cultured Neurons from *Aplysia californica*," (with Michael P. Napolitano; Peter Lovell; Leonid L. Moroz), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 2007.

"Use of Imaging Tandem Mass Spectrometry for the Elucidation of Chemical Species Related to Age-related Macular Degeneration (AMD)," (with Timothy J. Garrett; William W. Dawson), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 2007.

"Evaluation of Solid-Phase Microextraction/On-Fiber Derivatization/Gas Chromatography/Mass Spectrometry for Profiling Steroids and their Metabolites in the American Alligator," (with John A. Bowden; Dieldrich S. Bermudez; Louis J. Guillette Jr.), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 2007.

"Evaluation of an Atmospheric Pressure Resistive Glass Ion Guide to Increase Ion Transfer Efficiency," (with Christopher Hilton; Marilyn Prieto), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2007.

"Evaluation of a Novel Vortex-Inducing Air Amplifier for Enhanced Atmospheric-Pressure Ion Source Performance," (with Marilyn Prieto; Christopher Hilton; David Powell), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 5, 2007.

"Separation of Post-Translationally Modified and Analogous Tryptic Peptide Ions by High-Field Asymmetric-Waveform Ion Mobility/ Mass Spectrometry," (with Jennifer A. Garrett; Christopher K. Hilton; Matthew J. Pollard; Herbert H. Hill, Jr.), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 5, 2007.

"UPLC and monolithic HPLC/ESI-MS and MS/MS determination of carnitine and acylcarnitines," (with Soledad Cerutti; Timothy Garret; Peggy R. Borum; Jodie V. Johnson; David H. Powell), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 5, 2007.

"Investigation of Analyte Extraction and Migration in Tissue Imaging by MALDI-MS," (with Daniel P. Magparangalan; Dodge L. Baluya; Dieter M. Drexler), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2007.

"Perspectives for Quantitative Tissue Imaging by Intermediate-Pressure MALDI/Linear Ion Trap Tandem Mass Spectrometry," (with Timothy J. Garrett; Daniel P. Magparangalan; Dodge L. Baluya; Rachelle R. Landgraf; Michael P. Napolitano), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2007.

"Investigation of Buffer Gas Pressure Tailoring for Quadrupole Ion Trap Mass Spectrometry," (with Dodge L. Baluya), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2007.

Papers and Seminars Presented - continued

“Characterization of Explosive Compounds Using an Ion Mobility Spectrometer with High-Field Asymmetric Waveform Ion Mobility Spectrometry/Mass Spectrometry,” (with Jared J. Boock; Alex Wu), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2007.

“Evaluation of the effects of celecoxib on the 3-sulfate-17-B-estradiol / 17-sulfate-17-B-estradiol ratio in urine and plasma by liquid chromatography-tandem mass spectrometry,” (with Austin Turner, Timothy J. Garrett, Margaret Crouch), *55th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2007.

“Development of a Novel Screening Method for Quality Assurance of Exhaled Breath Condensates in the Clinical Laboratory,” (with F.A. Kero, M.M. Booth, B.A. Goldberger, and D.D. Dennis), *ASMS Asilomar Conference*, September 15, 2007.

“Separation of phosphopeptides and their non-phosphorylated analogues using temperature-controlled high-field asymmetric-waveform ion mobility spectrometry”, (with J.G. Bryant), *ASMS Sanibel Conference on Ion Mobility and Mass Spectrometry*, January 20, 2008.

“Evaluation of High-Field Asymmetric-Waveform Ion Mobility Spectrometry/Mass Spectrometry for Explosives Analysis”, (with C.-H. Wu), *ASMS Sanibel Conference on Ion Mobility and Mass Spectrometry*, January 20, 2008.

“Quantitative Imaging of Cocaine and Its Metabolites in Postmortem Brain Tissue by Intermediate-Pressure MALDI/Linear Ion Trap Tandem Mass Spectrometry”, (with R.F. Reich), *Florida ACS Meeting and Exposition*, May 9, 2008.

“Rapid Phosphopeptide Analysis by High-Field Asymmetric-Waveform Ion Mobility Spectrometry Mass Spectrometry (FAIMS-MS)”, (with J.G. Bryant), *Florida ACS Meeting and Exposition*, May 9, 2008.

“Evaluation of Microwave Accelerated Derivatization with Solvent for a Multi-Class Analysis of Steroids the by Gas Chromatography/Mass Spectrometry (GC/MS)”, (with D.C. Mora-Montero, J.A. Bowden, D.M. Colosi, and T.J. Garrett), *Florida ACS Meeting and Exposition*, May 9, 2008.

“Detection of Explosives Compounds with High-Field Asymmetric Waveform Ion Mobility Spectrometry/Mass Spectrometry”, (with C.-H. Wu), *American Academy of Forensic Sciences Conference*, March 16, 2008.

“Quantitative Imaging of Cocaine and Its Metabolites in Postmortem Brain Tissue by Intermediate-Pressure MALDI/Linear Ion Trap Tandem Mass Spectrometry,” (with R. F. Reich, K. Cudzilo), *56th Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 2008.

“Imaging MALDI-MS: Investigation of Analyte Extraction Efficiency through Various Tissue Types”, (with D. P. Magparagan, D.M. Drexler, *56th Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 2008.

“Quantitation of Lipids in Nerve Tissue using IP-MALDI-LIT-MS”, (with R.R. Landgraf, T.J. Garrett, P.W. Stacpoole), *56th Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 2008.

Papers and Seminars Presented - continued

“Characterization of the distributed plasma ionization source (DPIS) for the analysis of explosives”, (with A. C. Wu, M. Prieto, L. Rorrer), *56th Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 2008.

“Evaluation of an APCI-FAIMS-MS Method for the Detection of the Pyrethroids, Bifenthrin and Permethrin”, (with E. Molina, U. R. Bernier, B.P. Quinn), *56th Annual Conference on Mass Spectrometry and Allied Topics*, June 5, 2008.

“Evaluating phosphopeptide separation from a tryptic digest using high-field asymmetric-waveform ion mobility spectrometry (FAIMS)”, (with J. Bryant), *56th Annual Conference on Mass Spectrometry and Allied Topics*, June 5, 2008.

“Evaluation of Microwave Accelerated Derivatization (MAD) for the Comprehensive Analysis of Steroids using Gas Chromatography/Mass Spectrometry”, (with J. Bowden, P. Borum, T. Garrett), *56th Annual Conference on Mass Spectrometry and Allied Topics*, June 5, 2008.

“Localization of endogenous acetylcarnitine in rat brain tissue using imaging mass spectrometry with porphyrins as a MALDI matrix”, (with D. Pirman, P. Borum, T. Garrett), *56th Annual Conference on Mass Spectrometry and Allied Topics*, June 3, 2008.

“Identifying lipids and other small molecules from imaging mass spectrometry experiments using tandem mass spectrometry and exact mass”, (with T. Garrett, M. Gu, W. W. Dawson, D. H. Powell), *56th Annual Conference on Mass Spectrometry and Allied Topics*, June 3, 2008.

“Metabolic profiling of carnitine, aminoacids, and phospholipids-based compounds in plasma samples by UHPLC and monolithic HPLC/ESI/APCI-MS”, (with E.S. Cerutti, T. Garrett, P. Borum, J.V. Johnson, D.H. Powell), *56th Annual Conference on Mass Spectrometry and Allied Topics*, June 3, 2008.

“Reduction of nonlinear resonance effects in the 3D quadrupole ion trap with microscreened endcap holes and optimized endcap-to-endcap spacing”, (with D. L. Baluya), *56th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2008.

“Evaluation of Linear Injection and Orthogonal Injection into Planar FAIMS-MS”, (with L. Rorrer, M. Prieto), *56th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2008.

“Design of a Hemispherical FAIMS Cell”, (with M. Prieto, J. Bryant, T. Prox), *56th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2008.

“Separation and Characterization of Explosives Compounds Using High-Field Asymmetric Waveform Ion Mobility Spectrometry/Mass Spectrometry”, (with C.-H. Wu), *American Chemical Society Annual Meeting*, August 11, 2008.

“Imaging Mass Spectrometry,” Washington State University, October 27, 2008.

Papers and Seminars Presented - continued

“Imaging of Lipids in Spinal Cord using Intermediate Pressure MALDI-LIT/Orbitrap MS”, (with R.R. Landgraf, T.J. Garrett, P.W. Stacpoole, and M.C. Prieto-Conaway), *ASMS Sanibel Conference on Lipids and Lipidomics*, January 25, 2009.

“Global metabolic profiling in plasma samples of patients before and after ketogenic diet therapy by monolithic-C₁₈ LC and HILIC/(+)ESI-MS”, (with S. Cerutti, P.R. Borum, J.V. Johnson, and D.H. Powell), *Moffitt Symposium on Mass Spectrometry*, February 13, 2009.

“Quantitative Mass Spectrometric Imaging of Drugs of Abuse in Postmortem Human Brain Tissue”, (with R.F. Reich), *American Academy of Forensic Sciences Conference*, February 20, 2009.

“Evaluation of Different Atmospheric Pressure Ionization Sources for Use in Explosives Detection”, (with A.C Wu), *American Academy of Forensic Sciences Conference*, February 21, 2009.

“Hemispherical FAIMS/MS for Detection of Explosives”, (with M. Prieto), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 8, 2009.

“Tandem Mass Spectrometry of Doubly Cationized, Singly Charged Ions Found in Painted Works of Art”, (with P.-C. Kuo, M.P. Napolitano, and Julie Arslanoglu), *Florida ACS Meeting and Exposition*, May 8, 2009.

“Design of a Spherical FAIMS Cell”, (with M. Prieto), *Florida ACS Meeting and Exposition*, May 8, 2009.

“MALDI Tandem MS Analysis of Cellulose and Related Biomolecules: Potential for MS Imaging of Cellulosic Tissues”, (with K.A. Lunsford and G.F. Peter), *Florida ACS Meeting and Exposition*, May 8, 2009.

“Monolithic-C₁₈ LC and HILIC/(+)ESI-MS metabolic profiling of plasma samples”, (with S. Cerutti, J.V. Johnson, P.R. Borum, and D.H. Powell), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2009.

“Tandem Mass Spectrometry of Doubly Cationized, Singly Charged Ions Found in Painted Works of Art”, (with P.-C. Kuo, M.P. Napolitano, and Julie Arslanoglu), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 2009.

“Tandem Mass Spectrometry and High Resolution/Mass Accuracy Analysis of Metal-Cluster Ions of Pigments from Painted Works of Art”, (with M.P. Napolitano, P.-C. Kuo, and J. Arslanoglu), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 2009.

“Analysis of Large Peptides by MALDI using a Linear Quadrupole Ion Trap with Mass Range Extension”, (with D.P. Magparangalan, T.J. Garrett, and D.M. Drexler), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 2009.

“Design of a Spherical FAIMS cell”, (with M. Prieto), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 2009.

Papers and Seminars Presented - continued

“Comparison of Square and Sinusoidal Waveforms on a Miniaturized FAIMS Planar Cell for Explosives Detection”, (with C.-W. Tsai, M. Prieto, I. Kaminsky, R. Ferran, and S. Boumsellek), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 2009.

“MALDI Tandem MS Analysis of Cellulose and Related Biomolecules: Potential for MS Imaging of Cellulosic Tissues”, (with K.A. Lunsford and G.F. Peter), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 3, 2009.

“The localization of lipids in eye flat-mounts by imaging mass spectrometry”, (with T.J. Garrett and W.W. Dawson), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2009.

“Quantitative mass spectrometric imaging of endogenous acetylcarnitine from piglet brain tissue using acetyl-d3-carnitine as an internal standard”, (with D.A. Pirman and P.R. Borum), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2009.

“Development and Evaluation of a DMS-based Method for the Detection of Insecticides”, (with E.F. Molina and U.R. Bernier), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2009.

“MALDI-MSⁿ Quantitation by Selective Isolation of Analyte and Internal Standard Ions Using a Multi-Notch SWIFT Waveform”, (with R.F. Reich and K.N. Cromwell), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2009.

“Optimization of Ion Injection Into a Planar FAIMS Cell”, (with L.C. Rorrer III), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2009.

“The Use of MSⁿ and High Resolution MS for the Identification and Imaging of Lipids in Spinal Cord”, (with R.R. Landgraf, T.J. Garrett, P.W. Stacpoole, and M.C. Prieto Conaway), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2009.

“Global metabolic profiling in plasma samples of patients before and after ketogenic diet therapy by monolithic-C₁₈ LC and HILIC/(+)ESI-MS”, (with S. Cerutti, P.R. Borum, J.V. Johnson, and D.H. Powell), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2009.

“Study on Factors Affecting Separation and Detection of Explosives by High-field Asymmetric Waveform Ion Mobility Spectrometry (FAIMS)/ Mass Spectrometry”, (with A.C. Wu), *57th Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2009.

*“Mass Spectrometric Imaging of Lipids in the Eye”, (with T.J. Garrett), *FACSS*, October 20, 2009.

*“Mass Spectrometric Imaging by MALDI/MS/MS: Bioanalysis and Quantitation” (with T.J. Garrett, R.F. Reich, D. Magparangalan, R.R. Landgraf, and D. Pirman), *Eastern Analytical Symposium*, November 17, 2009.

“Imaging Mass Spectrometry,” Florida International University, February 5, 2010.

*“Gas-phase Ion Chemistry in FAIMS”, (with L.C. Rorrer III), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 4, 2010

Papers and Seminars Presented - continued

“MALDI Tandem MS Analyses of Cellulose and Hemicellulose Applied Towards Understanding MS Images of Wood Tissue”, (with K.A. Lunsford, and G.F. Peter), *Florida ACS Meeting and Exposition*, May 14, 2010.

“Mapping the Localization of Small Molecules in Infarcted Heart Tissue Using Mass Spectrometry”, (with R.F. Menger, W. Stutts, J.A. Bowden, D. Anbukumar, D.A. Ford), *Florida ACS Meeting and Exposition*, May 14, 2010.

“Quantitative Tissue-to-Tissue Comparison by MALDI Tandem Mass Spectrometry Using a Deuterated Internal Standard”, (with D.A. Pirman, and P.R. Borum), *Florida ACS Meeting and Exposition*, May 14, 2010.

“Characterization of Lipid Peroxidation Products of Glycerophospholipids and Spinal Cord Tissue by Tandem Mass Spectrometry”, (with K.S. Valente, W.L. Stutts; M.H.G. Medeiros, and P. Di Mascio), *Universidade de Sao Paulo, Brazil*, May 18, 2010.

“Analysis of Intact and in situ Trypsin-digested Amyloid Beta Peptides by MALDI-LIT-MSⁿ for Mass Spectrometric Imaging”, (with D.P. Magparangalan, T.J. Garrett, and D.M. Drexler), *58th Annual Conference on Mass Spectrometry and Allied Topics*, June 23, 2010.

“Analysis of Painting Cross Sections by Secondary Ion Mass Spectrometry”, (with M.P. Napolitano, Arslanoglu, A. Kiss, D.F. Smith, and R.M.A. Heeren), *58th Annual Conference on Mass Spectrometry and Allied Topics*, June 23, 2010.

“Global and Targeted Metabolomics of Piglet Plasma and Red Blood Cells During the First Seven Days of Life”, (with N.M. Elliott, P.R. Borum, J.V. Johnson, and D.H. Powell), *58th Annual Conference on Mass Spectrometry and Allied Topics*, June 23, 2010.

“MALDI-LIT-MSⁿ Imaging Applied To Characterizing Different Regions of Wood Tissue”, (with K.A. Lunsford, and G.F. Peter), *58th Annual Conference on Mass Spectrometry and Allied Topics*, June 23, 2010.

“Solvent Vapor Effects in Planar FAIMS”, (with L.C. Rorrer, III), *58th Annual Conference on Mass Spectrometry and Allied Topics*, June 23, 2010.

“Quantitative Imaging of Cocaine and Its Metabolites in Brain Tissue Using MALDI-MS/MS with a Multi-Notch SWIFT Waveform”, (with R.F. Reich), *58th Annual Conference on Mass Spectrometry and Allied Topics*, June 23, 2010

“Mass Spectrometric Imaging of Lysophosphatidylcholines in Various Tissue Types”, (with R.F. Menger, W. Stutts, J.A. Bowden, D. Anbukumar, D.A. Ford, W.W. Dawson, and T.J. Garrett), *58th Annual Conference on Mass Spectrometry and Allied Topics*, June 23, 2010.

“Tandem Mass Spectrometric Analysis of Oxidized Glycerophospholipids by MALDI using a Linear Ion Trap”, (with W.L. Stutts; K.S. Valente, T.J. Garrett, and P. Di Mascio), *58th Annual Conference on Mass Spectrometry and Allied Topics*, June 23, 2010.

Papers and Seminars Presented - continued

“Quantitation of endogenous acetylcarnitine from piglet brain tissue using acetyl-d3-carnitine as an internal standard by mass spectrometric imaging”, (with D.A. Pirman, and P.R. Borum), *58th Annual Conference on Mass Spectrometry and Allied Topics*, June 23, 2010.

*”Imaging Mass Spectrometry: Progress and Prospects”, (with T.J. Garrett and D.M. Drexler), *13th Annual CPSA Symposium*, October 20, 2010.

*”Imaging Mass Spectrometry: Biological and Biomedical Applications”, *Bio21 Symposium*, University of Melbourne (Australia), March 3, 2011.

*”Enhanced Selectivity and Sensitivity in FAIMS”, *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 14, 2011.

“Analysis of Ammonium Nitrate/Urea Nitrate with Electrospray Ionization Ion Mobility - Mass Spectrometry”, (with A. Midley, C. Wu, and C-W. Tsai), *Trace Explosive Detection Workshop*, April 11, 2011.

“GC/MS Analysis of the Apical Droplet from *Culex quinquefasciatus* Egg Rafts”, (with H. Lathrop, U.R. Bernier, and S. Allan), *59th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2011.

“Characterization and Identification of Long-Chain and Short-Chain Phospholipid Oxidation Products by MALDI-MSⁿ”, (with W.L. Stutts, K.S. Valente, T.J. Garrett, and P. Di Mascio), *59th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2011.

“Analysis of Ammonium Nitrate/Urea Nitrate with Crown Ether and Sugar as Modifiers”, (with C-W. Tsai, A. Midey, and C. Wu), *59th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2011.

“A Tandem Mass Spectrometric Imaging Methodology for Angiotensin 1-7 Peptides”, (with R.F. Menger, A. Verma, Q. Li, and T.J. Garrett), *59th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2011.

“Global Metabolomics of Colon Cancer by Analysis of Human Plasma with LC/(+)ESI-MS”, (with N.M. Elliott, J. Koomen, U. Oguz, Y.A. Chen, D. Shibata, E.M. Siegel, and D.H. Powell), *59th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2011.

“Quantitative MALDI Tandem Mass Spectrometric Imaging of Cocaine from Brain Tissue with a Deuterated Internal Standard”, (with D.A. Pirman, A. Kiss, and R.M.A. Heeren), *59th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2011.

“Direct Matrix-Assisted Laser Desorption/Ionization Mass Spectrometric Imaging of Lignocellulosic Tissue”, (with K. Lunsford and G. Peter), *59th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2011.

“Mass Spectrometric Imaging of and Behavioral Assays of *Pristionchus pacificus*”, (with C. Clendien, R. Ajredini, R. Menger, K. Khan, R. Yost, and A. Edison), *C. Elegans Conference*, June 1, 2011.

Papers and Seminars Presented - continued

"Chemical Imaging of Biological Systems by Laser Microprobe Mass Spectrometry", *Retired Faculty of the University of Florida (RFUF)*, February 22, 2012

"Imaging Mass Spectrometry: Biomedical and Biological Applications", *UF Clinical and Translational Science Institute*, February 29, 2012.

*"Unraveling identity in imaging mass spectrometry: the roles of tandem MS and high resolution", (with W.L. Stutts, R.F. Menger, Y-H Tsai, W. Mounfield, and T.J. Garrett), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 12, 2012.

"Metabolomics of Colon Cancer by Analysis of Human Plasma with LC/TOF and LC/Q-TOF", (with N.M. Elliott, J. Koomen, U. Oguz, Y.A. Chen, D. Shibata, E.M. Siegel, and D.H. Powell), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 15, 2012.

"Neuroproteomics using Tandem-Mass Spectrometry to Study Experimental Spinal Cord Injury", (with A. Moghieb, N. Denslow; W. K. Kevin), *60th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 2012.

"Analysis of volatile organic compounds in human breath by FAIMS/MS", (with M. Costanzo), *60th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 2012.

"Metabolomics of Estrus and Anestrus Urine from Manatees", (with N. Elliott, M. Bills, J.V. Johnson), *60th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 2012.

"Towards Laser Desorption Ionization/MALDI MS Imaging of Paint-Cross Sections from Works of Art", (with E. O'Neill, J. Arslanoglu), *60th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 2012.

"Analysis of volatile organic compounds in human breath by FAIMS/MS", (with M. Costanzo, C. Tsai), *60th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 2012.

"Analysis of Dried Blood Spots by Paperspray Ionization-MSⁿ and MALDI-MSⁿ", (with E. Muffly, C. Tsai), *60th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 2012.

"Chip-based FAIMS/Triple Quadrupole MS: Instrumental Studies and Analytical Capabilities", (with C. Beekman, C.W. Tsai, M. Ugarov, G. Stafford), *60th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 2012.

"LC/MS/MS and Mass Spectrometric Imaging of Lipids in Skeletal Muscle of Aged Rats", (with Y. Tsai, C. Carter, T. Garrett), *60th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 2012.

"Structural Characterization of Phosphatidylethanolamine Oxidation Products by MALDI-MSⁿ", (with W. Stutts), *60th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 2012.

"Application of Paper Spray Ionization for Explosives Analysis", (with C. W. Tsai), *60th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 2012.

Papers and Seminars Presented - continued

“MALDI and SIMS Imaging with Multivariate Data Analysis Applied to a Rat Coronary Artery Ligation Model”, (with R. F. Menger, A. Kiss, G. B. Eikel, D S. Angukumar, J.A. Bowden, D. A. Ford, R. M. A. Heeren), *60th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 2012.

“LC/MSⁿ Study of Apical Droplets from *Culex quinquefasciatus* Mosquito Egg Rafts”, (with H. Lathrop, J.V. Johnson, U. R. Bernier), *60th Annual Conference on Mass Spectrometry and Allied Topics*, May 20, 2012.

*“The Cutting Edge of Metabolomics: IROA, Orbitrap, and Imaging MALDI”, (with R.F. Menger, R. Arjedini, C.S. Clendinen, G.S. Stupp, A.S. Edison, C. Beecher, M. Szewc, and J. Wang, *Thermo Users Meeting at the 60th Annual Conference on Mass Spectrometry and Allied Topics*, May 22, 2012.

*“Localization and Identification of Organic Materials in Samples from Artworks”, (with J. Arslanoglu, H.Y. Lee, and E. O'Neill), *Conference on Synchrotron Radiation in Art and Archaeology*, June 6, 2012.

*“Integrating Imaging Mass Spectrometry and Metabolomics”, *UF CTSI Metabolomics Workshop*, June 7, 2012.

“New Experimental Approaches in Metabolomics with the Nematode *C. elegans*”, (with A.S. Edison, R. Arjedini, C. Beecher, C. Clendinen, R.F. Menger, G.S. Stupp), *International Meeting of the Metabolomics Society*, June 16, 2012.

*“Imaging Mass Spectrometry in Eye Research: Localization and Identification of Small Molecules”, (with T.J. Garrett, W.L. Stutts, W.P. Mounfield, R.F. Menger), *International Society for Eye Research*, Berlin, July 21, 2012.

*“Innovations in FAIMS: Geometries and Gas-phase Chemistry”, (with C.-W Tsai, C.R. Beekman, J.J. Boock, and M. Costanzo), *ACS National Meeting*, August 20, 2012.

*“MALDI/MSⁿ Imaging of Lipid Oxidation Products in Nervous Tissue”, (with W.L. Stutts, R.F. Menger, T.J. Garrett, N.A. Calcutt), *International Conference on Imaging Mass Spectrometry*, Oursense, Spain, September 3, 2012.

*“High Performance Separation in Less than a Second: FAIMS and Mass Spectrometry”, *ARUP Laboratories Medical Education Symposium*, September 10, 2012.

“Advances in Chip-Based FAIMS/Triple Quadrupole MS: Instrumental Studies and Analytical Capabilities”, (with C. Beekman, C.W. Tsai, M. Ugarov, G. Stafford), *19th International Conference on Mass Spectrometry*, Kyoto, Japan, September 17, 2012.

*“Chip-Based FAIMS: New Concepts and the Role of Solvent Vapors”, *19th International Conference on Mass Spectrometry*, Kyoto, Japan, September 19, 2012.

“Field-Asymmetric Ion Mobility Spectrometry (FAIMS): The Role of Gas-Phase Chemistry”, University of Utah, October 1, 2012.

Papers and Seminars Presented - continued

**"Imaging Mass Spectrometry: Biological and Biomedical Applications", *ARUP Laboratories Medical Education Symposium*, November 10, 2012.

"Innovations in FAIMS: Geometries, Gas-phase Chemistry, and Applications", *Pacific Northwest National Laboratory*, November 19, 2012.

**"FAIMS/MS: an Emerging Technique in the Clinical Laboratory", (with C.R. Beekman, A.L. Rockwood, J.A. Ray, M. Kushnir, and H. Escobar-Loaiza), *MSACL: Mass Spectrometry Applications to the Clinical Lab*, February 10, 2013.

"Advancing Metabolomics: SECIM, IROA, and Imaging Mass Spectrometry," *Thermo Scientific*, February 14, 2013.

"FAIMS/MS: an Emerging Technique in the Clinical Laboratory", *Agilent Scientific*, February 15, 2013.

"A Mass Spectrometric Imaging Metabolomics Methodology Applied to a Model of Myocardial Infarction", (with R.F. Menger, R.L. Hendershot, B. Wacker, and D.A. Ford) *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 18, 2013.

"Localization of Artists' Materials using Laser Desorption Ionization and Matrix-Assisted Laser Desorption Ionization MS Imaging", (with E.V. O'Neill, R.L. and J. Arslanoglu) *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 20, 2013.

"Integrating Imaging Mass Spectrometry and Metabolomics", Biogen IDEC, Cambridge, MA, May 14, 2013.

**"FAIMS/MS/MS as an Emerging Technique for Clinical Laboratory", (with C.R. Beekman, J.J. Boock, T.J. Garrett, J.A. Ray, M.M. Kushnir, A. L. Rockwood), *61st Annual Conference on Mass Spectrometry and Allied Topics*, June 10, 2013.

"Mass spectrometry-Based Approach for Absolute Quantitative Characterization and Validation of Neuronal-Glial Injury Biomarkers in Tissue and Biofluids", (with A. Moghieb, N. Denslow, K. Wang), *61st Annual Conference on Mass Spectrometry and Allied Topics*, June 10, 2013.

"Mass spectrometric Imaging of Myelin Basic Protein and its Breakdown Products in Traumatic Brain Injury", (with M. Mangaonkar, K. Wang, D. Powell), *61st Annual Conference on Mass Spectrometry and Allied Topics*, June 10, 2013.

"Integrating Multivariate Data Analysis and +/- Mode MALDI Imaging MS for Interrogating Animal Models and Myocardial Infarction", (with R. Menger, A. Kiss, R. Hendershot, B. Wacker, G. Eijkel, R. Heeren, D. Ford), *61st Annual Conference on Mass Spectrometry and Allied Topics*, June 10, 2013.

"A Global LC-MS Metabolomics Approach for Biomarker Identification in Patients with Nonalcoholic Fatty Liver Disease" (with R. Patterson, R. Lomonaco, N. Sunny, K. Cusi, T. Garrett, D. Powell), *61st Annual Conference on Mass Spectrometry and Allied Topics*, June 12, 2013.

Papers and Seminars Presented - continued

“Rat Skeletal Muscle Fiber Differentiation using Mass Spectrometric Imaging (MSI) and Tandem MS (MSⁿ)”, (with Y. Tsai, T. Garrett, C. Carter), *61st Annual Conference on Mass Spectrometry and Allied Topics*, June 12, 2013.

“Identifying and Imaging Lipid Oxidation Products by MALDI-MSⁿ: A Multivariate Approach”, (with W. Stutts, G. Eijkel, R. M. A. Heeren), *61st Annual Conference on Mass Spectrometry and Allied Topics*, June 12, 2013.

“Electrospray/High-field Asymmetric Waveform Ion Mobility Spectrometry/Mass Spectrometry of Transition Metals: Potential for Environmental and Nuclear Applications”, (with J. Boock), *61st Annual Conference on Mass Spectrometry and Allied Topics*, June 13, 2013.

“Separation of Isomers using Modifier Gases on Chip-based FAIMS/Triple Quadrupole MS”, (with C. Beekman, T. Garrett, M. Ugarov, G. Stafford), *61st Annual Conference on Mass Spectrometry and Allied Topics*, June 13, 2013.

“Global Metabolomics of Stressed *Caenorhabditis Elegans* using Isotope Ratio Outlier Analysis”, (with G.S. Stupp, C. Clendinen, R. Arjedini, M.A. Szewc, B. Singer, L. McIntyre, R. Menger, C. Beecher and A.S. Edison), *9th Annual Conference of the Metabolomics Society*, Glasgow, Scotland, July 1, 2013.

*“MALDI Imaging with Ion Traps”, *ASMS Fall Workshop on Imaging Mass Spectrometry*, November 7, 2013.

“Integrating Imaging Mass Spectrometry with Metabolomics”, Medical University of South Carolina/Hollings Lab, December 5, 2013.

“The Cutting Edge of Metabolomics”, Thermo Scientific, February 5, 2014

“Integrating Imaging Mass Spectrometry with Metabolomics”, *University of Illinois*, February 7, 2014.

*“Innovations in Mass Spectrometry for Clinical Analysis”, (with T. J. Garrett and A. Rockwood), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 4, 2014.

“Tandem MS of Laser-Reduced Anthraquinones: Implications for LDF Detection of Paints and Dyes”, (with M.P. Napolitano, K.-P. Kuo, J.V. Johnson, and J. Arslanoglu), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 5, 2014.

“Isotopic Ratio Outlier Analysis and Imaging Mass Spectrometry in Metabolomics”, (with T.J. Garrett, R.F. Menger, Y.-H. Tsai, and C. Ulmer), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 5, 2014.

“Integrating Imaging Mass Spectrometry with Metabolomics”, *Michigan State University*, March 14, 2014.

“Integrating MALDI Imaging and Metabolomics”, *NIH Metabolomics Webinar*, May 1, 2014.

Papers and Seminars Presented - continued

"MALDI Imaging", *UF Metabolomics Workshop*, May 21, 2014.

"Integrating Imaging Mass Spectrometry with Metabolomics", *UF Metabolomics Symposium*, May 23, 2014.

*"Reflections on Nearly 40 Years of Designing and Using Mass Spectrometric Systems", *ASMS/Agilent Meeting*, June 14, 2014.

"Optimization of the Analysis of Proteins Found in Paint Cross-sections from Works of Arty by MALDI MSI", (with E. O'Neill, M. Powers, J. Arslanoglu, and J. Allison), *62nd Annual Conference on Mass Spectrometry and Allied Topics*, June 16, 2014.

"Lipidomic analysis and comparison of young and old rat skeletal muscles using UHPLC-HRMS", (with Y-H, Tsai, T. Garrett, and C. Carter), *62nd Annual Conference on Mass Spectrometry and Allied Topics*, June 16, 2014.

"Targeted Analysis of Single Micro-Droplets using Extractive Electrospray Ionization with Tandem Mass Spectrometry, (with C.D. Chouinard and D.M. Drexler), *62nd Annual Conference on Mass Spectrometry and Allied Topics*, June 16, 2014.

"Analysis of resin acids in seedlings and resin-soaked loblolly pine using MALDI-MS/MS and LC-MS/MS", (with M. Reid, R. Patterson and T. Garrett), *62nd Annual Conference on Mass Spectrometry and Allied Topics*, June 16, 2014.

"Comparison of extraction methods for untargeted lipid analysis by liquid chromatography – mass spectrometry (LC-MS)", (with R. Patterson and T. Garrett), *62nd Annual Conference on Mass Spectrometry and Allied Topics*, June 16, 2014.

"Evaluation of Electrospray and Ionization Effects on Jurkat-T Human Leukemia Cell Washing Buffers & Lipid Extraction Methods by LC-MS", (with C. Ulmer, J. Chen, T. Garrett and C. Mathews), *62nd Annual Conference on Mass Spectrometry and Allied Topics*, June 16, 2014.

"Phenotype Determination of *Caenorhabditis Elegans* with Matrix-Assisted Laser Desorption/Ionization Mass Spectrometric Imaging", (with R. Menger, C. Clendinen, L. Searcy and A.S. Edison), *62nd Annual conference on Mass Spectrometry and Allied Topics*, June 17, 2014.

*"The Triple Quadrupole: an Historical Perspective", *62nd Annual Conference on Mass Spectrometry and Allied Topics*, June 18, 2014.

"Exploration of Ambient Ionization Methods for Identification and Characterization of Biomarkers for Melanoma", (with M.T. Costanzo, C. Ulmer, S. Mohan and N. Gravenstein), *62nd Annual Conference on Mass Spectrometry and Allied Topics*, June 18, 2014.

"Optimization of the Quantitation of Drugs in Dried Whole Blood and Plasma Spots by Wide-Isolation MALDI-MSⁿ", (with E. Dhummakupt), *62nd Annual Conference on Mass Spectrometry and Allied Topics*, June 18, 2014.

Papers and Seminars Presented - continued

"Improved Separation Methods for Rapid Analysis of Targeted Small Molecules on IMS/Q-TOF Platform", (with C. Beekman, D. L. Wong, C. Klein and R. Kurulugama), *62nd Annual Conference on Mass Spectrometry and Allied Topics*, June 18, 2014.

"Mass Spectrometry-Based Proteomics: Discovery and Absolute Quantification of Neuroinjury Biomarkers", (with A. Mogheib, N. Denslow, and K.K. W. Wang), *62nd Annual Conference on Mass Spectrometry and Allied Topics*, June 19, 2014.

"Exploring the Integration of PSI-FAIMS-MS for Forensic Applications", (with C-W. Tsai and C.A. Tipple), *62nd Annual Conference on Mass Spectrometry and Allied Topics*, June 19, 2014.

"Integrating Imaging Mass Spectrometry with Metabolomics", *University of Washington*, September 29, 2014.

*"Metabolomics Analysis of Skeletal Muscles and Fiber Types using Mass Spectrometry", (with Y.-H. Tsai, C.S. Carter, and T.J. Garrett), *17th Annual Symposium on Clinical & Pharmaceutical Solutions through Analysis*, September 30, 2014

"Metabolomics Analysis of the Effects of Rapamycin Treatment and Intermittent Feeding on Skeletal Muscles from Young and Old Rats using Liquid Chromatography/Mass Spectrometry", (with Y.-H. Tsai, C.S. Carter, and T.J. Garrett), *67th Annual Gerontological Society of America Annual Scientific Meeting*, November 5, 2014.

"Integrating Imaging Mass Spectrometry with Metabolomics", *University of Florida Biochemistry Seminar*, September 29, 2014.

"Chemistry, Metabolomics, and Mass Spectrometry", *UF Grand Guard Alumni Reunion*, November 21, 2014.

*"Innovation(s) in Mass Spectrometry and Metabolomics", (Plenary Lecture), *CPSA Metabolomics*, February 18, 2015.

"Liquid Chromatography and Mass Spectrometry Method Development for Global Lipidomic Analysis", (with D. McDougall, R. Patterson, and T.J. Garrett), *5th Annual Florida Undergraduate Research Conference*, February 27, 2015.

*"Innovative Isotope Labeling Strategies for MALDI/MS/MS Tissue Imaging for Metabolomics", *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 9, 2015.

"Direct Analysis Methods for Dried Blood Spots via Mass Spectrometry", (with E.S. Dhummakupt), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 9, 2015.

"Matrix-Assisted Laser Desorption/Ionization Mass Spectrometric Imaging (MALDI MSI) of Glycolytic and Oxidative Skeletal Muscles", (with Y.-H. Tsai, T.J. Garrett, and C.S. Carter), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 10, 2015.

Papers and Seminars Presented - continued

“Cellular Metabolomics Methodology for Type 1 Diabetes using CD4⁺ t Cells”, (with C.Z. Ulmer, J. Chen, T.J. Garrett, and C. Matthews), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 10, 2015.

“Ion Mobility Strategies for Separation of Vitamin D Metabolites by LC/MS/MS”, (with C.D. Chouinard, C.R. Beekman, and T.J. Garrett), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 11, 2015.

“Metabolomic Analysis of Skin Lesions for Melanoma by Mass Spectrometry”, (with M.T. Costanzo, C.Z. Ulmer, and N. Gravenstein), *Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy*, March 11, 2015.

*“Reflections on 40 Years of Designing and Using Mass Spectrometric Systems”, (*Beijing, China*) March 17, 2015.

*“Reflections on 40 Years of Designing and Using Mass Spectrometric Systems”, (*Guangzhou, China*) March 18, 2015.

*“Reflections on 40 Years of Designing and Using Mass Spectrometric Systems”, (*Shanghai, China*) March 19, 2015.

*“Innovations for Translating Metabolomics into the Clinical Laboratory”, (Plenary Lecture), *MSACL: Mass Spectrometry Applications to the Clinical Lab*, March 30, 2015.

*“Innovations in Mass Spectrometry and Metabolomics”, *UF Center for Exercise Science Seminar*, April 9, 2015.

*“Integrating Imaging Mass Spectrometry and Metabolomics”, (Plenary Lecture), *2015 Society for Thermal Medicine Annual Meeting*, April 15, 2015.

”Mass Spectrometric Innovations for Metabolomics”, *Pennsylvania State University*, April 29, 2015.

“Mass Spectrometric Innovations for Metabolomics”, *FAME*, May 9, 2015.

“Comparison of Extraction Methods for Untargeted Lipid Analysis by Liquid Chromatography-Mass Spectrometry (LC-MS)”, (with R.E. Patterson), *FAME*, May 9, 2015.

“FAIMS/MS and FAIMS for Detection of Exogenous VOCs and Drugs of Abuse in Human Breath”, (with M.T. Costanzo, M. Kazaleh, and R. Kemperman), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 2015.

“Method Development for Cirrhosis Biomarkers in Simulated Breath using Various Ionization Techniques Combined with MS and FAIMS”, (with R. Kemperman), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 2015.

“Tissue Sample Preparation Optimization for Global Lipidomics by LC-MS”, (with D. McDougall), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 1, 2015.

Papers and Seminars Presented - continued

“Optimization and Application of Continuous Solvent Addition and Controlled Elution to Paper Spray Ionization”, (with L. Dhummakupt), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 2015.

“Novel Strategies for Analysis of High-Resolution Data-Independent MS/MS Spectra for Rapid and Accurate Structural Confirmation of Lipids”, (with J. Koelmel), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 2015.

“Metabolic and Lipidomic Biomarker Discovery for Type 1 Diabetes Using LC-MS Analysis of Primary T Cells”, (with C.Z. Ulmer), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 2015.

“Untargeted metabolomic analysis of the yeast lipin phosphatidate phosphatase (Pah1p) deletion using Isotopic Ratio Outlier Analysis (IROA) and LC-HRMS”, (with Y-H. Tsai), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 2, 2015.

“Metabolomic Analysis of Melanoma Skin Lesions and Mammalian Cell Cultures by Mass Spectrometry”, (with M.T. Costanzo), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 3, 2015.

“Lipidomics of nonalcoholic fatty liver disease and nonalcoholic steatohepatitis in a mouse model via LC-HRMS”, (with R.E. Patterson), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 3, 2015.

“Study of protein breakdown following traumatic brain injury by mass spectrometry-based proteomics”, (with M. Mangaonkar), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 3, 2015.

“On-line Planar Chromatography/Mass Spectrometry using Spray Ionization”, (with M. Wei), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 3, 2015.

“Matrix optimization for the analysis of resin acids and lipids in loblolly pine seedlings using MALDI-MSI”, (with M. Reid), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 3, 2015.

“Separation of Isomeric Steroids using Ion Mobility QTOF-LC/MS”, (with C.D. Chouinard), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2015.

“Integration of Paper Spray Ionization-High Field Asymmetric Waveform Ion Mobility Spectrometry-Mass Spectrometry (PSI-FAIMS-MS) for Forensic Applications”, (with C.W. Tsai), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2015.

“Method Development in Selective Separation of Isomeric Small Molecules in Complex Matrices on IMS/Q-TOF Platform”, (with C.R. Beekman), *63rd Annual Conference on Mass Spectrometry and Allied Topics*, June 4, 2015.

Papers and Seminars Presented - continued

“Metabolomics Analysis of Type 1 Diabetic Primary T Cells Using Isotopic Ratio Outlier Analysis (IROA) by LC-MS”, (with C. Ulmer), *11th Annual International Conference of the Metabolomics Society*, June 29, 2015.

“Tissue Sample Preparation Optimization for Global Lipidomic Analysis”, (with D. McDougall, R. Patterson, Y. Tsai, T. Garrett), *11th Annual International Conference of the Metabolomics Society*, June 29, 2015.

“Lipidomics of nonalcoholic fatty liver disease and nonalcoholic steatohepatitis in a mouse model via LC-HRMS”, (with D. McDougall, R. Patterson, C. Ulmer), *11th Annual International Conference of the Metabolomics Society*, June 29, 2015.

“Skeletal muscle metabolic and lipidomic networks regulated by the lipin 1 phosphatidate phosphatase, and MALDI MSI visualization”, (with I.J. Kurland), *11th Annual International Conference of the Metabolomics Society*, June 29, 2015.

“Mass Spectrometric Innovations for Metabolomics”, *Technion University, (Haifa, Israel)* November 6, 2015.

“FAIMS, MS, and Breath Analysis”, *Technion University (Haifa, Israel)*, November 6, 2015.

*“Imaging Mass Spectrometry Applied to Biomarker Discovery”, (with T.J. Garrett), *5th Annual SLAS Conference*, January 25, 2016

“Imaging Mass Spectrometry and Metabolomics in Parkinson’s Disease”, (with T. Garrett, E. Gill, V. Vedam-Mai, M.S. Okun), *MSACL 2016*, February 23, 2016.

“Ion Mobility Mass Spectrometry: Alternative Drift Gas Selection for Improved Separation of Isomers in Clinical Analysis”, (with C.D. Chouinard, R.H.J. Kemperman, H. King), *MSACL 2016*, February 24, 2016.

“Mass Spectrometric Innovations for Tissue Imaging and Direct Analysis” *MSACL 2016*, February 25, 2016.

*“Ion Mobility/Mass Spectrometry for Metabolomics and Clinical Analysis: Progress and Prospects”, (with C. Chouinard, C. Beekman, M. Costanzo, J. Boock, R. A. Kemperman, M. S. Wei, T. Garrett, C. A. Beecher), *Pittcon 2016*, March 9, 2016.

*“Detection of Tetrahydrocannabinol and Related Compounds in Human Breath Using-field Asymmetric Waveform Ion Mobility Spectrometry”, (with J. Boock, M. T. Costanzo), *Pittcon 2016*, March 9, 2016.

“Cationization Strategies for Improved Separation of Metabolite Isomers with Ion Mobility-Mass Spectrometry”, (with C.D. Chouinard, R. H.J. Kemperman, C.R. Beekman), *Pittcon 2016*, March 9, 2016.

Papers and Seminars Presented - continued

“Application of Isotopic Ratio Outlier Analysis Phenotypic Protocol for Metabolomic Biomarker Discovery in Type 1 Diabetes using T cells”, (with C. Z. Ulmer, C. Beecher, J. Chen, T.J. Garrett, C. Matthews), *Pittcon 2016*, March 9, 2016.

“Metabolomics of Nonalcoholic Fatty Liver Disease via LC-MS”, (with R. Patterson, S. Kalavalapalli, N. Sunny, K. Cusi, T. J. Garrett), *Pittcon 2016*, March 9, 2016.

“Biomarker Discovery for Type 1 Diabetes Using UHPLC-HRMS Metabolomics Methodologies”, (with C. Z. Ulmer), *13th Annual Yale Bouchet Conference on Diversity and Graduate Education*, April 2, 2016.

*“Ion Mobility/Mass Spectrometry for Metabolomics and Clinical Analysis” Progress and Prospects”, *Imperial College London*, May 23, 2016.

“Rapid Differentiation of Bile Acid Isomers Using Sodiated Multimer Complexes with Ion Mobility-Mass Spectrometry”, (with R. Kemperman; C. Chouinard), *64th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2016.

“Rapid Separation of Vitamin D epimers in human serum by liquid chromatography ion mobility mass spectrometry”, (with N. Oranzi, C. Chouinard), *64th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2016.

“Stereoisomer Separation by Ion Mobility – Mass Spectrometry of Multivalent Cation-Chiral Small Molecule Complexes”, (with C. Chouinard, R.H.J. Kemperman, N. Oranzi, H. King), (with N. Oranzi, C. Chouinard), *64th Annual Conference on Mass Spectrometry and Allied Topics*, June 6, 2016.

“Comparison of Rectangular Waveform FAIMS/MS to Conventional Sum of Sines Waveform”, (with M. Wei, M.T. Costanzo, J.J. Casanova, J. Boock), *64th Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 2016.

“LipidMatch Software: identification of lipids and their oxidation products using data-dependent and data-independent LC-MS/MS data”, (with J. Koelmel, N. Kroeger, C. Ulmer, R.E. Patterson, J.A. Bowden, T.J. Garrett), *64th Annual Conference on Mass Spectrometry and Allied Topics*, June 7, 2016.

“Study of traumatic brain injury biomarkers by mass spectrometry-based proteomics”, (with M. Mangaonkar, K.B. Basso, K. Wang), *64th Annual Conference on Mass Spectrometry and Allied Topics*, June 8, 2016.

“Environmental Lipidomics: Examining the Case of Pansteatitis in Mozambique Tilapia”, (with J. Bowden, J. Koelmel, T.J. Garrett, L. Guillette), *64th Annual Conference on Mass Spectrometry and Allied Topics*, June 8, 2016.

“Ambient Ionization Methods and Liquid Chromatography – Mass Spectrometry Analysis of Human Melanoma Biopsies”, (L. Searcy, C. Ulmer, M. Kazaleh, L. Searcy, M. Costanzo, N. Gravenstein), *64th Annual Conference on Mass Spectrometry and Allied Topics*, June 8, 2016.

Papers and Seminars Presented - continued

“Global metabolomics and lipidomics of non-alcoholic fatty liver disease and non-alcoholic steatohepatitis in human plasma by LC-HRMS”, (with A. Levy, R.E. Patterson, J. Koelmel; S. Kalavalapalli, N. Sunny, F. Bril, K. Cusi, T.J. Garrett), *64th Annual Conference on Mass Spectrometry and Allied Topics*, June 8, 2016.

“Metabolomic Analysis of Melanoma Skin Tissues by Liquid Chromatography-Mass Spectrometry”, (with K. Mathew, C.Z. Ulmer, L. Searcy, M. Costanzo, N. Gravenstein), *64th Annual Conference on Mass Spectrometry and Allied Topics*, June 8, 2016.

“Loblolly Pine Seedling Imaging Analysis by DESI-MS and MALDI-MS, (with M. Reid, G.F. Peter), *64th Annual Conference on Mass Spectrometry and Allied Topics*, June 9, 2016.

“A New Embedding Method for Mouse Brain Tissue in Preparation of Matrix Assisted Laser Desorption Ionization Mass-Spectrometry Imaging (MALDI-MSI), (with E. Gill, T.J. Garrett, V. Vadam-Mai), *64th Annual Conference on Mass Spectrometry and Allied Topics*, June 9, 2016.

“Metabolic Profiling of Type I Diabetes from Primary and Established T. Cells Using Isotopic Ratio Outlier Analysis by LC-MS”, (with C. Ulmer, R. Urankar, C. Beecher, T. J. Garrett, C. Mathews), *64th Annual Conference on Mass Spectrometry and Allied Topics*, June 9, 2016.

“Imaging of Muscle and Adipose Tissue by MALDI-MS for Exercise Metabolomics” (with M. Reid, I. Kurland, and T.J. Garrett), *12th Annual Conference of Metabolomics Society* (Dublin, Ireland), June 28, 2016.

“Ion Mobility/Mass Spectrometry for Metabolomics and Clinical Analysis: Progress and Prospects”, (with C.D. Chouinard, M.T. Costanzo, M. Wei, R.H.J. Kemperman, N.R. Oranzi, J.J. Bock, and T.J. Garrett), *12th Annual Conference of Metabolomics Society* (Dublin, Ireland), June 29, 2016.

“Improved Global identifiability with orthogonal platforms of LC/Orbitrap-MS and GC/TOF-MS using IROA”, (with Y. Qiu, R.Moir, I.Willis, M. Reid, T.J., and C. Beecher), *12th Annual Conference of Metabolomics Society* (Dublin, Ireland), June 29, 2016.

“IROA Fluxomic analyses: a non-targeted, all-encompassing protocol using IROA (Isotopic Ratio Outlier Analysis)”, (with C. Beecher, T. Garrett, and F. de Jong), *12th Annual Conference of Metabolomics Society* (Dublin, Ireland), June 29, 2016.

“Applying Lipidomics for elucidating biomarkers and role of environmental stressors leading to pansteatitis outbreak in fish across South Africa”, (with J. Koelmel), *NACRW Conference*, July 20, 2016.

“Strategies for Improved Separation of Isometric Steroids with FAIMS-MS/MS”, (with C. Chouinard and R.H.J. Kemperman), *International Society for Ion Mobility Spectrometry Conference*, July 26, 2016.

“Rapid Separation of Bile Acid Isomers using Drift Tube and Field Asymmetric Ion Mobility Spectrometry-Mass Spectrometry”, (with R.H.J. Kemperman, C.D. Chouinard), *International Society for Ion Mobility Spectrometry*, July 27, 2016.

Papers and Seminars Presented - continued

*“Developing a Point-of-Care Device for Breath Analysis Utilizing FAIMS and FAIMS/MS”, (with M. T. Costanzo, J. Boock, M. Wei, R. Attariwala), *IABR Breath Summit 2016*, Zurich Switzerland, September 15, 2016.

*“Metabolomics Technology Development – Overview”, *NIH Common Fund Meeting*, September 28, 2016.

*“Investigating Labelled Glucose Enrichment through Exercise Routines”, (with M. Reid, T.J. Garrett, and I. Kurland), *CPSA USA Meeting*, September 28, 2016.

“The Triple Quadrupole: a Historical Perspective”, *Triangle Area Mass Spec Discussion Group*, October 12, 2016.

“Mass Spectrometric Innovations for Metabolomics”, Colorado School of Mines, October 28, 2016.

“National Institutes of Health Common Fund-Metabolomics Community Resources”, (with P. Maruvada), *The Obesity Society’s Annual Meeting*, November 4, 2016.

“Novel Proteolytic Peptides Derived from Neurogranin as Potential Biomarkers for Traumatic Brain Injury”, (with G. Sarkis, K. W. Wang), *Sanibel Conference on Peptidomics: Bridging the Gap between Proteomics and Metabolomics by Mass Spectrometry*, January 22, 2017.

“Opportunities for Clinical Metabolomic Analysis of Tissue using Liquid Microjunction Surface Analysis”, (with T.J. Garrett, E.L. Gill, and L.A. Searcy), *MSACL 2017*, January 25, 2017

“Ion Mobility/Mass Spectrometry for Metabolomics and Clinical Analysis”, *MSACL 2017*, January 26, 2017.

*“Mass Spectrometric Innovations for Tissue Imaging and Direct Analysis”, Hach Distinguished Lecture, Colorado State University, February 22, 2017.

“Clinical Isomer Analysis in Blood Plasma with Ion Mobility-Mass Spectrometry”, (with R. H. J. Kemperman, C.D. Chouinard, N.R. Oranzi, A. Levy), *Pittcon 2017*, March 7, 2017.

*“Towards Point-of-Care Diagnostic Screenings for Breath Analysis Using FAIMS and FAIMS/MS”, (with M.T. Costanzo, M. S. Wei, J.J. Boock), *Pittcon 2017*, March 9, 2017.

“Drift Tube Ion Mobility Mass Spectrometry as a Clinical Tool for Small Molecule Quantitation”, (with N. Oranzi, R.H.J Kemperman, and A.J. Levy), *CPSA Metabolomics*, March 14, 2017.

“Ion Mobility/Mass Spectrometry for Metabolomics and Clinical Analysis”, Agilent, March 23, 2017.

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Patents

U.S. Patent No. 4,234,791, "Tandem Quadrupole Mass Spectrometer for Selected Ion Fragmentation Studies and Low-Energy Collision-Induced Dissociation Therefor," C.G. Enke, R.A. Yost, and J.D. Morrison, November 18, 1980.

Canadian Patent No. 1,117,224, "Tandem Quadrupole Mass Spectrometer for Selected Ion Fragmentation Studies and Low-Energy Collision-Induced Dissociation Therefor," C.G. Enke, R.A. Yost, and J.D. Morrison, January 26, 1982.

U.S. Patent No. 5,075,547, "Quadrupole Ion Trap Mass Spectrometer Having Two Pulsed Axial Excitation Input Frequencies and Method of Parent and Neutral Loss Scanning and Selected Reaction Monitoring," J.V. Johnson, R.E. Pedder, R.A. Yost, and M.S. Story, December 24, 1991.

U.S. Patent No. 5,114,439, "Direct Resistive Heating and Temperature Measurement of Metal-clad Capillary Columns for Gas Chromatography and Related Separation Techniques," R.A. Yost and M.E. Hail, May 19, 1992.

U.S. Patent No. 5,128,542, "Method of Operating an Ion Trap Mass Spectrometer to Determine the Resonant Frequency of Trapped Ions," N.A. Yates, S.C. Bradshaw, R.A. Yost, and D.B. Tucker, July 7, 1992.

U.S. Patents No. 5,171,991 and 5,352,890, "Quadrupole Ion Trap Mass Spectrometer Having Two Axial Modulation Excitation Input Frequencies and Method of Parent and Neutral Loss Scanning," J.V. Johnson, R.E. Pedder, R.A. Yost, and M.S. Story, December 15, 1992 and October 4, 1994.

U.S. Patent No. 5,747,801, "Method and Device for Improved Trapping Efficiency of Injected Ions for Quadrupole Ion Traps," S.T. Quarmby and R.A. Yost, May 5, 1998.

U.S. Patent No. 6,147,348, "An Improved Method for Performing a Scan Function on Quadrupole Ion Trap Mass Spectrometers," S.T. Quarmby and R.A. Yost, November 14, 2000.

U.S. Patent No. 6,267,953, "Chemical Compositions that Attract Arthropods," U.R. Bernier, D.L. Kline, D.R. Barnard, K.R. Posey, M.M. Booth, and R.A. Yost, July 31, 2001.

U.S. Patent Application, "Scan Function for Enhanced Resolving Power on the Quadrupole Ion Trap," J.J. Mulholland and R.A. Yost, February 24, 2000.

U.S. Patent Application, "Total Ion Mode for High-Field Asymmetric-Waveform Ion Mobility Spectrometry," C.K. Hilton, M. W. Belford, and R.A. Yost, March 1, 2004.

U.S. Patent No. 6,800,279, "Chemical Compositions that Attract Arthropods," U.R. Bernier, D.R. Barnard, M.M. Booth, D.L. Kline, K.R. Posey, and R.A. Yost, October 5, 2004.

Australian Patent No. 779,649, "Chemical Compositions that Attract Arthropods," U.R. Bernier, D.L. Kline, D.R. Barnard, K.R. Posey, M.M. Booth, and R.A. Yost, February 3, 2005.

Canadian. Patent No. 2,493,691, "Method and Apparatus for FAIMS with a Laser-based Ionization Source," M.W. Belford, R. Dworschak, R. Guevremont, C.K. Hilton, and R.A. Yost, July 22, 2005.

Patents - continued

Chinese Patent No. 1,247,083, "Chemical Compositions that Attract Arthropods," U.R. Bernier, D.L. Kline, D.R. Barnard, K.R. Posey, M.M. Booth, and R.A. Yost, March 29, 2006.

U.S. Patent No. 7,135,674, "Method and Apparatus for FAIMS with a Laser-based Ionization Source," M.W. Belford, R. Dworschak, R. Guevremont, C.K. Hilton, and R.A. Yost, November 14, 2006.

U.S. Provisional Patent 13/383,603, PCT Patent Application, "Mass Tags for Mass Spectrometric Assays of Immunoglobulins". R.A. Yost, July 14, 2009

U.S. Patent Application in preparation, UF#-13348, "Fragmenting Proteins and Peptides in Ion Traps with Reagent Gas", T.J. Garrett and R.A. Yost, February 10, 2010.

U.S. Patent Application in preparation, UF#-13353, "Solvation of FAIMS Carrier Gas for Improvement in Performance", L.C. Rorrer III and R.A. Yost, February 16, 2010.

U.S. Patent No. 7,771,713, "Compositions and methods employing the compositions for attracting arthropods", U.R. Bernier, D.R. Barnard, M.M. Booth, D.L. Kline, K.R. Posey, and R.A. Yost, August 10, 2010.

U.S. Patent No. 8,049,167, "Pneumatic Ion-Beam Focusing in High-Field Asymmetric Waveform Ion Mobility Spectrometry (FAIMS)", L.C. Rorrer III and R.A. Yost, November 1, 2011.

European Patent No. 1,574849, "Method and Apparatus for FAIMS with a Laser-based Ionization Source," M.W. Belford, R. Dworschak, R. Guevremont, C.K. Hilton, and R.A. Yost, September 26, 2012.

U.S. Patent No. 8,237,118, "Partial Ovoidal FAIMS Electrodes", T.A. Prox, M. Prieto, J.G. Bryant, and R.A. Yost, August 7, 2012.

U.S. Provisional Patent 62/170,251, "Separation of Vitamin D Epimers Using Ion Mobility Spectrometry", R. A. Yost C.D. Chouinard, C.R. Beekman, June 3, 2015.

U.S. Provisional Patent 62/698, 865, "Point of Care Melanoma Test", N. Gravenstein, R.A. Yost, M.T. Costanzo, C. Shaw, June 2, 2015.

U.S. Provisional Patent 62/197,733, "Atmospheric Pressure Ion Guide", J.L. Boock, R.A. Yost, B. Smith, J.J. Casanova, July 28, 2015.

PCT Patent Application WO 2017/019852 A1, "Atmospheric Pressure Ion Guide", J.L. Boock, R.A. Yost, B. Smith, J.J. Casanova, February 2, 2017.

U.S. Provisional Patent 62/463,153, "Implementing IMS-Assisted IROA for Metabolomics", R.A. Yost, R.J.H. Kemperman, C. Beecher, February 24, 2017.

Publications

1. "Selected Ion Fragmentation with a Tandem Quadrupole Mass Spectrometer," R.A. Yost and C.G. Enke, *J. Amer. Chem. Soc.*, 100, 2274-2275 (1978).
2. "High Efficiency Collision-Induced Dissociation in an RF-Only Quadrupole," R.A. Yost, C.G. Enke, D.C. McGilvery, D. Smith, and J.D. Morrison, *Int. J. Mass Spectrom. Ion Phys.*, 30, 127-136 (1979).
3. "Triple Quadrupole Mass Spectrometry for Direct Mixture Analysis and Structure Elucidation," R.A. Yost and C.G. Enke, *Anal. Chem.*, 51, 1251A-1264A (1979); also in *Instrumentation in Analytical Chemistry*, Vol. 2, S.A. Borman, ed., American Chemical Society, (1982).
4. "The Fragmentation of the Ions of Nonan-4-one: A Study by Triple Quadrupole Mass Spectrometry," R.A. Yost and C.G. Enke, *Org. Mass Spectrom.*, 16, 171-175 (1981).
5. "An Added Dimension for Structure Elucidation through Triple Quadrupole Mass Spectrometry," R.A. Yost and C.G. Enke, *Amer. Lab.*, 13(6), 88-95 (1981); also in *Int. Lab.*, (9), 76-82 (1981).
6. "Structural Elucidation of Drug Metabolites by Triple Quadrupole Mass Spectrometry," R.J. Perchalski, R.A. Yost, and B.J. Wilder, *Anal. Chem.*, 54, 1466-1471 (1982).
7. "Energy-Resolved Collision-Induced Dissociation in Tandem Mass Spectrometry," D.D. Fetterolf and R.A. Yost, *Int. J. Mass Spectrom. Ion Phys.*, 44, 37-50 (1982).
8. "Tandem Mass Spectrometry for Studies of Drug Action and Metabolism," R.A. Yost, H.O. Brotherton, and R.J. Perchalski, *Int. J. Mass Spectrom. Ion Phys.*, 48, 77-80 (1983).
9. "Determination of Drugs in Blood Serum by Mass Spectrometry/Mass Spectrometry," H.O. Brotherton and R.A. Yost, *Anal. Chem.*, 55, 549-553 (1983).
10. "Determination of Regional Distribution of Drugs in Brain-tissue by Triple Quadrupole Mass-spectrometry," R.J. Perchalski, R.A. Yost, E.J. Hammond, B.J. Wilder, *Epilepsia*, 24, 112 (1983).
11. "Tandem Mass Spectrometry (MS/MS) Instrumentation," R.A. Yost and D.D. Fetterolf, *Mass Spectrom. Rev.*, 2, 1-45 (1983).
12. "Tandem Quadrupole Mass Spectrometry," R.A. Yost and C.G. Enke, Chapter 8 in *Tandem Mass Spectrometry (MS/MS)*, F.W. McLafferty ed., John Wiley, (1983), pp. 175-195.
13. "Laser Desorption Chemical Ionization Mass Spectrometry/Mass Spectrometry," R.J. Perchalski, R.A. Yost, and B.J. Wilder, *Anal. Chem.*, 55, 2002- 2005 (1983).
14. "Oxygen Fixation into Hydroxyproline in Etiolated Maize Seedlings: Verification by Tandem Mass Spectrometry," G.J. Fritz, D.D. Fetterolf, R.A. Yost, and B.D. Andresen, *Plant Physiol.*, 73, 860-861 (1983).

15. "Tandem Mass Spectrometry (MS/MS)," R.A. Yost, *Spectra*, 9(4), 5-9 (1983).
16. The Use of Reactive Collisions in Tandem Mass Spectrometry for the Differentiation of Isomeric Ion Structures," D.D. Fetterolf, R.A. Yost, and J.R. Eyler, *Org. Mass Spectrom.*, 19, 104-105 (1984).
17. "Determination of Aldicarb, Aldicarb Oxime, and Aldicarb Nitrile in Water by Gas Chromatography/Mass Spectrometry," M.L. Trehly, R.A. Yost, and J.J. McCreary, *Anal. Chem.*, 56, 1281-1285 (1984).
18. "Determination of Atmospheric Degradation Products of Toluene by Tandem Mass Spectrometry," R.J. O'Brien, B.E. Dumdei, and S.V. Hummel, and R.A. Yost, *Anal. Chem.*, 56, 1329-1335 (1984).
19. "Tandem Mass Spectrometry for the Trace Determination of Tryptolines in Crude Brain Extracts," J.V. Johnson, R.A. Yost, and K.F. Faull, *Anal. Chem.*, 56, 1655-1661 (1984).
20. "Quantitative Measurement of Octopamines and Synephrines in Urine Using Capillary Column Gas Chromatography Negative Ion Chemical Ionization Mass Spectrometry," K.E. Ibrahim, J.M. Midgley, M.W. Crouch, M.B. Budd, R.A. Yost, and C.M. Williams), *Anal. Chem.*, 56, 1695-1699 (1984).
21. "Comparison of Mass Spectrometric Methods for Trace Level Screening of Hexachlorobenzene and Trichlorophenol in Human Blood Serum and Urine," R.A. Yost, D.D. Fetterolf, J.R. Hass, D.J. Harvan, A.F. Weston, P.A. Skotnicki, and N.A. Simon, *Anal. Chem.*, 56, 2223-2228 (1984).
22. "Pharmaceutical and Clinical Analysis by Tandem Mass Spectrometry," R.A. Yost, H.O. Brotherton, M.B. Budd, J.V. Johnson, and R.J. Perchalski, *Talanta*, 31, 929-935 (1984).
23. "Rapid Screening and Confirmation for Drugs and Metabolites in Racing Animals by Tandem Mass Spectrometry," H.O. Brotherton and R.A. Yost, *Am. J. Vet. Res.*, 45, 2436-2440 (1984).
24. "Added Resolution Elements for Greater Informing Power in Tandem Mass Spectrometry," D.D. Fetterolf and R.A. Yost, *Int. J. Mass Spectrom. Ion Proc.*, 62, 33-49 (1984).
25. "Tandem Mass Spectrometry for Trace Analysis," J.V. Johnson and R.A. Yost, *Anal. Chem.*, 57, 758A-768A (1985).
26. "Chiral Analysis of Urinary 5-Hydroxymethtryptoline: Implications for Endogenous Biosynthesis and Formation during Ethanol Intoxication," O. Beck, K.F. Faull, J.D. Barchas, J.V. Johnson, and R.A. Yost, *Prog. Clin. Biol. Res.*, 183, 145-160 (1985).
27. "The Use of Tandem Mass Spectrometry for the Identification and Quantitation of Tryptolines (Tetrahydro- β -carbolines) in Tissue Extracts," J.V. Johnson, R.A. Yost, K.F. Faull, and O. Beck, *Prog. Clin. Biol. Res.*, 183, 161-177 (1985).
28. "More on Mass Spectrometers and Aerosol Propellants," G.J. Theisen, N. Gravenstein, A.K. Knudsen, J.V. Johnson, and R.A. Yost, *Anesthesiology*, 63, 569-570 (1985).

Publications - continued

29. "An Evaluation of Triple Quadrupole Mass Spectrometry/Mass Spectrometry (MS/MS) for On-Line Gas Analysis of Trace Sulfur Compounds from Oil Shale Processing," C.M. Wong, R.W. Crawford, and R.A. Yost in *Mass Spectrometric Characterization of Shale Oils*, T. Aczel, ed., ASTM, (1986), pp. 106-120.
30. "Short Open Tubular Columns in Gas Chromatography/Mass Spectrometry," M.L. Trehy, R.A. Yost, and J.G. Dorsey, *Anal. Chem.*, 58, 14-19 (1986).
31. "Tandem Mass Spectrometry for the Characterization of High Carbon-Number Geoporphyrins," J.V. Johnson, E.D. Britton, R.A. Yost, J.M.E. Quirke, and L.L. Cuesta, *Anal. Chem.*, 58, 1325-1329 (1986).
32. "Tandem Mass Spectrometry for the Identification of Drug Metabolites," M.S. Lee, R.A. Yost, and R.J. Perchalski, *Annu. Rep. Med. Chem.*, 21, 313-321 (1986).
33. "Triple Quadrupole MS/MS in Biomedical Research," J.V. Johnson, M.S. Lee, M.R. Lee, H.O. Brotherton, and R.A. Yost in *Mass Spectrometry in Biomedical Research*, S.J. Gaskell, ed., John Wiley & Sons, (1986), pp. 459-475.
34. "Chlorination By-Products of Amino Acids in Natural Waters," M.L. Trehy, R.A. Yost, and C.J. Miles, *Environ. Sci. Technol.*, 20, 1117-1122 (1986).
35. "Tandem Mass Spectrometry of Organophosphate and Carbamate Pesticides," S.V. Hummel and R.A. Yost, *Org. Mass Spectrom.*, 21, 785-791 (1986).
36. "Purification and Quantification of Arachidonate Metabolites: Critical Evaluation of Methodologies and Interpretation of Results," C.-Y. Wu-Wang, J. Neu, T.A. Gillespie, and R.A. Yost, *Semin. Perinat.* 10, 255-269 (1986).
37. "Biotransformation and Excretion: Metabolite Identification: Other Mass Spectrometric Methods," R.J. Perchalski, M. Lee, and R.A. Yost, *J. Clin. Pharmacol.* 26, 435-442 (1986).
38. "Tandem Mass Spectrometry for Biomedical and Pharmaceutical Analysis," R.A. Yost, *Adv. Mass Spectrom.* 10, (1986).
39. "GC/MS/MS for the Simultaneous Determination of Indoleamines and Tryptolines (Tetrahydro- β -carbolines)," in *Crude Extracts of Rat Brain*, J.V. Johnson, R.A. Yost, K.F. Faull, and O. Beck, *Adv. Mass Spectrom.* 10, 1463-1464 (1986).
40. "Identification of PCB Congeners by Collision-Induced Dissociation of $(M+O-Cl)^-$ from Oxygen-Enhanced Negative Chemical Ionization," R. Guevremont, R.A. Yost, and W.D. Jamieson, *Biomed. Environ. Mass Spectrom.* 14, 435-441 (1987).
41. "Rapid Identification of Drug Metabolites with Tandem Mass Spectrometry," M. Lee and R.A. Yost, *Biomed. Environ. Mass Spectrom.*, 15, 193-204 (1988).
42. "Electrochemistry/Thermospray/Tandem Mass Spectrometry in the Study of Biooxidation of Purines," K.J. Volk, M.S. Lee, R.A. Yost, A. Brajter-Toth, *Anal. Chem.*, 60, 720-722 (1988).

Publications - continued

43. "Quadrupole Ion Trap Mass Spectrometry: Progress and Prospects," R.A. Yost, *Spectra*, 11(2), 2-3, (1988).
44. "Forensic Analysis of Explosives by Thermospray Liquid Chromatography/Mass Spectrometry and Tandem Mass Spectrometry," D.W. Berberich, R.A. Yost, and D.D. Fetterolf, *J. Forensic Sci.*, 33, 946-959 (1988).
45. "Tandem Mass Spectrometric Analyses of Geoporphyrins," J.M.E. Quirke, M. Perez, E.D. Britton, and R.A. Yost in *Geochemical Biomarkers*, T.F. Yen and J.M. Moldowan, eds., Ellis Horwood (1988), pp. 355-371.
46. "Amino Acids as Model Compounds for Halogenated Byproducts Formed on Chlorination of Natural Waters," M.L. Trehly, R.A. Yost, and C.J. Miles, in *Biohazards of Drinking Water Treatment*, R.A. Larson, ed., Lewis Publishers, Chapter 11, (1988).
47. "Coburning in Institutional Incinerators", A. Green, G. Prine, R.A. Yost, et al., in *Thermal Treatment of Municipal, Industrial, and Hospital Wastes*, American Pollution Control Association, (1988), pp. 61-81.
48. "Degradation of N-Methylcarbamate and Carbamoyloxime Pesticides in Chlorinated Water," C.J. Miles, M.L. Trehly, and R.A. Yost, *Bull. Environ. Contam. Toxicol.*, 41, 836-843 (1988).
49. "Tandem Mass Spectrometry for the Determination of Trace Steranes in Crude Shale Oil," J.V. Johnson, R.A. Yost, and C.M. Wong, in *Novel Techniques in Fossil Fuel Mass Spectrometry*, T.R. Ashe and K. V. Wood, eds., ASTM, (1989), pp. 47-58.
50. "The Effect of Metal Atoms on Electron Ionization and Ammonia Chemical Ionization Mass Spectra of Metalloporphyrins: Implications for Geoporphyrin Analysis," B.D. Beato, R.A. Yost, and J.M.E. Quirke, in *Novel Techniques in Fossil Fuel Mass Spectrometry*, T.R. Ashe and K. V. Wood, eds., ASTM, (1989), pp. 84-93.
51. "Hydrocarbon-Type Analysis of Jet Fuel with Gas Chromatography/Mass Spectrometry," M.J. Gehron and R.A. Yost, in *Novel Techniques in Fossil Fuel Mass Spectrometry*, T.R. Ashe and K. V. Wood, eds., ASTM, (1989), pp. 24-37.
52. "Concentrations of Tryptoline and Methtryptoline in Rat Brain", P. Peura, J.V. Johnson, R.A. Yost, and K.F. Faull, *J. Neurochem.*, 52, 847-852 (1989).
53. "Studies on High Carbon-Number Geoporphyrins by Tandem Mass Spectrometry," J.M.E. Quirke, L.L. Questa, R.A. Yost, J.V. Johnson, and E.D. Britton, *Org. Geochem.*, 14, 43-50 (1989).
54. "On-Line Electrochemistry/Thermospray/Tandem Mass Spectrometry: A New Approach for Studying Electrochemical and Biochemical Redox Reactions," R.A. Yost, K.J. Volk, M.S. Lee, and A. Brajter-Toth, *Adv. Mass Spectrom.*, 11, (1989).

Publications - continued

55. "Chemical Ionization and Tandem Mass Spectrometry with the Quadrupole Ion Trap Mass Spectrometer," J.V. Johnson, D.W. Berberich, R.E. Pedder, and R.A. Yost, *Adv. Mass Spectrom.*, 11, (1989).
56. "Characterization of Solution-Phase and Gas-Phase Reactions in On-Line Electrochemistry/Thermospray/Tandem Mass Spectrometry," K.J. Volk, A. Brajter-Toth, and R.A. Yost, *J. Chromatogr.*, 474, 231-240 (1989).
57. "Dimethyl Disulfide Derivatives of Long-Chain Alkenes and Alkadienes for Gas Chromatography-Mass Spectrometry," D.A. Carlson, C.-S. Roan, and R.A. Yost, and J. Hector, *Anal. Chem.*, 61, 1564-1571 (1989).
58. "On-Line Electrochemistry/Thermospray/Tandem Mass Spectrometry as a New Approach to the Study of Redox Reactions: The Oxidation of Uric Acid," K.J. Volk, R.A. Yost, and A. Brajter-Toth, *Anal. Chem.*, 61, 1709-1717 (1989).
59. "Gas Chromatographic Sample Introduction into the Collision Cell of a Triple Quadrupole Mass Spectrometer for Mass-selection of Reactant Ions for Charge Exchange and Chemical Ionization," M.E. Hail, D.W. Berberich, and R.A. Yost, *Anal. Chem.*, 61, 1874-1879 (1989).
60. "Studies of Phthalic Acid and Related Compounds by Positive and Negative Chemical Ionization Tandem Mass Spectrometry", T.A. Gillespie, L. Urogdi, A.R. Katritzky and R.A. Yost, *Org. Mass Spectrom.*, 24, 817-822 (1989).
61. "Doubly Charged Porphyrin Ion Tandem Mass Spectrometry: Implications for Structure Elucidation," B.D. Beato, R.A. Yost, and J.M.E. Quirke, *Org. Mass Spectrom.*, 24, 875-884 (1989).
62. "Theoretical and Practical Aspects of Short Columns in Capillary Gas Chromatography/Mass Spectrometry," M.E. Hail and R.A. Yost, *Anal. Chem.*, 61, 2402-2410 (1989).
63. "Compact Gas Chromatograph Probe for Gas Chromatography/Mass Spectrometry Utilizing Short Resistively-Heated Aluminum-Clad Capillary Columns," M.E. Hail and R.A. Yost, *Anal. Chem.*, 61, 2410-2416 (1989).
64. "Mass Selection of Reactant Ions for Chemical Ionization in Quadrupole Ion Trap and Triple Quadrupole Tandem Mass Spectrometers," D.W. Berberich, M.E. Hail, J.V. Johnson, and R.A. Yost, *Int. J. Mass Spectrom. Ion Proc.*, 94, 115-147 (1989).
65. "Thermal-Desorption-Tandem Mass Spectrometry for the Detection and Identification of Formulated Products," A.P. Snyder, C.W. Cross, S.A. Liebman, G.A. Eiceman, and R.A. Yost, *J. Anal. Appl. Pyrolysis*, 16, 191-204 (1989).
66. "Estimation of Mutagenic/Carcinogenic Potential of Environmental Contaminants by Ion-Molecule Reactions and Tandem Mass Spectrometry," J.A. Freeman, J.V. Johnson, M.E. Hail, R.A. Yost, and D.W. Kuehl, *J. Amer. Soc. Mass Spectrom.*, 1, 110-115 (1990).
67. "MS/MS: Tandem Mass Spectrometry for Forensic Analysis," D.D. Fetterolf and R.A. Yost in *Analytical Methods in Forensic Chemistry*, M.H. Ho, ed., Ellis Horwood, (1990), pp.1-15.

Publications - continued

68. "On-line Mass Spectrometric Insights into Electrochemical Reactions: Oxidation of Thiopurines," K.J. Volk, R.A. Yost, and A. Brajter-Toth, *J. Electrochem. Soc.*, 137, 1764-1771 (1990).
69. "Tandem Mass Spectrometry: Quadrupole and Hybrid Instruments," R.A. Yost and R.K. Boyd, in *Mass Spectrometry (Methods in Enzymology, Vol. 193)*, J.A. McCloskey, ed., Academic Press (1990), pp. 154-200.
70. "On-Line Mass Spectrometric Study of the Peroxidase-Catalyzed Enzymatic Oxidation of Uric Acid," K.J. Volk, R.A. Yost, and A. Brajter-Toth, *J. Pharm. Biomed Anal.*, 8, 205-215 (1990).
71. "Differences in the Low-Energy Collisionally Activated Dissociation of Carboxylate Anions from Structurally Similar Prostaglandins: E₂, F_{2α}, D₂ and DHKF_{2α}," T.A. Gillespie and R.A. Yost, *J. Amer. Soc. Mass Spectrom.*, 1, 389-396 (1990).
72. "Tandem-in-Space and Tandem-in-Time Mass Spectrometry (MS/MS): Triple Quadrupoles and Quadrupole Ion Traps," J.V. Johnson, R.A. Yost, P.E. Kelley, and D.C. Bradford, *Anal. Chem.*, 62, 2162-2172 (1990).
73. "Perspectives on the Future of Analytical Mass Spectrometry," C. Basic, J.A. Freeman, and R.A. Yost, *Anal. Chem.*, 62, 1113A-1119A (1990).
74. "Preliminary Characterization of Porphyrins from the Gafsa Basin, Tunisia: Evidence of Metal-free Benzo Porphyrins from an Immature Sediment," J.M.E. Quirke, T. Dale, E.D. Britton, R.A. Yost, J. Trichet, and H. Belayouni, *Org. Geochem.*, January, 1990. 73.
75. "Carbamazepine Metabolism in Humans: Effect of Concurrent Anticonvulsant Therapy," R.E. Ramsay, D.Q. McManus, A. Guterman, T.V. Briggles, R.J. Perchalski, R.A. Yost, and P. Wong, *Therap. Drug. Monit.*, 12, 235-241 (1990).
76. "The Henryville Bed of the New Albany Shale-III: Tandem Mass Spectrometric Analyses of Geoporphyrins from Kerogen and Bitumen," B.D. Beato, R.A. Yost, G.J. vanBerkel, R.H. Filby, and J.M.E. Quirke, *Org. Geochem.*, 17(1), 93-105 (1991).
77. "MS/MS Parent Scans on a Quadrupole Ion Trap Mass Spectrometer by Simultaneous Resonant Excitation of Multiple Ions," J.V. Johnson, R.E. Pedder, and R.A. Yost, *Int. J. Mass Spectrom. Ion Proc.*, 106, 197-212 (1991).
78. "The Henryville Bed of the New Albany Shale-IV: Tandem Mass Spectrometric Analyses of Geoporphyrins from the Bitumen of the Demineralized Shale," M.A. Concha, J.M.E. Quirke, B.D. Beato, R.A. Yost, G.E. Mercer, and R.H. Filby, *Chem. Geol.*, 91, 153-168 (1991).
79. "Comparison of Spectroscopic Properties of Metalloporphyrins," K.D. Stanley, R. Lopez de la Vega, J.M.E. Quirke, B.D. Beato, and R.A. Yost, *Chem. Geol.*, 91, 169-183 (1991).
80. "Carbon Number, Pyrrolic Structure and Sequencing Information of Porphyrin Structure in One Experiment by Desorption Tandem Mass Spectrometry-Relevance for Geoporphyrins," B.D. Beato, R.A. Yost, J.M.E. Quirke, *Chem. Geol.*, 91, 185-192 (1991).

Publications - continued

81. "Alternating RF/DC Isolation for Quantitation with Coeluting Internal Standards in Gas Chromatography/Ion Trap Mass Spectrometry," B.L. Kleintop, R.A. Yost, and C.R. Abolin, *J. Amer. Soc. Mass Spectrom.*, 3, 85-88 (1992).
82. "Electrochemistry On-line with Mass Spectrometry: Insight into Biological Redox Reactions," K.J. Volk, R.A. Yost, and A. Brajter-Toth, *Anal. Chem.*, (Instrumentation Feature), 64, 21A-33A (1992).
83. "Optimization of Electron Ionization Short-Column Gas Chromatography/Mass Spectrometry Strategies for Determination of Underivatized Anabolic Steroids," S.-A. Rossi, J.V. Johnson, and R.A. Yost, *Biol. Mass Spectrom.*, 21, 420-430 (1992).
84. "Probing Trapped Ion Energies via Ion-Molecule Reaction Kinetics: Quadrupole Ion Trap Mass Spectrometry," C. Basic, J.R. Eyler, and R.A. Yost, *J. Amer. Soc. Mass Spectrom.*, 3, 716-726 (1992).
85. "An Expert System/Ion Trap Mass Spectrometry Approach for Life Support Monitoring," P.T. Palmer, C.M. Wong, R.A. Yost, J.V. Johnson, N.A. Yates, and M.A. Story, *22nd International Conference on Environmental Systems*, SAE #921173, pp1-13 (1992).
86. "Black Canyons for Ions Stored in an Ion Trap Mass Spectrometer," D.M. Eades and R.A. Yost, *Rapid Commun. Mass Spectrom.*, 6, 573-578 (1992).
87. "A Dynamic Approach for Studying Redox Reactions: Electrochemistry On-line with Mass Spectrometry," K.J. Volk, R.A. Yost, A. Brajter-Toth, and J.A. Freeman, *Analisis*, 20, 421-425 (1992).
88. "The Stretched Quadrupole Ion Trap: Implications for the Mathieu a_z and q_z Parameters and Experimental Mapping of the Stability Diagram," J.V. Johnson, R.E. Pedder, and R.A. Yost, *Rapid Comm. Mass Spectrom.*, 6, 760-764 (1992).
89. "Operation of a Quadrupole Ion Trap Mass Spectrometer for Particle Beam LC/MS," B.L. Kleintop, D.M. Eades, and R.A. Yost, *Anal. Chem.*, 65, 1295-1300 (1993).
90. "Vacuum Operation of the Flame Ionization Detector for Gas Chromatography," U.R. Bernier and R.A. Yost, *J. Chrom. Sci.*, 31, 358-362 (1993).
91. "Non-linear Resonance Effects During Ion Storage in a Quadrupole Ion Trap," D.M. Eades, J.V. Johnson, and R.A. Yost, *J. Amer. Soc. Mass Spectrom.*, 4, 917-929 (1993).
92. "Short-Column Gas Chromatography/Tandem Mass Spectrometry of Underivatized Anabolic Steroids in Urine," S.-A. Rossi, J.V. Johnson, and R.A. Yost, *Biol. Mass Spectrom.*, 23, 131-139 (1994).
93. "Gas-Phase Ion-Molecule Reactions: A Model for the Determination of Reactive Electrophilic Contaminants in the Environment," J.A. Freeman, J.V. Johnson, R.A. Yost, and D.W. Kuehl, *Anal. Chem.*, 66, 1902-1910 (1994).

Publications - continued

94. "Negative Ionization in Quadrupole Ion Trap Mass Spectrometry: Effects of Applied Voltages and Reaction Times," D.W. Berberich and R.A. Yost, *J. Amer. Soc. Mass Spectrom.*, 5, 757-764 (1994).
95. "Isomerism of Ionized Toluene and Cycloheptatriene Upon Resonant Excitation in a Quadrupole Ion Trap Mass Spectrometer," C. Basic, J.R. Eyler, and R.A. Yost, *Org. Mass Spectrom.*, 29, 329-332 (1994).
96. "Infrared Multiple Photon Dissociation Studies in the Quadrupole Ion Trap Using a Multi-pass Optical Arrangement," J.L. Stephenson, Jr., M.M. Booth, J.A. Shalosky, J.R. Eyler, and R.A. Yost, *J. Amer. Soc. Mass Spectrom.*, 5, 886-893 (1994).
97. "Thermal Decomposition Characterization of Explosives by Pyrolysis-Gas Chromatography/Mass Spectrometry (Py-GC/MS)," J. Yinon, R.A. Yost, and S. Bulusu, *J. Chromatogr.*, 688, 231-242 (1994).
98. "Reactions in the Mass Spectrometry of a Hydride Meisenheimer Complex of 2,4,6-Trinitrotoluene (TNT)," J. Yinon, J.V. Johnson, U.R. Bernier, R.A. Yost, H.T. Mayfield, W.C. Mahone, and C. Vorbeck, *J. Mass Spectrom.*, 30, 715-722 (1995).
99. "Photodissociation in the Ion Trap," J.L. Stephenson, Jr., and R.A. Yost, Chapter 5 in *Practical Aspects of Ion Trap Mass Spectrometry: Volume 2, Ion Trap Instrumentation*, R.E. March and J.F.J. Todd, ed., CRC Press, (1995), pp.163-204.
100. "Laser Desorption Ion Trap Mass Spectrometry," R.R. Vargas and R.A. Yost, Chapter 6 in *Practical Aspects of Ion Trap Mass Spectrometry: Volume 2, Ion Trap Instrumentation*, R.E. March and J.F.J. Todd, ed., CRC Press, (1995), pp.205-236.
101. "Practical Ion Trap Technology: GC/MS and GC/MS/MS," N.A. Yates, M.M. Booth, J.L. Stephenson, Jr., and R.A. Yost, Chapter 4 in *Practical Aspects of Ion Trap Mass Spectrometry: Volume 3, Chemical, Environmental, and Biomedical Applications*, R.E. March and J.F.J. Todd, ed., CRC Press, (1995), pp.121-186.
102. "Liquid Chromatography/Mass Spectrometry," B.L. Kleintop, D.M. Eades, Jon A. Jones, and R.A. Yost, Chapter 5 in *Practical Aspects of Ion Trap Mass Spectrometry: Volume 3, Chemical, Environmental, and Biomedical Applications*, R.E. March and J.F.J. Todd, ed., CRC Press, (1995), pp.187-214.
103. "Energetics and Collision-induced Dissociation Efficiencies in the Quadrupole Ion Trap Mass Spectrometer," J.V. Johnson, C. Basic, R.E. Pedder, B.L. Kleintop, and R.A. Yost, Chapter 8 in *Practical Aspects of Ion Trap Mass Spectrometry: Volume 3, Chemical, Environmental, and Biomedical Applications*, R.E. March and J.F.J. Todd, ed., CRC Press, (1995), pp.257-312.
104. "Internal Pulsed Valve Sample Introduction on a Quadrupole Ion Trap Mass Spectrometer," B.I. Coopersmith and R.A. Yost, *J. Amer. Soc. Mass Spectrom.*, 6, 976-980 (1995).
105. "Trace Determination of Naringenin and Hesperitin by Tandem Mass Spectrometry," R.A. Weintraub, B. Ameer, J.V. Johnson, and R.A. Yost, *J. Agric. Food Chem.*, 8, 1966-1968 (1995).

Publications - continued

106. "The Analysis of Biomolecules Using Electrospray Ionization/Ion Trap Mass Spectrometry and Laser Photodissociation," J.L. Stephenson, Jr., M.M. Booth, S.M. Boué, J.R. Eyler, and R.A. Yost, Chapter 25 in *Biological and Biotechnological Applications of Electrospray Ionization Mass Spectrometry*, A.P. Snyder, ed., ACS Symposium Series, No. 619, (1996), pp.512-564.
107. "Characterization of Cycloalkanoporphyrin Skeletal Types Using Electron Ionization Tandem Mass Spectrometry: Implications for Analysis of Geoporphyrin Mixtures," J.D. Laycock, R.A. Yost, L. Wang, and J.M.E. Quirke, *Energy & Fuels*, 9, 1079-1085 (1995).
108. "Advanced Automation for Ion Trap Mass Spectrometry: New Opportunities for Real-time Autonomous Analysis," P.T. Palmer, J.D. Salmonson, C.M. Wong, R.A. Yost, T.P. Griffin, and N.A. Yates, Chapter 2 in *Computer Assisted Analytical Spectroscopy*, S.D. Brown, ed., John Wiley, (1996), pp.25-60.
109. "Flavanone Absorption after Naringin, Hesperidin, and Citrus Administration," B. Ameer, R.A. Weintraub, J.V. Johnson, R.A. Yost, and R.L. Rouseff, *Clin. Pharmacol. Therap.*, 60, 34-40 (1996).
110. "The Effect of Pulsed Buffer Gas Introduction on Ion Storage and Detection Efficiencies in a Quadrupole Ion Trap," T.L. Williams, J.L. Stephenson, and R.A. Yost, *J. Amer. Soc. Mass Spectrom.*, 8, 532-538 (1997).
111. "Mass Spectrometry: Tandem Mass Spectrometry," C. Basic, S.F. Silverton, and R.A. Yost, Chapter 5 in *Stable Isotopes in Pharmaceutical Research*, T.R. Browne, Ed., Elsevier, (1997), pp.73-117.
112. "Electron Ionization Mass Spectrometric Analysis of 5-Nitro Octaethylporphyrin: Evidence for Scission of the Porphyrin Macrocycle," J.D. Laycock, J.A. Ferguson, R.A. Yost, J.M.E. Quirke, A. Rohrer, R. Ocampo, and H. Callot, *J. Mass Spectrom.*, 32, 978-983 (1997).
113. "Electrospray Ionization Tandem Mass Spectrometry Collision-Induced Dissociation Study of Explosives in an Ion Trap Mass Spectrometer," J. Yinon, J.E. McClellan, and R.A. Yost, *Rapid Commun. Mass Spectrom.*, 11, 1961-1970 (1997).
114. "Analysis of Human Skin Emanations by Gas Chromatography/Mass Spectrometry. I. Thermal Desorption of Attractants for the Yellow Fever Mosquito (*Aedes aegypti*) from Handled Glass Beads," U.R. Bernier, M.M. Booth, and R.A. Yost, *Anal. Chem.*, 71, 1-7 (1999).
115. "Fundamental Studies of Ion Injection and Trapping of Electrosprayed Ions in a Quadrupole Ion Trap," S.T. Quarmby and R.A. Yost, *Int. J. Mass Spectrom.*, 190-191, 81-102 (1999).
116. "Detection of Pharmaceutical Compounds in Tissue by Matrix-Assisted Laser Desorption/Ionization (MALDI) and Laser Desorption/Chemical Ionization (LD/CI) MS/MS with a Quadrupole Ion Trap," F.J. Troendle, C.D. Reddick, and R.A. Yost, *J. Am. Soc. Mass Spectrom.*, 10, 1315-1321 (1999).

Publications - continued

117. "Collision-Induced Dissociation Surfaces for n-Alkylbenzene Molecular Ions in a Quadrupole Ion Trap Mass Spectrometer," C. Basic and R.A. Yost, *Int. J. Mass Spectrom.*, 194, 121-132 (2000).
118. "Origin of Mass Shifts in the Quadrupole Ion Trap: Dissociation of Fragile Ions Observed with a Hybrid Ion Trap/Mass Filter Instrument," J.P. Murphy III and R.A. Yost, *Rapid Commun. Mass Spectrom.*, 14, 270-273 (2000).
119. "Analysis of Human Skin Emanations by Gas Chromatography/Mass Spectrometry. 2. Identification of Volatile Compounds that are Candidate Attractants for the Yellow Fever Mosquito (*Aedes Aegypti*)," U.R. Bernier, D.L. Kline, D.R. Barnard, C.E. Schreck, and R.A. Yost, *Anal. Chem.*, 72, 747-756 (2000).
120. "Effect of Vacuum on the Performance of the Flame Ionization Detector Used for Vacuum-Outlet Gas Chromatography," U.R. Bernier, C.L. Bray, and R.A. Yost, *J. Microcolumn Sep.*, 12, 226-235 (2000).
121. "Pulsed Helium Introduction into the Quadrupole Ion Trap for Reduced Collisional Quenching and Increased IRMPD Efficiencies," S.M. Boué, J.L. Stephenson, Jr., and R.A. Yost, *Rapid Commun. Mass Spectrom.*, 14, 1391-1397, (2000).
122. "Interpretation of Electrospray/Ion Trap Mass Spectra of Bile Acids and Other Surfactants," M.A. Rodriguez and R.A. Yost, *Rapid Commun. Mass Spectrom.*, 14, 1398-1403, (2000).
123. "Effects of Fragile Ions on Mass Resolution and Isolation for Tandem Mass Spectrometry in a Quadrupole Ion Trap," J.E. McClellan, J.P. Murphy III, J.J. Mulholland, and R.A. Yost, *Anal. Chem.*, 74, 402-412 (2002).
124. "Chemical Analysis of Human Skin Emanations: Comparison of Volatiles from Humans that Differ in Attraction of *Aedes aegypti* (Diptera: Culicidae) ," U.R. Bernier, D.L. Kline, C.E. Schreck, R.A. Yost, and D.R. Barnard, *J. Am. Mosquito Contr. Assoc.*, 18(3), 186-195 (2002).
125. "Internal Energy Deposition in Chemical Ionization/Tandem Mass Spectrometry," M.P. Ospina, D.H. Powell, and R.A. Yost, *J. Amer. Soc. Mass Spectrom.*, 14, 102-109 (2002).
126. "Parent and Neutral Loss Monitoring on a Quadrupole Ion Trap Mass Spectrometer: Screening of Acylcarnitines in Complex Mixture," J.E. McClellan, S.T. Quarumby, and R.A. Yost, *Anal. Chem.*, 74, 5799-5806 (2002).
127. "Synergistic Attraction of *Aedes aegypti* (L.) to Binary Blends of L-Lactic Acid and Acetone, Dichloromethane, or Dimethyl Disulfide," U.R. Bernier, D.L. Kline, K.H. Posey, M.M. Booth, R.A. Yost, and D.R. Barnard, *J. Medicinal Entomology*, 40(5), 653-656 (2003).
128. "Simultaneous Determination of Trace Levels of Nine Haloacetic Acids in Biological Samples as Their Pentafluorobenzyl Derivatives by Gas Chromatography-Tandem Mass Spectrometry in Electron-Capture Negative Ion Chemical Ionization Mode", M. Jia, W.W. Wu, R.A. Yost, P.W. Stacpoole, P.A. Chadik, and G.N. Henderson, *Anal. Chem.*, 75, 4065-4080 (2003).

Publications - continued

129. "Human Levels of Haloacetic Acids from Chlorinated Drinking Water", M. H. Jia, P.W. Stacpoole, P.A. Chadik, R. A. Yost, M. Chadha, B. Coats, G.N. Henderson, *Drug Metabolism Reviews*, 36, 323 (2004).
130. "Mass Spectral Fragmentation of the Intravenous Anesthetic Propofol and Structurally Related Phenols," L.K. Bajpai, V. Manoj, C.N. Seubert, R.A. Yost and D.M. Dennis *J. Amer. Soc. Mass Spectrom.*, 16, 814-24 (2005).
131. "Quadrupole Mass Analyzers: Theoretical and Practical Considerations," F.A. Kero, R.E. Pedder, and R.A. Yost, *Encyclopedia of Genetics, Genomics, Proteomics and Bioinformatics*, L. Jorde, M. Dunn, and S. Subramaniam, Eds., John Wiley & Sons, 9pp. (2005) (and on the web at Wiley Interscience).
132. "Analysis of Intact Tissue by Intermediate-Pressure MALDI on a Linear Ion Trap Mass Spectrometer," T.J. Garrett and R.A. Yost, *Anal. Chem.*, 78, 2465-2469 (2006).
133. "Imaging of Small Molecules in Tissue Sections with a New Intermediate-pressure MALDI Linear Ion Trap Mass Spectrometer," T.J. Garrett, M.C. Prieto-Conaway, V.Kovtoun, H.Bui, N. Izgarian, G. Stafford, and R.A. Yost, *Int. J. Mass Spectrom*, 260, 166-176, (2006).
134. "Human Kinetics of Orally and Intravenously Administered Low-Dose 1,2 ¹³C-Dichloroacetate," M. Jia, B. Coats, M. Chadha, B. Frentzen, J. Perez-Rodriguez, P.A. Chadick, R.A. Yost, G.N. Henderson, and P.W. Stacpoole, *J. Clin. Pharmacol.*, 46, 1449-1459, (2006).
135. "Utility of Imaging Mass Spectrometry by Matrix-Assisted Laser Desorption and Ionization (MALDI) on an Ion Trap Mass Spectrometer in the Analysis of Drugs and Metabolites in Biological Tissues," D. Drexler, T.J. Garrett, J.L. Cantone, R.W. Diters, J.G. Mitroka, M.C. Prieto Conaway, S.F. Adams, R.A. Yost, and M. Sanders, *J. Pharmacol. Toxicol. Meth.*, 55, 279-288 (2007).
136. "MALDI-Linear Ion Trap Microprobe MS/MS Studies of the Effects of Dichloroacetate on Lipid Content of Nerve Tissue," R.R. Landgraf, T.J. Garrett, N. Calcutt, P.W. Stacpoole, and R.A. Yost, *Anal. Chem.*, 79, 8170-8175, (2007).
137. "An Automated MALDI Matrix Deposition Method with Inkjet Printing for Imaging Mass Spectrometry," D.L. Baluya, T.J. Garrett, and R.A. Yost, *Anal. Chem.*, 79, 6862-6867, (2007).
138. "Evaluation of Derivatization Strategies for the Comprehensive Analysis of Endocrine Disrupting Compounds Using Gas Chromatography/Mass Spectrometry (GC/MS)," J.A. Bowden, D.M. Colosi, D.C. Mora-Montero, T.J. Garrett, and R.A. Yost, *J. Chrom. Sci.* 47, 44-51, (2008).
139. "Investigation of High-Performance Liquid Chromatography/Mass Spectrometry (HPLC/MS) Using a Monolithic Column to Separate a Diverse Suite of Steroids," D.M. Colosi, J.A. Bowden, D.C. Mora-Montero, T.J. Garrett, and R.A. Yost, *J. Chrom. Sci.* 47, 52-56, (2008).
140. "The Role of Trapped Ion Mass Spectrometry for Imaging", T.J. Garrett and R.A. Yost, Chapter 10 in *Practical Aspects of Trapped Ion Mass Spectrometry: Volume 5, Applications of Ion*

Publications - continued

- Trapping Devices*, R.E. March and J.F.J. Todd, ed., CRC Press, (2009) pp. 417-430.
141. "Enhanced Analysis of Steroids by Gas Chromatography/Mass Spectrometry (GC/MS) using Microwave-Accelerated Derivatization (MAD)", J.A. Bowden, D.M. Colosi, W.L. Stutts, D.C. Mora-Montero, T.J. Garrett, and R.A. Yost, *Anal. Chem.*, 81, 6725-6734, (2009).
142. Enhancement of Chemical Derivatization of Steroids by Gas Chromatography/Mass Spectrometry (GC/MS)", J.A. Bowden, D.M. Colosi, D.C. Mora-Montero, T.J. Garrett, and R.A. Yost, *J. Chrom. B*, 877, 3237-3242, (2009).
143. "Imaging of Lipids in Spinal Cord Using Intermediate Pressure MALDI-LIT/Orbitrap MS", R.R. Landgraf, M.C. Prieto-Conway, T.J. Garrett, P.W. Stacpoole, and R.A. Yost, *Anal. Chem.*, 81, 8488-8495, (2009).
144. "Pressure Tailoring' for Improved Ion Trap Performance", D.L. Baluya and R.A. Yost, Chapter 18 in *Practical Aspects of Trapped Ion Mass Spectrometry: Volume 4, Theory and Instrumentation*, R.E. March and J.F.J. Todd, ed., CRC Press, (2010) pp. 767-790.
145. "Analysis of Large Peptides by MALDI Using a Linear Quadrupole Ion Trap with Mass Range Extension", D.P. Magparangalan, T.J. Garrett, D.M. Drexler, and R.A. Yost, *Anal. Chem.*, 82, 930-934, (2010).
146. "Chemical Characterization of *Azadirachta indica* grafted on *Melia azedarach* and Analyses of Azadirachtin by HPLC-MS-MS (SRM) and Meliatoxins by MALDI-MS", M.R. Forin, V.E. Cornélio, M. da Silva, E. Rodrigues-Filho, J.B. Fernandes, P.C. Vieira, S.S. Martinez, M.P. Napolitano, R.A. Yost, *Phytochem. Anal.*, 21, 363-373 (2010).
147. "Quantitative MALDI-MSⁿ Analysis of Cocaine on an Autopsied Brain of a Chronic Human Cocaine User Employing a Wide-Isolation Window and Internal Standards", R.F. Reich, K. Cudzilo, J.A. Levisky, and R.A. Yost, *J. Amer. Soc. Mass Spectrom.*, 21, 564-571 (2010).
148. "Ion Mobility/Mass Spectrometry", J.H. Scrivens and R.A. Yost, *Int. J. Mass Spectrom.*, 298, 1 (2010).
149. "Design and Evaluation of a Novel Hemispherical FAIMS Cell", J.G. Bryant, M. Prieto, T.A. Prox, and R.A. Yost, *Int. J. Mass Spectrom.*, 298, 41-44 (2010).
150. "Tandem Mass Spectrometric Methods for Phospholipid Analysis in Brain Tissue", T.J. Garrett and R.A. Yost, Chapter 11 in *Mass Spectrometric Imaging (Methods in Molecular Biology Series)*, S. Rubakhin and J. Sweedler, ed., Humana, (2010) vol. 656, pp. 209-230.
151. "Solvent Vapor Effects on Planar High-Field Asymmetric Waveform Ion Mobility Spectrometry", L.C. Rorrer III, and R.A. Yost, *Int. J. Mass Spectrom.*, 300, 173-181 (2011).
152. "Distribution Studies of Drugs and Metabolites in Tissues by Mass Spectrometric Imaging", R.F. Reich, D.P. Magparangalan, T.J. Garrett, and R.A. Yost, Chapter 14 in *Mass Spectrometry in Drug Metabolism and Disposition: Basic Principles and Applications*, M.S. Lee and M. Zhu, ed., John Wiley & Sons, (2011), pp. 437-470.

Publications - continued

153. "Ion Mobility Spectrometer-Field Asymmetric Ion Mobility Spectrometer-Mass Spectrometry", M.J. Pollard, C.K. Hilton, K. Kaplan, R.A. Yost, and H.H. Hill Jr., *Int. J. Ion Mobil. Spec.*, 14, 15-22 (2011).
154. "Lipid Analysis of Flat-mounted Eye Tissue by Imaging Mass Spectrometry with Identification of Contaminants in Preservation", T.J. Garrett, R.F. Menger, W.W. Dawson, and R.A. Yost, *Anal. Bioanal. Chem.*, 401, 103-113 (2011).
155. "Spherical FAIMS: Comparison of Curved Electrode Geometries", M. Prieto and R.A. Yost, *Int. J. Ion Mobil. Spectrom.*, 14, 61-69 (2011).
156. "Quantification of Lipids in Nerve Tissue Using MALDI Mass Spectrometric Imaging", R.R. Landgraf, M.C. Prieto-Conway, T.J. Garrett, P.W. Stacpoole, and R.A. Yost, *Rapid Commun. Mass Spectrom.*, 25, 3178-3184 (2011).
157. "Direct Matrix-Assisted Laser Desorption/Ionization Mass Spectrometric Imaging of Cellulose and Hemicelluloses in *Populus* Tissue", K.A. Lunsford, G.F. Peter, and R.A. Yost, *Anal. Chem.*, 83, 6722-6730 (2011).
158. "Characterization of Protonated Phospholipids as Fragile Ions in Ion Trap Mass Spectrometry", T.J. Garrett, M.M. Merves, and R.A. Yost, *Int. J. Mass Spectrom.*, 308, 299-306 (2011).
159. "Quantitative Tandem Mass Spectrometric Imaging of Endogenous Acetyl-L-Carnitine from Piglet Brain Tissue Using an Internal Standard", D.A. Pirman, P.R. Borum, and R.A. Yost, *Anal. Chem.*, 83, 8575-8581 (2011).
160. "Mass Spectrometric Imaging for Drug Distribution in Tissues", D.P. Magparangalan, T.J. Garrett, D.M. Drexler, and R.A. Yost, Chapter 26 in *ADME-Enabling Technologies for Drug Design and Development*, D. Zhang and S. Surapaneni, ed., John Wiley & Sons, (2012), pp. 401-417.
161. "Comparison of Rectangular and Bisinusoidal Waveforms in a Miniature Planar High-Field Asymmetric Waveform Ion Mobility Spectrometer", M. Prieto, C-W. Tsai, S. Boumsellek, R. Ferran, I. Kaminsky, S. Harris, and R.A. Yost, *Anal. Chem.*, 83, 9237-9243 (2011).
162. "MALDI Mass Spectrometric Imaging of Cardiac Tissue Following Myocardial Infarction in a Rat Coronary Artery Ligation Model", R.F. Menger, W.L. Stutts, D. Anbukumar, J.A. Bowden, D.A. Ford, and R.A. Yost, *Anal. Chem.*, 84, 1117-1125 (2012).
163. "High-Field Asymmetric Waveform Ion Mobility Spectrometry with Solvent Vapor Addition: A Potentially Greener Analytical Technique for Bioanalysis", C-W. Tsai, R.A. Yost, and T.J. Garrett, *Bioanalysis*, 4, 1363-1375 (2012).
164. "Foreword", R.A. Yost, *Handbook of Mass Spectrometry*, MS Lee, ed., John Wiley & Sons, p. xi, (2012).

Publications - continued

165. "Quantitative MALDI Tandem Mass Spectrometric Imaging of Cocaine from Brain Tissue with a Deuterated Internal Standard", D.A. Pirman, R.F. Reich, A. Kiss, R.M.A. Heeren, and R.A. Yost, *Anal. Chem.*, 85, 1081–1089 (2013).
166. "Identifying Tissue-Specific Signal Variation in MALDI Mass Spectrometric Imaging using an Internal Standard", D.A. Pirman, A. Kiss, R.M.A. Heeren, and R.A. Yost, *Anal. Chem.*, 85, 1090–1096 (2013).
167. "Jim Morrison, Friend and Colleague", C.G. Enke and R.A. Yost, *J. Amer. Soc. Mass Spectrom.* 24, 1319-1323 (2013).
168. "Characterization of Phosphatidylcholine Oxidation Products by MALDI MS", W.L. Stutts, R. F. Menger, A. Kiss, R.M.A. Heeren, R. A. Yost, *Anal. Chem.* 85, 11410-11419 (2013).
169. "Isotopic Ratio Outlier Analysis Global Metabolomics of *Caenorhabditis elegans*", G. S. Stupp, C.S. Clendinen, R. Ajredini, M.A. Szewc, T. Garrett, R.F. Menger, R. A. Yost, C. Beecher, A. S. Edison, *Anal. Chem.*, 85, 11858-11865 (2013).
170. "Standardized Method for Solubility and Storage of Capsaicin-based Solutions for Cough Induction", M. Costanzo, P. Davenport, and R.A. Yost, *Cough*, 10:6 doi: 10.1186/1745-9974-10-6 (2014).
171. "Performance Enhancement in the Measurement of 5 Endogenous Steroids in Human Serum by LC-MS/MS Combined with Differential Ion Mobility Spectrometry", J.A. Ray, M.M. Kushnir, R.A. Yost, A.L. Rockwood, and A.W. Meikle, *Clin. Chim. Acta*, 438, 330-336 (2015).
172. "Solvent Vapor Effects in Planar High-Field Asymmetric Waveform Ion Mobility Spectrometry: Solvent Trends and Temperature Effects", L.C. Rorrer, R.A. Yost, *Intl. J. Mass Spectrom.*, 378, 336-346 (2015).
173. "Metabolomic Analysis of Oxidative and Glycolytic Skeletal Muscles by Matrix-Assisted Laser Desorption/Ionization Mass Spectrometric Imaging (MALDI MSI)", Y. H. Tsai, T.J. Garrett, C.S. Carter, R.A. Yost, *J. Amer. Soc. Mass Spectrom.*, 26, 915-923 (2015).
174. "MALDI Mass Spectrometric Imaging of the Nematode *Caenorhabditis Elegans*", R. F. Menger, C. S. Clendinen, L.A. Searcy, A. S. Edison, R. A. Yost, *Current Metabolomics*, 3, 130-137 (2015).
175. "What's the Most Meaningful Standard for Mass Spectrometry: Instrument Detection Limit or Signal-to-Noise Ratio?" T.L. Sheahan, R.A. Yost, *Cur. Trends Mass Spectrom.*, October 2015, 2-7 (2015).
176. "Comparison of Blood Plasma Sample Preparation Methods for Combined LC-MS Lipidomics and Metabolomics", R. E. Patterson, A. J. Ducrocq, D.J. McDougall, T. J. Garrett, R. A. Yost, *J. Chrom. B*, 1002, 260-266 (2015). doi:10.1016/j.jchromb.2015.08.018

Publications - continued

177. "Ionization Sources and Mass Analyzers in MS Imaging", Y.H. Tsai, R.F. Menger, D. M. Drexler, R. A. Yost, T. J. Garrett, *Bioanalysis*, 7, 2629-2637, (2015). doi:10.4155/bio.15.187
178. "Liquid Chromatography-Mass Spectrometry Metabolic and Lipidomic Sample Preparation Workflow for Suspension-Cultured Mammalian Cells using Jurkat T lymphocyte Cells", C.Z. Ulmer, R.A. Yost, J. Chen, C.E. Mathews, T.J. Garrett, *J. Proteomics Bioinform.* 8(6) 126-132 (2015). PMID: 26401069
179. "The Role of Trapped Ion Mass Spectrometry for Imaging", T. J. Garrett and R. A. Yost, Chapter 14 in *Practical Aspects of Trapped Ion Mass Spectrometry, Volume V: Applications of Ion Trapping Devices*, R.E. March and J.F.J. Todd, ed., CRC Press, (2016), pp. 417-436.
180. "Ion Mobility in Clinical Analysis: Current Progress and Future Perspectives", C. D. Chouinard, M. S. Wei, C. R. Beekman, R. H. J. Kemperman, R. A. Yost, *Clin. Chem.*, 62, 124-133, (2016). doi: 10.1373/clinchem.2015.238840
181. "Lipotoxicity in Steatohepatitis Occurs Despite an Increase in Tricarboxylic Acid Cycle Activity", R. E. Patterson, S. Kalavalapalli, C. M. Williams, M. Nautiyal, J. T. Mathew, J. Martinez, M. K. Reinhard, D. J. McDougall, J.R. Rocca, R. A. Yost, K. Cusi, T. J. Garrett, N. E. Sunny, *Am. J. Physiol. Endocrinol. Metab.* 310(7) E484-494 (2016). doi: 10.1152/ajpendo.00492.2015
182. "Isotopic Ratio Outlier Analysis of the *S. cerevisiae* Metabolome Using Accurate Mass Gas Chromatography/Time-of-Flight Mass Spectrometry: A New Method for Discovery", Qiu Y., Moir R., Willis I., Beecher C., Tsai Y.H., Garrett T.J., Yost R.A., Kurland I.J., *Anal. Chem.* 88, 2747-2754 (2016). doi: 10.1021/acs.analchem.5b04263.
183. "Analysis of Ammonium Nitrate/Urea Nitrate with Crown Ethers and Sugars as Modifiers by Electrospray Ionization-Mass Spectrometry and Ion Mobility Spectrometry", C.W. Tsai, A. Midley, C. Wu, and R.A. Yost, *Anal. Chem.*, 88, 9435-9442 (2016). DOI: 10.1021/acs.analchem.6b01322
184. "Maternal exposure to di-2 ethylhexylphthalate and adverse delivery outcomes: A systematic review", L. Yaghjyan, G. L. Ghita, M. Dumont-Driscoll, S. Chang, R. A. Yost, *Reprod. Tox.*, 65, 76-86 (2016). Doi: 10.1016/j.reprotox.2016.07.002
185. "Skeletal muscle fiber analysis by atmospheric pressure scanning microprobe matrix-assisted laser desorption/ionization mass spectrometric imaging at high mass and high spatial resolution", Y. Tsai, D. R. Bhandari, T. J. Garrett, C.S. Carter, B. Spengler, R. A. Yost, *Proteomics* 16,1822-1824 (2016). DOI: 10.1002/pmic.201500536
186. "Differential Neuroproteomic and Systems Biology Analysis of Spinal Cord Injury", A. Moghieb, H. M. Bramlett, J. H. Das, Z. Yang, T. Selig, R. A. Yost, M. Wang, W. D. Dietrich, K. W. Wang, *Molec. Cell. Proteom.* 15 2379-2395, (2016). doi: 10.1074/mcp.M116.058115
187. "Identification of Meliatoxins in *Melia azedarach* Extracts Using Mass Spectrometry for Quality Control", V. Cornelio, M. Forim, B. Perlatti, J. Fernandes, P. Vieira, M.P. Napolitano, R.A. Yost, M.F. da Silva, *Planta Med.*, 83 312-317 (2017). DOI: 10.1055/s-0042-115773

Publications - continued

188. "Portable FAIMS: Applications and Future Perspectives", M.T. Costanzo, J.J. Boock, R.H.J. Kemperman, M.S. Wei, C.R. Beekman, R.A. Yost, *Int. J. Mass Spectrom.* (2016), doi:10.1016/j.ijms.2016.12.007
189. "Precast Gelatin-Based Molds for Tissue Embedding Compatible with Mass Spectrometry Imaging", E. L. Gill, R. A. Yost, V. Vedam-Mai, and T. Garrett. *Anal. Chem.* (2016). DOI: 10.1021/acs.analchem.6b04185
190. "Experimental and Theoretical Investigation of Sodiated Multimers of Steroid Epimers with Ion Mobility-Mass Spectrometry", C.D. Chouinard, V. W. D. Cruzeiro, A. E. Roitberg, R. A. Yost, *J. Am. Soc. Mass Spectrom.* (2016). doi:10.1007/s13361-016-1525-7
191. "A Robust Lipidomics Workflow for Mammalian Cells, Plasma, and Tissue using Liquid-Chromatography High-Resolution Tandem Mass Spectrometry", C. Z. Ulmer, R. Patterson, J. Koelmel, T. J. Garrett, R. A. Yost, Chapter 10 in *Lipidomics: Methods and Protocols*, S.K. Bhattacharya, ed., Springer, (2016).
192. "Ion Mobility-Mass Spectrometry Separation of Steroid Structural Isomers and Epimers", C. D. Chouinard, C.R. Beekman, R. H.J. Kemperman, H. M. King, R. A. Yost, *Int. J. Ion Mobility Spectrom.* (2016). doi:10.1007/s12127-016-0213-4
193. "Common Cases of Improper Lipid Annotation using High-Resolution Tandem Mass Spectrometry Data and Corresponding Limitations in Biological Interpretation", J.P. Koelmel, C.Z. Ulmer, C.M. Jones, R.A. Yost, J.A. Bowden, *Biochim. Biophys. Acta* (2017). <http://dx.doi.org/10.1016/j.bbalip.2017.02.016>
194. "LipidMatch: an automated workflow for rule-based lipid identification using untargeted high-resolution tandem mass spectrometry data", J.P. Koelmel, N.M. Kroeger, C.Z. Ulmer, J.A. Bowden, R.E. Patterson, J.A. Cochran, C.W.W. Beecher, T.J. Garrett, R.A. Yost, *BMC Bioinformatics*, in press (2017).
195. "Investigating Differences in Gas-Phase Conformations of 25-Hydroxyvitamin D3 Sodiated Epimers using Ion Mobility-Mass Spectrometry and Theoretical Modeling Journal of The American Society for Mass Spectrometry", C.D. Chouinard, V. W. D. Cruzeiro, A. E. Roitberg, R. A. Yost, *J. Am. Soc. Mass Spectrom.*, in press (2017).
196. "Plasma Metabolomics of Human Colon Cancer Center by Positive Ion Electrospray Mass Spectrometry", N.M. Elliott, T.J. Garrett, J.V. Johnson, E.M. Siegel, D. Shibata, J.M. Koomen, R.A. Yost, and D.H. Powell, *Anal. Chem.*, submitted (2016).
197. "Laser desorption/ionization mass spectrometry and mass spectrometric imaging for the analysis of hen egg lipids in replica paint cross-sections", E.V. O'Neill, J. Arslanoglu, R.F. Menger, Y.-H. Tsai, and R.A. Yost, *Anal. Bioanal. Chem.*, submitted (2016).
198. "Comparative Profiles of Cholesterols between Normotensive and Hypertensive States in DBA/2J Mouse Aqueous Humor", G. Edwards, K. Aribindi, L. Searcy, R. A. Yost, S K. Bhattacharya, *Int. Journal of Biochemistry and Cell Biology*, submitted (2016).

Publications - continued

199. "Application of Paper Spray Ionization for Explosives Analysis", C. Tsai, C. A. Tipple, R. A. Yost, *Rapid Commun. Mass Spectrom.*, submitted (2016).
200. "Expanding lipidome coverage using LC-MS/MS data-dependent acquisition with automated exclusion list generation", J. P. Koelmel, N.M. Kroeger, E. L. Gill, C. Z. Ulmer, J. A. Browden, R. E. Patterson, R. A. Yost, T. J. Garrett, *JASMS*, submitted (2016).
201. "High Resolution/Accurate Mass Tandem MS of Isotopically Complex Cluster Ions from the Artists' Pigment Lead White", M.P. Napolitano, M.C. Prieto, P.-C. Kuo, J. Arslanoglu, R.A. Yost, *Int. J. Mass Spectrom.*, submitted (2016).
202. "Tandem Mass Spectrometry of Laser-Reduced Anthraquinones for Painted Works of Art", M.P. Napolitano, M.C. Prieto, P.-C. Kuo, J. Arslanoglu, R.A. Yost, *Int. J. Mass Spectrom.*, submitted (2016).
203. "Direct lipid profiling of single neurons and neuronal compartments", M. P. Napolitano, L.L. Moroz, R.A. Yost, *Nature Sci. Reports*, submitted (2016).
204. "Improved MALDI-MSⁿ Precision by Selective Isolation of Analyte and Internal Standard Ions Using a Multi-Notch SWIFT Waveform", R.F. Reich and R.A. Yost, *J. Amer. Soc. Mass Spectrom.*, submitted (2016).
205. "Characterization of Lignocellulosic Biomass using ToF-SIMS Imaging and Fluorescence Microscopy", K.A. Lunsford, A. Kiss, R.M.A. Heeren, G.F. Peter, and R.A. Yost, *Bioresource Tech.*, submitted (2016).
206. "Investigation of Urinary Metabolites in Female Manatees by Time-of-Flight and Linear Ion Trap Mass Spectrometers Coupled to Reverse Phase and Hydrophilic Interaction LC", N.M. Elliott, M.L. Bills, J.V. Johnson, T.J. Garrett, R.A. Yost, and D.H. Powell, *Anal. Chem.*, submitted (2016).