

***CURRICULUM VITAE***

**MICHAEL W. OGDEN**

**I. ADDRESS**

Business: RAI Services Company  
Scientific & Regulatory Affairs  
401 N. Main Street  
P.O. Box 464  
Winston-Salem, NC 27102  
Tel: (336) 741-5787  
Fax: (336) 728-7675  
E-mail: ogdenm@rjrt.com

**II. EDUCATION**

1980 B.S. Chemistry, Emory & Henry College, Emory, Virginia  
1980 B.S. Applied Mathematics, Emory & Henry College, Emory, Virginia  
1985 Ph.D. Analytical Chemistry, Virginia Polytechnic Institute & State University,  
Blacksburg, Virginia (Dissertation title: “Deactivation and Preparation of Fused  
Silica Open Tubular Columns for Gas and Supercritical Fluid Chromatography;”  
Dissertation Advisor: Professor Harold M. McNair)

**III. PROFESSIONAL EXPERIENCE**

2/2018–present — Senior Vice President, RAI Services Company, Scientific & Regulatory Affairs Department. Responsible for regulatory compliance for all tobacco products across all Reynolds American tobacco operating companies, including regulatory science, regulatory submissions, regulatory process and compliance, and scientific engagement with regulatory agencies, industry, and public health.

4/2016–1/2018 — Vice President, RAI Services Company, Scientific & Regulatory Affairs Department. Responsible for FDA submissions and engagement for traditional tobacco products across all Reynolds American tobacco operating companies, behavioral and statistical research to support regulatory submissions, and engagement with regulatory agencies, industry, and public health.

1/2013–3/2016 — Senior Director, RAI Services Company, Regulatory Oversight Department. Responsible for scientific and regulatory advocacy and engagement and regulatory submissions for all Reynolds American tobacco operating companies.

1/2010–12/2012 — Senior Director, R.J. Reynolds Tobacco Company, Regulatory Oversight Department. Responsible for scientific and regulatory advocacy and engagement for all Reynolds American tobacco operating companies.

11/2007–12/2009 — Senior Director, R.J. Reynolds Tobacco Company, Research & Development Department, Scientific & Regulatory Strategy & Compliance Division. Responsible for ensuring product regulatory compliance, directing the course of related scientific strategy and operation of the R&D library.

1/2006–10/2007 — Senior Director, R.J. Reynolds Tobacco Company, Research & Development Department, Human Studies Division. Responsible for directing the technical course of R&D efforts in areas related to human smoking behavior and the chemistry, exposure, and molecular dosimetry of tobacco smoke and environmental tobacco smoke, including clinical trials.

10/2003–12/2005 — Director, R.J. Reynolds Tobacco Company, Research & Development Department, Human Studies Division. Responsible for directing the technical course of R&D efforts in areas related to human smoking behavior and the chemistry, exposure, and molecular dosimetry of tobacco smoke and environmental tobacco smoke.

7/2001–9/2003 — Director, R.J. Reynolds Tobacco Company, Research & Development Department, Biological Chemistry Division. Responsible for directing the technical course of R&D efforts in areas related to the chemistry, exposure, and molecular dosimetry of tobacco smoke and environmental tobacco smoke.

5/1998–6/2001 — Principal Scientist, R.J. Reynolds Tobacco Company, Research & Development Department, Environmental & Molecular Toxicology Division. Responsible for managing the technical course of R&D efforts in areas related to the chemistry of tobacco smoke and environmental tobacco smoke.

1/2006–present — Adjunct Professor of Chemistry, Virginia Polytechnic Institute & State University. Responsible for advisory consulting in the RJR-Harold McNair Postdoctoral Fellowship Program.

1/1998–12/2005 — Adjunct Professor of Chemistry, Virginia Polytechnic Institute & State University. Responsible for coordinating the RJR-Kurt Grob Memorial Postdoctoral Fellowship Program and mentoring postdoctoral research fellows.

6/1995–12/1997 — Visiting Professor of Chemistry, Virginia Polytechnic Institute & State University. Responsible for coordinating the RJR-Kurt Grob Memorial Postdoctoral Fellowship Program and mentoring postdoctoral research fellows.

8/1993–4/1998 — Master Scientist, RJR R&D, Environmental & Molecular Toxicology Division (12/1994–4/1998), Smoke Chemistry & Physics Division (8/1993–12/1994). Responsible for developing and leading R&D research projects on the chemistry of tobacco smoke and environmental tobacco smoke at the Division level.

7/1991–7/1993 — Senior Staff R&D Chemist, RJR R&D, Smoke Chemistry & Physics Division. Responsible for conceiving, conducting, and supervising research on the chemistry of tobacco smoke and environmental tobacco smoke.

11/1988–6/1991 — Senior R&D Chemist, RJR R&D, Environmental Tobacco Smoke Division. Responsible for conducting and supervising research on the chemistry of tobacco smoke and environmental tobacco smoke.

10/1985–10/1988 — R&D Chemist, RJR R&D, Environmental Tobacco Smoke Division. Responsible for planning, executing, and interpreting research on the chemistry of tobacco smoke and the chemistry of environmental tobacco smoke.

12/1982–5/1985 — Consultant, J.T. Baker Chemical Company. Instructor for nationwide 1-day seminars on sample preparation by solid phase extraction.

6/1981–6/1985 — Instructor, American Chemical Society Short Courses on Gas Chromatography and High Performance Liquid Chromatography

7/1983–7/1985 — Graduate Research Assistant, Chemistry Department, Virginia Polytechnic Institute & State University

9/1980–6/1983 — Graduate Teaching Assistant, Chemistry Department, VPI&SU. Instructor for Undergraduate laboratory courses in Freshman Chemistry, Freshman Honors Chemistry, Chromatography, Electrochemistry, and Spectroscopy.

#### IV. SCHOLARLY CONTRIBUTIONS

##### A. Technical Publications

1. Ogden, M.W. and H.M. McNair, "Improved Quantitative Capillary GC by the Use of CO<sub>2</sub> as Secondary Coolant in Cold On-Column Injection," J. of High Resolution Chromatography 6 (1983) 550.
2. Ogden, M.W. and H.M. McNair, "Hydrothermal Treatment of Fused Silica Capillary Columns," J. of High Resolution Chromatography 8 (1985) 326.
3. McNair, H.M., M.W. Ogden, and J.L. Hensley, "Recent Advances in Gas Chromatography," American Laboratory 17(8) (1985) 15.
4. Ogden, M.W. and H.M. McNair, "Synthesis of Siloxane Stationary Phases for Capillary Gas Chromatography and Supercritical Fluid Chromatography," J. of High Resolution Chromatography 8 (1985) 816.
5. Ogden, M.W. and H.M. McNair, "Synthesis of Siloxane Stationary Phases for Capillary Chromatography," Proceedings of the Sixth International Symposium on Capillary Chromatography, P. Sandra (Ed.), Dr. A. Hüthig, Heidelberg, W. Germany (1985) 149.
6. Ogden, M.W. and H.M. McNair, "Characterization of Fused Silica Capillary Tubing by Contact Angle Measurements," J. Chromatography 354 (1986) 7.
7. Ogden, M.W. and K.C. Maiolo, "Gas Chromatographic Determination of Solanesol in Environmental Tobacco Smoke (ETS)," J. of High Resolution Chromatography 11 (1988) 341.
8. Ogden, M.W., "High Resolution Gas Chromatography of Tobacco Smoke: The Contributions of Kurt Grob," J. of High Resolution Chromatography 11 (1988) 428. (Contribution invited by the Editors for a special memorial issue.)
9. Ogden, M.W. and K.C. Maiolo, "Collection and Analysis of Solanesol as a Tracer of Environmental Tobacco Smoke," Indoor and Ambient Air Quality, R. Perry and P.W. Kirk (Eds.), Selper Ltd., London, England (1988) 77.
10. Eatough, D.J., K. Wooley, H. Tang, E.A. Lewis, L.D. Hansen, N.L. Eatough, and M.W. Ogden, "Sampling Gaseous Compounds in Environmental Tobacco Smoke," Proceedings of the 1988 EPA/APCA International Symposium: Measurement of Toxic and Related Air Pollutants, Air Pollution Control Assoc., Pittsburgh, Pennsylvania (1988) 739.
11. Ogden, M.W., C.W. Nystrom, G.B. Oldaker III, and F.W. Conrad, Jr., "Evaluation of a Personal Passive Sampling Device for Determining Exposure to Nicotine in Environmental Tobacco Smoke," Proceedings of the 1989 EPA/AWMA International Symposium: Measurement of Toxic and Related Air Pollutants, Air & Waste Management Assoc., Pittsburgh, Pennsylvania (1989) 552.
12. Ogden, M.W., "Gas Chromatographic Determination of Nicotine in Environmental Tobacco Smoke: Collaborative Study," J. Association Official Analytical Chemists 72 (1989) 1002.

13. Ogden, M.W., L.W. Eudy, D.L. Heavner, F.W. Conrad, Jr., and C.R. Green, "Improved Gas Chromatographic Determination of Nicotine in Environmental Tobacco Smoke," Analyst 114 (1989) 1005.
14. Ogden, M.W., "Capillary SFC-FID Chromatogram of Solanesol," SFC Applications, K.E. Markides and M.L. Lee (Eds.), Brigham Young University Press, Provo, Utah (1989) 369.
15. Ogden, M.W. and K.C. Maiolo, "Collection and Determination of Solanesol as a Tracer of Environmental Tobacco Smoke in Indoor Air," Environmental Science & Technology 23 (1989) 1148.
16. Caka, F.M., D.J. Eatough, E.A. Lewis, H. Tang, S.K. Hammond, B.P. Leaderer, P. Koutrakis, J.D. Spengler, A. Fasano, J. McCarthy, M.W. Ogden, and J. Lewtas, "A Comparison Study of Sampling Techniques for Nicotine in Indoor Environments," Proceedings of the 1989 EPA/AWMA International Symposium: Measurement of Toxic and Related Air Pollutants, Air & Waste Management Assoc., Pittsburgh, Pennsylvania (1989) 525.
17. Caka, F.M., D.J. Eatough, E.A. Lewis, H. Tang, S.K. Hammond, B.P. Leaderer, P. Koutrakis, J.D. Spengler, A. Fasano, J. McCarthy, M.W. Ogden, and J. Lewtas, "An Intercomparison of Sampling Techniques for Nicotine in Indoor Environments," Environmental Science & Technology 24 (1990) 1196.
18. Walker, J.C., D.B. Kurtz, F.M. Shore, M.W. Ogden, J.H. Reynolds IV, "Apparatus for the Automated Measurement of the Responses of Humans to Odorants," Chemical Senses 15 (1990) 165.
19. Silver, W.L., D.B. Walker, M.W. Ogden, and J.C. Walker, "Nasal Trigeminal Responses to Toluene Presented by an Automated Delivery System," Chemical Senses 15 (1990) 701.
20. Nelson, P.R. and M.W. Ogden, "Measurement of Ethenylpyridine in Environmental Tobacco Smoke," Proceedings of the 38<sup>th</sup> ASMS Conference on Mass Spectrometry and Allied Topics, Tucson, Arizona, June 3-8 (1990) 677.
21. Oldaker III, G.B., M.W. Ogden, K.C. Maiolo, J.M. Conner, F.W. Conrad, Jr., and P.O. DeLuca, "Results from Surveys of Environmental Tobacco Smoke in Restaurants in Winston-Salem, North Carolina," INDOOR AIR '90; Proceedings of the 5<sup>th</sup> International Conference on Indoor Air Quality and Climate, International Conference on Indoor Air Quality and Climate, Ottawa, Canada (1990) 281.
22. Nelson, P.R., M.W. Ogden, K.C. Maiolo, D.L. Heavner, and B.B. Collie, "Predictive Value of Nicotine as an Environmental Tobacco Smoke Marker," INDOOR AIR '90; Proceedings of the 5<sup>th</sup> International Conference on Indoor Air Quality and Climate, International Conference on Indoor Air Quality and Climate, Ottawa, Canada (1990) 367.
23. Ogden, M.W., K.C. Maiolo, G.B. Oldaker III, and F.W. Conrad, Jr., "Evaluation of Methods for Estimating the Contribution of ETS to Respirable Suspended Particles," INDOOR AIR '90; Proceedings of the 5<sup>th</sup> International Conference on Indoor Air Quality and Climate, International Conference on Indoor Air Quality and Climate, Ottawa, Canada (1990) 415.
24. Ogden, M.W., "Use of Capillary Chromatography in the Analysis of Environmental Tobacco Smoke," Capillary Chromatography: The Applications, W. Jennings and J. Nikelly (Eds.), Dr. A. Hüthig, Heidelberg, Germany (1991) 67.
25. Chung, H.L., J.C. Aldridge, and M.W. Ogden, "Thermal Study of Solanesol by On-Line Thermogravimetry/Gas Chromatography/Mass Spectrometry," Proceedings of the 39<sup>th</sup> ASMS Conference on Mass Spectrometry and Allied Topics, Nashville, Tennessee, May 19-24 (1991) 730.
26. Burleigh-Flayer, H.D., D.E. Dodd, J.C. Walker, R.A. Jennings, A.T. Mosberg, and M.W. Ogden, "The Respiratory Effects of n-Amyl and n-Butyl Acetate in Mice," The Toxicologist 11 (1991) 86.
27. Ogden, M.W., "Equivalency of Gas Chromatographic Conditions in Determination of Nicotine in Environmental Tobacco Smoke: Minicollaborative Study," J. AOAC International 75 (1992) 729.
28. Ogden, M.W. and K.C. Maiolo, "Comparison of GC and LC for Determining Solanesol in Environmental Tobacco Smoke," LC-GC 10 (1992) 459.

29. Coggins, C.R.E., P.H. Ayres, A.T. Mosberg, M.W. Ogden, J.W. Sagartz, and A.W. Hayes, "Fourteen-Day Inhalation Study in Rats, Using Aged and Diluted Sidestream Smoke from a Reference Cigarette. I. Inhalation Toxicology and Histopathology," Fundamental and Applied Toxicology 19 (1992) 133.
30. Ogden, M.W. and K.C. Maiolo, "Comparative Evaluation of Diffusive and Active Sampling Systems for Determining Airborne Nicotine and 3-Ethenylpyridine," Environmental Science & Technology 26 (1992) 1226.
31. Heavner, D.L., M.W. Ogden, and P.R. Nelson, "A Multisorbent Thermal Desorption GC/MSD Method for the Determination of Target Volatile Organic Compounds in Indoor Air," Environmental Science & Technology 26 (1992) 1737.
32. Nelson, P.R., D.L. Heavner, B.B. Collie, K.C. Maiolo, and M.W. Ogden, "Effect of Ventilation and Sampling Time on Environmental Tobacco Smoke Component Ratios," Environmental Science & Technology 26 (1992) 1909.
33. Recent Advances in Tobacco Science Volume 18, "Highlights of Current Research on Tobacco and Tobacco Chemistry," V.A. Sisson, S.W. McCarty, and M.W. Ogden (Eds.), Tobacco Chemists' Research Conference, Raleigh, Montreal, Canada (1992). Available from Tobacco Literature Service, North Carolina State University, D.H. Hill Library, Raleigh, North Carolina, 27695, USA.
34. Ogden, M.W., K.C. Maiolo, P.R. Nelson, D.L. Heavner, and C.R. Green, "Artefacts in Determining the Vapour-Particulate Phase Distribution of Environmental Tobacco Smoke Nicotine," Environmental Technology 14 (1993) 779.
35. Ogden, M.W., R.A. Davis, K.C. Maiolo, M.F. Stiles, D.L. Heavner, R.B. Hege, and W.T. Morgan, "Multiple Measures of Personal ETS Exposure in a Population-Based Survey of Nonsmoking Women in Columbus, Ohio," INDOOR AIR '93; Proceedings of the 6<sup>th</sup> International Conference on Indoor Air Quality and Climate, Indoor Air '93, Helsinki, Finland (1993) 523.
36. Recent Advances in Tobacco Science Volume 19, "Menthol and the Design of Mentholated Cigarettes," S.W. McCarty, M.W. Ogden, and H.R. Burton (Eds.), Tobacco Chemists' Research Conference, Gatlinburg, Tennessee (1993). Available from Tobacco Literature Service, North Carolina State University, D.H. Hill Library, Raleigh, North Carolina, 27695, USA.
37. Ogden, M.W. and P.R. Nelson, "Detection of Alkaloids in Environmental Tobacco Smoke," Modern Methods of Plant Analysis, Vol. 15: Alkaloids, H.F. Linskens and J.F. Jackson (Eds.), Springer-Verlag, Berlin (1994) 163-189. (Contribution invited by the Editors.)
38. Nelson, P.R., P. Martin, M.W. Ogden, D.L. Heavner, C.H. Risner, K.C. Maiolo, P.S. Simmons, W.T. Morgan, "Environmental Tobacco Smoke Characteristics of Different Commercially Available Cigarettes," Fourth International Aerosol Conference Abstracts, R.C. Flagan (Ed.), American Association for Aerosol Research, Cincinnati (1994) 454-455.
39. Coggins, C.R.E., P.H. Ayres, A.T. Mosberg, and M.W. Ogden, "Aerosol Characterization in a Sub-chronic Inhalation Study in Rats, Using Aged and Diluted Sidestream Smoke from a Reference Cigarette," Fourth International Aerosol Conference Abstracts, R.C. Flagan (Ed.), American Association for Aerosol Research, Cincinnati (1994) 742-743.
40. Recent Advances in Tobacco Science Volume 20, "Positive Aspects of Smoking," J.H. Robinson, M.W. Ogden, H.R. Burton, and L.W. Renfro (Eds.), Tobacco Chemists' Research Conference, Greensboro, North Carolina (1994). Available from Tobacco Literature Service, North Carolina State University, D.H. Hill Library, Raleigh, North Carolina, 27695, USA.
41. Heavner, D.L., W.T. Morgan, and M.W. Ogden, "Determination of Volatile Organic Compounds and ETS Apportionment in 49 Homes," Environment International 21 (1995) 3-21.
42. Ogden, M.W., D.L. Heavner, T.L. Foster, K.C. Maiolo, S.L. Cash, J.D. Richardson, P. Martin, P.S. Simmons, F.W. Conrad, and P.R. Nelson, "Personal Monitoring System for Measuring Environmental Tobacco Smoke Exposure," Environmental Technology 17 (1996) 239-250.
43. Ogden, M.W., R.J. Fix, and J.W. Thompson, "A Robotic System for Microgram-Level Filter Weighing," American Laboratory 28 (1996) 13-19.

44. Heavner, D.L., W.T. Morgan, and M.W. Ogden, "Determination of Volatile Organic Compounds and Respirable Suspended Particulate Matter in New Jersey and Pennsylvania Homes and Workplaces," Environment International 22 (1996) 159-183.
45. Ogden, M.W., "Occupational Exposure to Environmental Tobacco Smoke," Journal of the American Medical Association 275 (1996) 441.
46. Ogden, M.W., "Environmental Tobacco Smoke Exposure of Smokers Relative to Nonsmokers," Analytical Communications 33 (1996) 197-198.
47. Maiolo, K.C., J.C. Walker, and M.W. Ogden, "Method for Calibrating Olfactometer Output Part 1. Acetic and Propionic Acids," Analytical Communications 33 (1996) 199-202.
48. Ogden, M.W., "Estimating Exposure to Environmental Tobacco Smoke," Journal of the American Medical Association 276 (1996) 603-604.
49. Martin, P., P.R. Nelson, K.C. Maiolo, C.H. Risner, P.S. Simmons, W.T. Morgan, and M.W. Ogden, "Environmental Tobacco Smoke (ETS): A Market Cigarette Study," Environment International 23 (1997) 75-90.
50. Nelson, P.R., F.W. Conrad, S.P. Kelly, K.C. Maiolo, J.D. Richardson, and M.W. Ogden, "Composition of Environmental Tobacco Smoke (ETS) from International Cigarettes and Determination of ETS-RSP:Particulate Marker Ratios," Environment International 23 (1997) 47-52.
51. Ogden, M.W. and P. Martin, "The Use of Cigarette Equivalents to Assess Environmental Tobacco Smoke Exposure," Environment International 23 (1997) 123-138.
52. Ogden, M.W., W.T. Morgan, D.L. Heavner, R.A. Davis, and T.J. Steichen, "National Incidence of Smoking and Misclassification among the U.S. Married Female Population," Journal of Clinical Epidemiology 50 (1997) 253-263.
53. Ogden, M.W., F.W. Conrad, S.P. Kelly, K.C. Maiolo, J.D. Richardson, and P.R. Nelson, "Environmental Tobacco Smoke Particle Markers: An International Cigarette Study," Papers Presented at the Joint Meeting of the Smoke and Technology Groups, Hamburg, Germany (1997) 330-337. (Available from: CORESTA, 11 Rue du Quatre Septembre, 75002, Paris, France.)
54. Nelson, P.R., F.W. Conrad, S.P. Kelly, K.C. Maiolo, J.D. Richardson, and M.W. Ogden, "Composition of Environmental Tobacco Smoke (ETS) from International Cigarettes Part II: Nine Country Follow-Up," Environment International 24 (1998) 251-257.
55. Smith, C.J. and M.W. Ogden, "Tobacco Smoke and Atherosclerosis Progression," Journal of the American Medical Association 280 (1998) 32-33.
56. Ogden, M.W. and J.D. Richardson, "Effect of Lighting and Storage Conditions on the Stability of Ultraviolet Particulate Matter, Fluorescent Particulate Matter, and Solanesol," Tobacco Science 42 (1998) 10-15.
57. Ogden, M.W., "Reference Guide for GC/MS," Analytical Chemistry 71 (1999) 480A-481A. (Book review invited by the Editors.)
58. Ogden, M.W. and R.A. Jenkins, "Nicotine in Environmental Tobacco Smoke," Analytical Determination of Nicotine and Related Compounds and their Metabolites, J.W. Gorrod and P. Jacob III (Eds.), Elsevier, Amsterdam (1999) 531-581. (Contribution invited by the Editors.)
59. Maiolo, K.C., J.C. Walker, and M.W. Ogden, "Method for Calibrating Olfactometer Output Part 2. Amyl Acetate," Analyst 25 (2000) 1295-1298.
60. Ogden, M.W., "The Origin of a Nicotine Detection Method," AIHAJ 62 (2001) 665-666.
61. Ogden, M.W., "How Much Tobacco Smoke in the Air?," ISO Bulletin 33 (2002) 15-18.
62. Symposium of the 2002 CORESTA Congress, "Cigarette Risk and the Potential for Risk Reduction," M.W. Ogden, L.A. Crumpler, T.M. Lyalls, and B.W. Smeeton (Eds.), CORESTA Congress, New Orleans, Louisiana (2002). Available from R&D Library, R.J. Reynolds Tobacco Company, Bowman Gray Technical Center, Winston-Salem, North Carolina, 27102, USA.

63. Byrd, G.D. and M.W. Ogden, "Liquid Chromatographic/Tandem Mass Spectrometric Method for the Determination of the Tobacco-Specific Nitrosamine Metabolite NNAL in Smokers' Urine," Journal of Mass Spectrometry 38 (2003) 98-107.
64. Smith, C.J., M.J. Morton, B.G. Brown, D.W. Bombick, D.L. Heavner, M.W. Ogden, J.H. Robinson, and D.J. Doolittle, "Individual Variations in Cigarette Mainstream Smoke Biomarkers of Exposure," The Toxicologist 78 (2004) 256.
65. Baker, R.R., M. Dixon, D.C. Mariner, C.J. Shepperd, G. Scherer, M.W. Ogden, J.H. Robinson, N.M. Sinclair, N. Sherwood, Y. Akiyama, K. Sakamoto, W. Roper, A.R. Tricker, V. Marchand, and B. Varignon, "Terms Used for Exposure to Smoke," Beiträge zur Tabakforschung International 21 (2004) 250.
66. Byrd, G.D., R.A. Davis, and M.W. Ogden, "A Rapid LC-MS/MS Method for the Determination of Nicotine and Cotinine in Serum and Saliva Samples from Smokers: Validation and Comparison with an RIA Method," Journal of Chromatographic Science 43 (3) (2005) 133-140.
67. Heavner, D.L., J.D. Richardson, W.T. Morgan, and M.W. Ogden, "Validation and Application of a Method for the Determination of Nicotine and Five Major Metabolites in Smokers' Urine by Solid Phase Extraction and Liquid Chromatography-Tandem Mass Spectrometry," Biomedical Chromatography 19 (2005) 312-328.
68. Fields, W.R., R.M. Leonard, P.S. Odom, B.K. Nordskog, M.W. Ogden, and D.J. Doolittle, "Gene Expression in Normal Human Bronchial Epithelial (NHBE) Cells Following In Vitro Exposure to Cigarette Smoke Condensate," Toxicological Sciences 86 (2005) 84-91.
69. St. Charles, F.K., A.A. Kabbani, and M.W. Ogden, "Smoking Behavior: How Close to the Tipping Do Consumers Actually Smoke?," Beiträge zur Tabakforschung International 21 (2005) 435-440.
70. Heavner, D.L., W.T. Morgan, S.B. Sears, J.D. Richardson, G.D. Byrd, and M.W. Ogden, "Effect of Creatinine and Specific Gravity Normalization Techniques on Xenobiotic Biomarkers in Smokers' Spot and 24-Hour Urines," Journal of Pharmaceutical and Biomedical Analysis 40 (4) (2006) 928-942.
71. Yan, W., G.D. Byrd, and M.W. Ogden, "Quantitation of Isoprostane Isomers in Human Urine from Smokers and Nonsmokers by LC-MS/MS," Journal of Lipid Research 48 (2007) 1607-1617.
72. Ogden, M., "Establishing an FDA List of Harmful and Potentially Harmful Tobacco Product Constituents," Update 3 (2011) 10-15.
73. Bodnar, J.A., W.T. Morgan, P.A. Murphy, and M.W. Ogden, "Mainstream Smoke Chemistry Analysis of Samples from the 2009 US Cigarette Market," Regulatory Toxicology and Pharmacology 64 (1) (2012) 35-42.
74. Curtin, G.M., S.I. Sulsky, C. Van Landingham, K.M. Marano, M.J. Graves, M.W. Ogden, and J.E. Swauger, "Primary Measures of Dependence among Menthol Compared to Non-menthol Cigarette Smokers in the United States," Regulatory Toxicology and Pharmacology 69 (3) (2014) 451-466.
75. Curtin, G.M., S.I. Sulsky, C. Van Landingham, K.M. Marano, M.J. Graves, M.W. Ogden, and J.E. Swauger, "Patterns of Menthol Cigarette Use among Current Smokers, Overall and within Demographic Strata, Based on Data from Four U.S. Government Surveys," Regulatory Toxicology and Pharmacology 70 (1) (2014) 189-196.
76. Sulsky, S.I., W.G. Fuller, C. Van Landingham, M.W. Ogden, J.E. Swauger, and G.M. Curtin, "Evaluating the Association between Menthol Cigarette Use and the Likelihood of Being a Former Versus Current Smoker," Regulatory Toxicology and Pharmacology 70 (1) (2014) 231-241. [Corrigendum in: Regulatory Toxicology and Pharmacology 73 (1) (2015) 114-115.]
77. Curtin, G.M., S.I. Sulsky, C. Van Landingham, K.M. Marano, M.J. Graves, M.W. Ogden, and J.E. Swauger, "Measures of Initiation and Progression to Increased Smoking among Current Menthol Compared to Non-menthol Cigarette Smokers Based on Data from Four U.S. Government Surveys," Regulatory Toxicology and Pharmacology 70 (2) (2014) 446-456.

78. Ogden, M.W., K.M. Marano, B.A. Jones, and M.F. Stiles, "Switching from Usual Brand Cigarettes to a Tobacco-heating Cigarette or Snus: Part 1. Study Design and Methodology," Biomarkers 20 (6-7) (2015) 382-390.
79. Ogden, M.W., K.M. Marano, B.A. Jones, W.T. Morgan, and M.F. Stiles, "Switching from Usual Brand Cigarettes to a Tobacco-heating Cigarette or Snus: Part 2. Biomarkers of Exposure," Biomarkers 20 (6-7) (2015) 391-403.
80. Ogden, M.W., K.M. Marano, B.A. Jones, W.T. Morgan, and M.F. Stiles, "Switching from Usual Brand Cigarettes to a Tobacco-heating Cigarette or Snus: Part 3. Biomarkers of Biological Effect," Biomarkers 20 (6-7) (2015) 404-410.
81. Ogden, M.W. and S.N. Hanna, "Historical, Current, and Future Perspectives of Harm Reduction in the Tobacco Industry," Recent Advances in Tobacco Science Volume 41, "The Scientific Basis of Harm Reduction and the Risk Continuum," I. Fearon, B. Nordskog, and C. Tatum (Eds.), Tobacco Science Research Conference, Naples, Florida (2015) 3-49. Available from: North Carolina State University, University Communication – Customer Service, Raleigh, North Carolina, 27695, USA.

## **B. Official Methods**

1. "Determination of Nicotine in Indoor Air Using XAD-4 Sorbent Tubes," Method IP-2A, in Compendium of Methods for the Determination of Air Pollutants in Indoor Air, W. Winberry *et al.* (Eds.), United States Environmental Protection Agency, Research Triangle Park, NC (1989).
2. "Nicotine in Environmental Tobacco Smoke: Gas Chromatographic Method (First Action 1990)," Method 990.01, in Official Methods of Analysis, K. Helrich (Ed.), Association of Official Analytical Chemists, Arlington, VA (1990).
3. "Determination of Nicotine in Environmental Tobacco Smoke by Gas Chromatographic Analysis," CORESTA Recommended Method No. 14, in CORESTA Information Bulletin, CORESTA, Paris (1990) 5-8.
4. "Standard Test Method for Nicotine in Indoor Air," Method D 5075-90, American Society for Testing and Materials, W. Conshohocken, PA (1990).
5. "Nicotine in Environmental Tobacco Smoke: Gas Chromatographic Method—Alternative Conditions," Method 991.50, in Official Methods of Analysis, K. Helrich (Ed.), AOAC International, Arlington, VA (1991).
6. "Standard Test Method for Nicotine and 3-Ethenylpyridine in Indoor Air," Method D 5075-96, American Society for Testing and Materials, W. Conshohocken, PA (1996).
7. "Standard Test Methods for Estimating the Contribution of Environmental Tobacco Smoke to Respirable Suspended Particles Based on UVP and FPM," Method D 5955-96, American Society for Testing and Materials, W. Conshohocken, PA (1996).
8. "Determination of Vapour-Phase Nicotine in Air - Gas Chromatographic Method," ISO 11454, International Organization for Standardization, Geneva (1997).
9. "Standard Test Method for Estimating Contribution of Environmental Tobacco Smoke to Respirable Suspended Particles Based on Solanesol," Method D 6271-98, American Society for Testing and Materials, W. Conshohocken, PA (1998).
10. "Environmental Tobacco Smoke – Estimation of its Contribution to Respirable Suspended Particles – Determination of Particulate Matter by Ultraviolet Absorbance and by Fluorescence," ISO 15593:2001, International Organization for Standardization, Geneva (2001).
11. "Environmental Tobacco Smoke – Determination of Nicotine and 3-Ethenylpyridine in the Vapour Phase," CORESTA Recommended Method No. 50, CORESTA, Paris (2001).
12. "Environmental Tobacco Smoke – Estimation of its Contribution to Respirable Suspended Particles – Determination of Particulate Matter by Ultraviolet Absorbance and by Fluorescence," CORESTA Recommended Method No. 51, CORESTA, Paris (2001).



13. "Environmental Tobacco Smoke – Determination of Respirable Suspended Particles Based on Solanesol," CORESTA Recommended Method No. 52, CORESTA, Paris (2001).
14. "Standard Test Method for Nicotine and 3-Ethenylpyridine in Indoor Air," Method D 5075-01, American Society for Testing and Materials, W. Conshohocken, PA (2001).
15. "Standard Test Methods for Estimating the Contribution of Environmental Tobacco Smoke to Respirable Suspended Particles Based on UVPM and FPM," Method D 5955-02, American Society for Testing and Materials, W. Conshohocken, PA (2002).
16. "Environmental Tobacco Smoke – Estimation of its Contribution to Respirable Suspended Particles – Method Based on Solanesol," ISO 18144:2003, International Organization for Standardization, Geneva (2003).
17. "Environmental Tobacco Smoke – Determination of Vapour Phase Nicotine and 3-Ethenylpyridine in Air – Gas-Chromatographic Method," ISO 18145:2003, International Organization for Standardization, Geneva (2003).
18. "Standard Test Method for Estimating Contribution of Environmental Tobacco Smoke to Respirable Suspended Particles Based on Solanesol," Method D 6271-04, American Society for Testing and Materials, W. Conshohocken, PA (2004).

### **C. Patents**

1. Ogden, M.W. and D.L. Heavner, U.S. Patent 5,551,311, "Air Sampling System and Flow Calibration System for Same," September 3, 1996.
2. Ogden, M.W. and D.L. Heavner, U.S. Patent 5,646,357, "Air Sampling System and Flow Calibration System for Same," July 8, 1997.
3. Ogden, M.W. and D.W. Bombick, U.S. Patent Application US 2004/0225450 A1, "Analysis of Substrates Exposed to Tobacco and Components Derived from Tobacco," filed May 9, 2003, published November 11, 2004.

### **D. Oral & Poster Presentations, Invited Lectures & Seminars, Panel Discussant – Etc.**

1. Ogden, M.W. and H.M. McNair, "Evaluation of Secondary Cooling in Cold On-Column Injection," 1983 Pittsburgh Conference & Exposition, Atlantic City, New Jersey, March, 1983.
2. Ogden, M.W. and H.M. McNair, "Sample Preparation by Solid Phase Extraction (SPE)," 36<sup>th</sup> Southeast Regional Meeting of the American Chemical Society, Raleigh, North Carolina, October, 1984.
3. Ogden, M.W. and H.M. McNair, "Comparison of Injection Reproducibility for Open-Tubular and Packed Column Gas Chromatography," 36<sup>th</sup> Southeast Regional Meeting of the American Chemical Society, Raleigh, North Carolina, October, 1984.
4. Ogden, M.W. and H.M. McNair, "Advances in Fused Silica Capillary Column Preparation," 1985 Pittsburgh Conference & Exposition, New Orleans, Louisiana, February, 1985.
5. Ogden, M.W. and H.M. McNair, "Synthesis of Siloxane Stationary Phases for Capillary Chromatography," Sixth International Symposium on Capillary Chromatography, Riva del Garda, Italy, May, 1985.
6. \*Ogden, M.W., American Chemical Society Short Course *Gas Chromatography*, September, 1986.
7. \*Ogden, M.W. K.A. Turner, and H.M. McNair, "Preparation of Fused Silica Capillary Columns for Gas Chromatography Using Hydroxyl-Terminated Polysiloxane Stationary Phases," 38<sup>th</sup> Southeast

---

\* Invited contribution/participation.

- Regional Meeting of The American Chemical Society, Louisville, Kentucky, September, 1986. (Paper was an invited contribution to a symposium entitled *Capillary Gas Chromatography Techniques*.)
8. Ogden, M.W., L.W. Eudy, D.L. Heavner, F.W. Conrad, and C.R. Green, "Improved Gas Chromatographic Quantitation of Trace Levels of Environmental Nicotine," 40<sup>th</sup> Tobacco Chemists' Research Conference, Knoxville, Tennessee, October, 1986.
  9. \*Ogden, M.W., "SFC and Capillary GC," Graduate course *CHEM 5050 – Industrial Instrumental Analysis*, Department of Chemistry, Virginia Tech, Blacksburg, Virginia, Fall Quarter, 1987.
  10. Ogden, M.W. and J.M. Conner, "Methods of Analysis for Nicotine, Respirable Suspended Particles (RSP), and Ultraviolet Particulate Matter (UV-PM) in Environmental Tobacco Smoke (ETS): Collaborative Study," 101<sup>st</sup> Annual International Meeting of The Association of Official Analytical Chemists, San Francisco, California, September, 1987.
  11. McConnell, B.C., P.F. Perfetti, R.F. Walsh, G.B. Oldaker, F.W. Conrad, D.L. Heavner, J.M. Conner, B.J. Ingebretsen, L.W. Eudy, M.W. Ogden, and M.W. Stancill, "Development and Evaluation of Portable Air Sampling System (PASS) for Environmental Tobacco Smoke (ETS)," 41<sup>st</sup> Tobacco Chemists' Research Conference, Greensboro, North Carolina, October, 1987.
  12. Ogden, M.W. and J.M. Conner, "Methods of Analysis for Nicotine, Respirable Suspended Particles (RSP), and Ultraviolet Particulate Matter (UV-PM) in Environmental Tobacco Smoke (ETS): Collaborative Study," 41<sup>st</sup> Tobacco Chemists' Research Conference, Greensboro, North Carolina, October, 1987.
  13. Oldaker, G.B., J.M. Conner, F.C. Conrad, B.C. McConnell, M.W. Ogden, P.F. Perfetti, and M.W. Stancill, "Results from Survey of Environmental Tobacco Smoke (ETS) in Offices and Restaurants in New York City," 41<sup>st</sup> Tobacco Chemists' Research Conference, Greensboro, North Carolina, October, 1987.
  14. Ogden, M.W. and K.C. Maiolo, "Collection and Analysis of Solanesol as a Tracer of Environmental Tobacco Smoke," Indoor and Ambient Air Quality Conference, London, England, June, 1988.
  15. \*Ogden, M.W., American Chemical Society Short Course *Gas Chromatography*, September, 1988.
  16. \*Ogden, M.W., "Fundamentals of Supercritical Fluid Chromatography," *Highlands in Chemistry Seminar Series*, Department of Chemistry, Virginia Tech, Blacksburg, Virginia, September, 1988.
  17. Ogden, M.W. and K.C. Maiolo, "Collection and Determination of Solanesol as a Tracer of Environmental Tobacco Smoke in Indoor Air," 42<sup>nd</sup> Tobacco Chemists' Research Conference, Lexington, Kentucky, October, 1988.
  18. Ogden, M.W., C.W. Nystrom, G.B. Oldaker III, and F.W. Conrad, Jr., "Evaluation of a Personal Passive Sampling Device for Determining Exposure to Nicotine in Environmental Tobacco Smoke," 1989 EPA/AWMA International Symposium on Measurement of Toxic and Related Air Pollutants, Raleigh, North Carolina, May, 1989.
  19. Ogden, M.W., "Use of Capillary Chromatography in the Analysis of Environmental Tobacco Smoke," 198<sup>th</sup> National American Chemical Society Meeting (invited contribution), Miami Beach, Florida, September, 1989.
  20. Ogden, M.W., K.C. Maiolo, and G.B. Oldaker, "Evaluation of Methods for Estimating the Contribution of ETS to Respirable Suspended Particles," 43<sup>rd</sup> Tobacco Chemists' Research Conference, Richmond, Virginia, October, 1989.
  21. Oldaker, G.B., M.W. Ogden, K.C. Maiolo, J.M. Conner, F.W. Conrad, and T.C. DeLuca, "Results from Surveys of Environmental Tobacco Smoke in Restaurants in Winston-Salem, North Carolina," 43<sup>rd</sup> Tobacco Chemists' Research Conference, Richmond, Virginia, October, 1989.
  22. Nelson, P.R., M.W. Ogden, D.L. Heavner, K.C. Maiolo, B.B. Collie, and G.B. Oldaker, "Problems with the Use of Nicotine as a Predictive Environmental Tobacco Smoke Marker," EPA/AWMA Symposium on Toxic and Related Air Pollutants, Raleigh, North Carolina, April/May, 1990.

23. Nelson, P.R. and M.W. Ogden, "Measurement of Ethenylpyridine in Environmental Tobacco Smoke," 38<sup>th</sup> Annual Conference on Mass Spectrometry and Allied Topics, Tucson, Arizona, June, 1990.
24. Ogden, M.W., K.C. Maiolo, and G.B. Oldaker, "Evaluation of Methods for Estimating the Contribution of ETS to Respirable Suspended Particles," INDOOR AIR '90: The 5<sup>th</sup> International Conference on Indoor Air Quality and Climate, Toronto, Canada, July/August, 1990.
25. Nelson, P.R., D.L. Heavner, M.W. Ogden, K.C. Maiolo, and B.B. Collie, "Predictive Value of Nicotine as an Environmental Tobacco Smoke Marker," INDOOR AIR '90: The 5<sup>th</sup> International Conference on Indoor Air Quality and Climate, Toronto, Canada, July/August, 1990.
26. Ogden, M.W., "Equivalency of Gas Chromatographic Conditions in Determination of Nicotine in Environmental Tobacco Smoke: Minicollaborative Study," 104<sup>th</sup> Annual International Meeting of the Association of Official Analytical Chemists, New Orleans, Louisiana, September, 1990.
27. Ogden, M.W. and K.C. Maiolo, "Comparison of GC and LC for Determining Solanesol in Environmental Tobacco Smoke," 44<sup>th</sup> Tobacco Chemists' Research Conference, Winston-Salem, North Carolina, October, 1990.
28. Burleigh-Flayer, H.D., D.E. Dodd, J.C. Walker, R.A. Jennings, A.T. Mosberg, and M.W. Ogden, "The Respiratory Effects of N-Amyl and N-Butyl Acetates in Mice," Society of Toxicology, Dallas, Texas, February, 1991.
29. Chung, H.L., J.C. Aldrich, and M.W. Ogden, "Thermal Study of Solanesol by On-Line TG/GC/MS," 39<sup>th</sup> ASMS Conference on Mass Spectrometry, Nashville, Tennessee, May, 1991.
30. Ogden, M.W. and K.C. Maiolo, "A Passive Sampling Device for Determining Nicotine and 3-Vinylpyridine in Environmental Tobacco Smoke," CORESTA Joint Meeting of Smoke & Technology Groups, Utrecht, Holland, September, 1991.
31. Ogden, M.W. and K.C. Maiolo, "A Passive Sampling Device for Determining Nicotine and 3-Vinylpyridine in Environmental Tobacco Smoke," 45<sup>th</sup> Tobacco Chemists' Research Conference, Asheville, North Carolina, October, 1991.
32. Coggins, C.R.E., P.H. Ayres, A.T. Mosberg, M.W. Ogden, D.J. Doolittle, C.K. Lee, J.W. Sagartz, and A.W. Hayes, "14-Day Inhalation Study in Rats Using Aged and Diluted Sidestream Smoke from a Reference Cigarette," Society of Toxicology, Seattle, Washington, February, 1992.
33. \*Ogden, M.W., "Research Highlights," *The Philip Morris U.S.A. Award for Distinguished Achievement in Tobacco Science* award address, 46<sup>th</sup> Tobacco Chemists' Research Conference, Montreal, Canada, September, 1992.
34. Ogden, M.W., K.C. Maiolo, P.R. Nelson, D.L. Heavner, and C.R. Green, "Artifacts in Determining the Vapor-Particulate Phase Distribution of Environmental Tobacco Smoke Nicotine," 46<sup>th</sup> Tobacco Chemists' Research Conference, Montreal, Canada, September, 1992.
35. Ogden, M.W., R.A. Davis, K.C. Maiolo, M.F. Stiles, D.L. Heavner, R.B. Hege, and W.T. Morgan, "Multiple Measures of Personal ETS Exposure in a Population-Based Survey of Nonsmoking Women in Columbus, Ohio," 47<sup>th</sup> Tobacco Chemists' Research Conference, Gatlinburg, Tennessee, October, 1993.
36. \*Ogden, M.W., "Spectrometric Methods for Estimating the Contribution of Environmental Tobacco Smoke to Airborne Particulate Levels," *Particulate Contaminant Measurement Techniques* seminar sponsored by Committee TC2.4 (Particulate Air Contaminants and Particulate Contaminant Control Equipment) of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE), ASHRAE Winter Meeting, New Orleans, Louisiana, January, 1994.
37. Coggins, C.R.E., P.H. Ayres, A.T. Mosberg, and M.W. Ogden, "Aerosol Characterization in a Sub-Chronic Inhalation Study in Rats Using Aged and Diluted Sidestream Smoke from a Reference Cigarette," 4<sup>th</sup> International Aerosol Conference, Los Angeles, California, September, 1994.

38. Ogden, M.W., D.L. Heavner, R.A. Davis, M.F. Stiles, R.B. Hege, and W.T. Morgan, "National Incidence of Smoking and Misclassification among the U.S. Married Female Population," 48<sup>th</sup> Tobacco Chemists' Research Conference, Greensboro, North Carolina, October, 1994.
39. \*Ogden, M.W., "Environmental Tobacco Smoke in Perspective," X<sup>th</sup> Anniversary International Conference *Chemistry for the Protection of the Environment*, Technical University of Lublin, Lublin, Poland, September, 1995.
40. Nelson, P.R., F.W. Conrad, S.P. Kelly, C.H. Risner, D.L. Heavner, and M.W. Ogden, "A Method for the Comparative Evaluation of ETS Generated by Different Cigarettes and Its Application to a New Cigarette that Primarily Heats Tobacco," 49<sup>th</sup> Tobacco Chemists' Research Conference, Lexington, Kentucky, September, 1995.
41. Ogden, M.W., R.J. Fix, and J.W. Thompson, "Robotic System for Microgram-Level Filter Weighing," 49<sup>th</sup> Tobacco Chemists' Research Conference, Lexington, Kentucky, September, 1995.
42. Nelson, P.R., F.W. Conrad, S.P. Kelly, D.L. Heavner, M.W. Ogden, and C.H. Risner, "Comparison of the Environmental Tobacco Smoke from a Cigarette that Primarily Heats Tobacco and Cigarettes that Burn Tobacco," AARC Annual Meeting, Pittsburgh, Pennsylvania, October, 1995.
43. Ogden, M.W. and J.D. Richardson, "The Effect of Lighting and Storage Conditions on the Stability of UVPM, FPM, and Solanesol," 50<sup>th</sup> Tobacco Chemists' Research Conference, Richmond, Virginia, October, 1996.
44. Ogden, M.W., "Environmental Tobacco Smoke: Perspective and Measurement," PITTCON '97: The Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, Atlanta, Georgia, March, 1997.
45. Nelson, P.R., F.W. Conrad, S.P. Kelly, K.C. Maiolo, J.D. Richardson, and M.W. Ogden, "Environmental Tobacco Smoke Particle Markers: An International Cigarette Study," CORESTA Joint Meeting of the Smoke and Technology Groups, Hamburg, Germany, September, 1997.
46. Nelson, P.R., F.W. Conrad, S.P. Kelly, K.C. Maiolo, J.D. Richardson, and M.W. Ogden, "Ratios of Particulate Markers to ETS RSP from International Cigarettes," 51<sup>st</sup> Tobacco Chemists' Research Conference, Winston-Salem, North Carolina, September 1997.
47. Nelson, P.R., F.W. Conrad, S.P. Kelly, K.C. Maiolo, J.D. Richardson, and M.W. Ogden "Particulate Markers for Environmental Tobacco Smoke: An International Cigarette Study," 15<sup>th</sup> American Association for Aerosol Research Conference, Denver, Colorado, October, 1997.
48. Haque, A., D.L. Heavner, R.A. Davis, J.D. Richardson, K. Twiford, and M.W. Ogden, "LC/MS/MS Method for Determining NNAL in Smokers' Urine," 53<sup>rd</sup> Tobacco Science Research Conference, Montreal, Quebec, Canada, September, 1999.
49. Ogden, M.W. and R.A. Jenkins, "Nicotine in Environmental Tobacco Smoke – I: Uniqueness, Measurement, and Emission Rates," 53<sup>rd</sup> Tobacco Science Research Conference, Montreal, Quebec, Canada, September, 1999.
50. Jenkins, R.A. and M.W. Ogden, "Nicotine in Environmental Tobacco Smoke – II: Stability, Ratios, and Exposure Levels," 53<sup>rd</sup> Tobacco Science Research Conference, Montreal, Quebec, Canada, September, 1999.
51. Haque, A., D.L. Heavner, R.A. Davis, J.D. Richardson, K. Twiford, and M.W. Ogden, "LC/MS/MS Method for Determining NNAL in Smokers' Urine," CORESTA Joint Meeting of the Smoke and Technology Groups, Innsbruck, Austria, September, 1999.
52. Davis, R.A. and M.W. Ogden, "Can Cotinine Predict Nicotine or Environmental Tobacco Smoke Exposure in Nonsmokers?," 54<sup>th</sup> Tobacco Science Research Conference, Nashville, Tennessee, September, 2000.
53. Ogden, M.W., "Methods of Analysis for Nicotine, 3-Ethenylpyridine, Respirable Suspended Particles (RSP), Ultraviolet Particulate Matter (UVPM), Fluorescent Particulate Matter (FPM), and Solanesol: Collaborative Study," 114<sup>th</sup> AOAC Annual Meeting and Exposition, Philadelphia, Pennsylvania, September, 2000.

54. Ogden, M.W., "Environmental Tobacco Smoke (ETS) Collaborative Study: Methods of Analysis for Nicotine, 3-Ethenylpyridine, Respirable Suspended Particles (RSP), Ultraviolet Particulate Matter (UVP), Fluorescent Particulate Matter (FPM), and Solanesol," 54<sup>th</sup> Tobacco Science Research Conference, Nashville, Tennessee, September, 2000.
55. Ogden, M.W., "Environmental Tobacco Smoke (ETS) Collaborative Study: Methods of Analysis for Nicotine, 3-Ethenylpyridine, Respirable Suspended Particles (RSP), Ultraviolet Particulate Matter (UVP), Fluorescent Particulate Matter (FPM), and Solanesol," CORESTA Congress, Lisbon, Portugal, October, 2000.
56. \*Ogden, M.W., "Environmental Tobacco Smoke - Measurement and Perspective," *CORESTA Prize* award address, CORESTA Congress, New Orleans, Louisiana, September, 2002.
57. Brown, B.G., D.L. Heavner, D.W. Bombick, J.D. Richardson, R.A. Davis, G.D. Byrd, V. Connell, M.W. Morton, and M.W. Ogden, "Biomarkers of Tobacco Smoke Exposure: Comparison between Smokers and Nonsmokers," CORESTA Congress, New Orleans, Louisiana, September 2002.
58. Craver-Gladstone, K., G.D. Byrd, and M.W. Ogden, "GC/MS Analytical Method for Airborne Nicotine, 3-Ethenylpyridine, and Myosmine," CORESTA Congress, New Orleans, Louisiana, September, 2002.
59. Byrd, G.D., D.L. Heavner, and M.W. Ogden, "Determination of NNAL in Smokers' Urine Using LC-MS/MS," 56<sup>th</sup> Tobacco Science Research Conference, Lexington, Kentucky, September, 2002.
60. Bombick, D.W., D.J. Doolittle, and M.W. Ogden, "Carbonyl Protein Adducts as a Biomarker of Cigarette Smoke Exposure in Mammalian Cells and Humans," Annual Society of Toxicology Meeting, Salt Lake City, Utah, March, 2003.
61. Fields, W.F., R.M. Leonard, P.S. Mitchell, D.J. Doolittle, and M.W. Ogden, "Differential Regulation of Gene Expression Change and Cell Cycle in Normal Human Bronchial Epithelial (NHBE) Cells Following Exposure to Smoke Condensate from Cigarettes that Burn or Primarily Heat Tobacco," 94<sup>th</sup> Annual Meeting of the American Association of Cancer Research, Washington, D.C., July, 2003.
62. Smith, C.J., M.J. Morton, B.G. Brown, D.W. Bombick, D.L. Heavner, M.W. Ogden, J.H. Robinson, and D.J. Doolittle, "Individual Variations in Cigarette Mainstream Smoke Biomarkers of Exposure," Annual Society of Toxicology Meeting, Baltimore, Maryland, March, 2004.
63. Fields, W.F., B.K. Nordskog, R.M. Leonard, P.S. Odom, M.A. Higuchi, G.M. Hellmann, and M.W. Ogden, "Gene Expression Profiles in Normal Human Bronchial Epithelial (NHBE) Cells Following Cigarette Smoke Exposure," 95<sup>th</sup> Annual Meeting of the American Association of Cancer Research, Orlando, Florida, April, 2004.
64. Brown, B., G.D. Byrd, M.W. Ogden, and P. Ayres, "Determination of NNAL, a Metabolite of NNK, in the Rat After Exposure to Mainstream Cigarette Smoke Using an LC-MS/MS Method," 58<sup>th</sup> Tobacco Science Research Conference, Winston-Salem, North Carolina, September, 2004.
65. Heavner, D.L., J.D. Richardson, W.T. Morgan, and M.W. Ogden, "A Method for the Determination of Nicotine and Five Major Metabolites in Smoker's Urine by Solid Phase Extraction and Liquid Chromatography-Tandem Mass Spectrometry," 58<sup>th</sup> Tobacco Science Research Conference, Winston-Salem, North Carolina, September, 2004.
66. Byrd, G.D., D.L. Heavner, W.T. Morgan, M.W. Ogden, J.H. Robinson, and M.F. Stiles, "Nicotine Biomarkers in the Multiple Measures of Variability Study," 58<sup>th</sup> Tobacco Science Research Conference, Winston-Salem, North Carolina, September, 2004.
67. Byrd, G.D., D.L. Heavner, W.T. Morgan, M.W. Ogden, J.H. Robinson, and M.F. Stiles, "NNAL Excretion in the Multiple Measures of Variability Study," 58<sup>th</sup> Tobacco Science Research Conference, Winston-Salem, North Carolina, September, 2004.
68. Ogden, M.W., "Investigations of Variation in Urinary Profiles between Smokers and Non-smokers using Metabonomic (NMR Spectroscopic) Urinalysis," 58<sup>th</sup> Tobacco Science Research Conference, Winston-Salem, North Carolina, September, 2004.

69. Fields, W.F., M.W. Ogden, and D.J. Doolittle, "Gene Expression in Bronchial Epithelial Cells Following In Vitro Exposure to Cigarette Smoke Condensate," 58<sup>th</sup> Tobacco Science Research Conference, Winston-Salem, North Carolina, September, 2004.
70. Doolittle, D.J., C.J. Smith, M.J. Morton, D.W. Bombick, B.G. Brown, D.L. Heavner, W.T. Morgan, M.W. Ogden, and J.H. Robinson, "Individual Variations in Cigarette Mainstream Smoke Biomarkers of Exposure," CORESTA Congress, Kyoto, Japan, October, 2004.
71. Robinson, J.H., M.W. Ogden, M.F. Borgerding, G.D. Byrd, D.L. Heavner, W.T. Morgan, and M.F. Stiles, "Multiple Measures of Variability (Part 1): Experimental Design and Human Smoking Behavior Endpoints," CORESTA Congress, Kyoto, Japan, October, 2004.
72. Borgerding, M.F., J.A. Bodnar, T.J. Collins, W.T. Morgan, S.M. DeBusk, J.H. Robinson, D.L. Heavner, and M.W. Ogden, "Multiple Measures of Variability (Part 2): A Study of Smoker Yields Based on Cigarette Filter Analysis after Smoking," CORESTA Congress, Kyoto, Japan, October, 2004.
73. Ogden, M.W., D.L. Heavner, W.T. Morgan, G.D. Byrd, J.H. Robinson, and M.F. Borgerding, "Multiple Measures of Variability (Part 3): Biomarkers of Smoke Exposure," CORESTA Congress, Kyoto, Japan, October, 2004.
74. Doolittle, D.J., W.R. Fields, and M.W. Ogden, "Gene Expression in Normal Human Epithelial (NHBE) Cells Following In Vitro Exposure to Cigarette Smoke Condensate," CORESTA Congress, Kyoto, Japan, October, 2004.
75. Ogden, M.W., "Investigations of Variation in Urinary Profiles between Smokers and Non-smokers using Metabonomic (NMR Spectroscopic) Urinalysis," CORESTA Congress, Kyoto, Japan, October, 2004.
76. Ogden, M., "Investigations of Variation in Urinary Profiles between Smokers and Non-Smokers Using Metabonomic (NMR Spectroscopic) Urinalysis," Society of Toxicology Annual Meeting, New Orleans, Louisiana, March, 2005.
77. Byrd, G.D., D.L. Heavner, W.T. Morgan, J.H. Robinson, M.F. Stiles, and M.W. Ogden, "NNAL Excretion in a Multiple Measures of Variability Study of Smokers," 53<sup>rd</sup> ASMS Conference on Mass Spectrometry, San Antonio, Texas, June, 2005.
78. Byrd, G.D. and M.W. Ogden, "Development of an LC-MS/MS Method for Determination of Solanesol in Cigarette Butts," 59<sup>th</sup> Tobacco Science Research Conference, Atlanta, Georgia, September, 2005.
79. Heavner, D.L., W.T. Morgan, S.B. Sears, J.D. Richardson, G.D. Byrd, and M.W. Ogden, "Effect of Creatinine and Specific Gravity Normalization Techniques on Biomarkers in Smokers' Spot and 24-Hour Urines," 59<sup>th</sup> Tobacco Science Research Conference, Atlanta, Georgia, September, 2005.
80. \*Ogden, M.W. *et al.*, "Biomarkers of Tobacco Smoke Exposure: Comparison between Smokers and Nonsmokers," Life Science Research Office, Bethesda, Maryland, September, 2005.
81. \*Ogden, M.W. *et al.*, "Multiple Measures of Variability (Part 3): Biomarkers of Smoke Exposure," Life Science Research Office, Bethesda, Maryland, September, 2005.
82. \*Ogden, M.W. *et al.*, "Effect of Creatinine and Specific Gravity Normalization Techniques on Biomarkers in Smokers' Spot and 24-Hour Urines," Life Science Research Office, Bethesda, Maryland, September, 2005.
83. Heavner, D.L., W.T. Morgan, S.B. Sears, J.D. Richardson, G.D. Byrd, and M.W. Ogden, "Effect of Creatinine and Specific Gravity Normalization Techniques on Biomarkers in Smokers' Spot and 24-Hour Urines," CORESTA SS/PT Meeting, Stratford-upon-Avon, England, September, 2005.
84. Yan, W., G.D. Byrd, and M.W. Ogden, "Determination of Isoprostanes in Urine from Smokers and Nonsmokers by Liquid Chromatography Tandem Mass Spectrometry," 54<sup>th</sup> ASMS Conference on Mass Spectrometry, Seattle, Washington, May, 2006.

85. Dennis, M.U., D.L. Heavner, T.J. Steichen, and M.W. Ogden, "Smokescreen: A Rapid On-Site Test for Nicotine and Nicotine Metabolites in Urine," 60<sup>th</sup> Tobacco Science Research Conference, Montreal, Quebec, Canada, September, 2006.
86. \*Dennis, M.U., D.L. Heavner, M.W. Ogden, "Reynolds' Research on Exhaled Breath Condensate," *EBC Workshop*, London, England, May, 2007 (presented by M. Dennis).
87. Byrd, G.D. and M.W. Ogden, "A Ring Trial Test of Nicotine Uptake Determinations by Multiple Laboratories," 55<sup>th</sup> ASMS Conference on Mass Spectrometry, Indianapolis, Indiana, June, 2007.
88. Yan, W., G.D. Byrd, and M.W. Ogden, "Correlation of Several Isoprostanes with Human Smoking Behavior," 55<sup>th</sup> ASMS Conference on Mass Spectrometry, Indianapolis, Indiana, June, 2007.
89. \*Yan, W., G.D. Byrd, and M.W. Ogden, "Biomarkers of Oxidative Stress and Urinary Isoprostanes: Determination by LC-MS/MS," *EPA Seminar*, Research Triangle Park, North Carolina, June, 2007 (presented by W. Yan).
90. Byrd, G.D. and M.W. Ogden, "A Ring Trial Test of Nicotine Uptake Determinations by Multiple Laboratories," 61<sup>st</sup> Tobacco Science Research Conference, Charlotte, North Carolina, September, 2007.
91. Yan, W., G.D. Byrd, and M.W. Ogden, "Correlation of Several Isoprostanes with Human Smoking Behavior," 61<sup>st</sup> Tobacco Science Research Conference, Charlotte, North Carolina, September 2007.
92. Uhrig, M., W.M. Coleman III, and M.W. Ogden, "Stir Bar Sorptive Extraction for the Determination of Selected Carbonyl Compounds in Exhaled Breath Condensate," 61<sup>st</sup> Tobacco Science Research Conference, Charlotte, North Carolina, September, 2007.
93. Byrd, G.D. and M.W. Ogden, "A Ring Trial Test of Nicotine Uptake Determinations by Multiple Laboratories," CORESTA SS/PT Meeting, Jeju, South Korea, October, 2007.
94. Byrd, G.D. and M.W. Ogden, "A Study of In Vitro Metabolism of Minor Alkaloids in Tobacco Using HILIC H-UPLC-MS/MS," 56<sup>th</sup> ASMS Conference on Mass Spectrometry, Denver, Colorado, June, 2008.
95. Ogden, M.W., "Results from a National Yield-In-Use Survey in the USA," 3<sup>rd</sup> Meeting of ISO/TC 126/WG 10, Berlin, Germany, October, 2008.
96. Ogden, M.W., M.F. Stiles, B.A. Jones, T.J. Steichen, and W.T. Morgan, "Switching from Usual Brand Cigarettes to a Tobacco Heating Cigarette or Snus – A Multi-Center Evaluation of Biomarkers of Exposure and Harm," 2009 Joint Conference of SRNT and SRNT Europe, Dublin, Ireland, April, 2009.
97. Ogden, M.W., M.F. Stiles, B.A. Jones, T.J. Steichen, and W.T. Morgan, "Switching from Usual Brand Cigarettes to a Tobacco Heating Cigarette or Snus – A Multi-Center Evaluation of Biomarkers of Exposure and Harm," 63<sup>rd</sup> Tobacco Science Research Conference, Amelia Island, Florida, September, 2009.
98. Ogden, M.W., M.F. Stiles, B.A. Jones, T.J. Steichen, and W.T. Morgan, "Switching from Usual Brand Cigarettes to a Tobacco Heating Cigarette or Snus – A Multi-Center Evaluation of Biomarkers of Exposure and Harm," CORESTA SS/PT Meeting, Aix-en-Provence, France, October, 2009.
99. Ogden, M.W., "Scientific Evidence Related to Menthol Cigarettes," FDA TPSAC Meeting, Washington, DC, March, 2010.
100. Ogden, M.W., "Preliminary Information Concerning the Establishment of a List of Harmful and Potentially Harmful Tobacco Product Constituents," FDA TPSAC Constituents Subcommittee Meeting, Gaithersburg, Maryland, June, 2010.
101. Ogden, M.W., "Characterization of Menthol – History and Design of Menthol Cigarettes," FDA TPSAC Meeting, Gaithersburg, Maryland, July, 2010.
102. Ogden, M.W., "Clinical Effects of Menthol – Sensory and Smoking Behavior Studies," FDA TPSAC Meeting, Gaithersburg, Maryland, July, 2010.
103. Ogden, M.W., "Biomarkers," FDA TPSAC Meeting, Gaithersburg, Maryland, July, 2010.

104. Ogden, M.W., “Non-Clinical and Clinical Studies of Tobacco Products,” FDA Center for Tobacco Products, Gaithersburg, Maryland, January, 2011.
105. Ogden, M.W., “Scientific Standards for Studies on Reduced Risk Tobacco Products,” Institute of Medicine Committee on Scientific Standards for Studies on Modified Risk Tobacco Products, Washington, DC, February, 2011.
106. Ogden, M.W., “Tobacco Manufacturers Panel Discussion I – Introduction and Pre-Clinical Study Standards,” Institute of Medicine Committee on Scientific Standards for Studies on Modified Risk Tobacco Products, Washington, DC, May, 2011.
107. Ogden, M.W., “Clinical Studies of Dissolvable Tobacco Products,” FDA Center for Tobacco Products, Gaithersburg, Maryland, May, 2011.
108. \*Ogden, M.W., “GMP for Tobacco – An Industry Perspective,” Tobacco Merchants Association 96<sup>th</sup> Annual Meeting & Conference, Pre-Conference Workshop, Williamsburg, Virginia, May, 2011.
109. \*Ogden, M.W., “21-Month Review of FDA Regulation,” Tobacco Merchants Association 96<sup>th</sup> Annual Meeting & Conference, Williamsburg, Virginia, May, 2011.
110. Ogden, M.W., “Modified Risk Tobacco Products,” FDA Public Workshop, Gaithersburg, Maryland, August, 2011.
111. Ogden, M.W., “Overview of New Smokeless Reference Products: Design, Manufacturing, Storage and Tests,” FDA Tobacco Product Analysis: Scientific Public Workshop, Rockville, Maryland, April, 2012.
112. \*Ogden, M.W., “FDA Regulation,” Global Tobacco Networking Forum, Session 3, Antwerp, Belgium, June, 2012.
113. \*Ogden, M.W., “Ingredients Ban,” Global Tobacco Networking Forum, Session 16, Antwerp, Belgium, June, 2012.
114. Ogden, M.W. and J.E. Bunch, “Overview of CORESTA Smokeless Reference Products: Design, Manufacturing, Storage and Tests,” 66<sup>th</sup> Tobacco Science Research Conference, Concord, North Carolina, September, 2012.
115. Ogden, M.W. *et al.*, “Harmful and Potentially Harmful Constituents – Analysis and Considerations,” FDA Center for Tobacco Products, Rockville, Maryland, February, 2013.
116. Ogden, M.W., “Tobacco Industry-Sponsored Research,” FDA Center for Tobacco Products Public Workshop: Third Party Governance of Industry-Sponsored Tobacco Product Research, Rockville, Maryland, March, 2013.
117. Ogden, M.W., “Communicating HPHC Information: Current State of the Measurement Science,” FDA Joint Meeting of Risk Communication & Tobacco Products Scientific Advisory Committees, Gaithersburg, Maryland, August, 2013.
118. \*Ogden, M.W., “A New Era: Regulatory Science,” Global Tobacco Networking Forum, Session 1, Cape Town, South Africa, November, 2013.
119. \*Ogden, M.W., “E-cigarettes Part I: Regulation,” Global Tobacco Networking Forum, Session 5, Cape Town, South Africa, November, 2013.
120. \*Ogden, M.W., “The Expanding Scope of Tobacco Product Regulation,” Global Tobacco Networking Forum, Session 10, Cape Town, South Africa, November, 2013.
121. \*Ogden, M.W., “FDA Tobacco Regulation,” Global Tobacco Networking Forum, Keynote Address, Cape Town, South Africa, November, 2013.
122. \*Ogden, M.W., “Smokeless Products,” Global Tobacco Networking Forum, Session 13, Cape Town, South Africa, November, 2013.
123. \*Ogden, M.W., “FDA,” Global Tobacco Networking Forum, Session 17 (panel moderator), Cape Town, South Africa, November, 2013.



124. \*Ogden, M.W., “FDA vs. FCTC,” Global Tobacco Networking Forum, Session 1, Greenbrier, West Virginia, October, 2014.
125. \*Ogden, M.W., “Heat-Not-Burn,” Global Tobacco Networking Forum, Session 10, Greenbrier, West Virginia, October, 2014.
126. \*Ogden, M.W., “Toxicant Management,” Global Tobacco Networking Forum, Session 16, Greenbrier, West Virginia, October, 2014.
127. \*Ogden, M.W., *Comprehensive Nicotine Policy* (panel moderator), Global Tobacco Networking Forum, Session 21, Greenbrier, West Virginia, October, 2014.
128. \*Ogden, M.W. and S.N. Hanna, “Historical, Current, and Future Perspectives of Harm Reduction in the Tobacco Industry,” 69<sup>th</sup> Tobacco Science Research Conference, Naples, Florida, September, 2015. (Invited contribution to the symposium *The Scientific Basis of Harm Reduction and the Risk Continuum*.)
129. \*Ogden, M.W., “Science for Regulation,” Global Tobacco & Nicotine Forum, Session 16, Bologna, Italy, September, 2015.
130. \*Ogden, M.W., “Plenary Panel Discussion: *Advancing Public Health with New Products and Regulatory Frameworks*,” Global Tobacco & Nicotine Forum, Brussels, Belgium, September, 2016.
131. Ogden, M.W., “Comments on Statutory Standards Applicable to Different Types of Applications and the Scientific Basis for Review Decisions,” FDA TPSAC Meeting, Silver Spring, Maryland, April, 2017.
132. \*Ogden, M.W., “Clarity of Vision: Constructing a Better Product Authorization System (Manufacturer Perspective),” Tobacco Merchants Association 103<sup>rd</sup> Annual Meeting & Conference, Leesburg, Virginia, April, 2018.
133. Ogden, M.W., “Camel Snus MRTP Application: Introduction and Overview,” FDA TPSAC Meeting, Silver Spring, Maryland, September, 2018.
134. Ogden, M.W., “Camel Snus MRTP Application: Conclusions,” FDA TPSAC Meeting, Silver Spring, Maryland, September, 2018.
135. \*Ogden, M.W., “Finding Direction: Navigating PMTAs,” Tobacco Merchants Association Workshop, Richmond, Virginia, August, 2019.
136. \*Ogden, M.W., “Product Pathways,” Global Tobacco & Nicotine Forum, Session 6, Washington, DC, September, 2019.

## V. HONORS, AWARDS, AND MEMBERSHIPS - ETC.

- a. 1980–1981 — Member, Blue Key National Honor Fraternity
- b. 1984–present — Member, American Mensa
- c. 1984–present — Member, American Chemical Society
- d. 1984–1986 — Member, Sigma Xi National Research Society
- e. 1985 — Virginia Tech Tuition Scholarship
- f. 1985–1986 — Member, Phi Lambda Upsilon Chemical Honorary Society
- g. 1985 — Scholarship from Sixth International Symposium on Capillary Chromatography to present results of Ph.D. dissertation research, Riva del Garda, Italy
- h. 1987–present — Member, Association of Official Analytical Chemists
- i. 1987–1994 — Associate Referee for “Nicotine in Environmental Tobacco Smoke,” Association of Official Analytical Chemists (renamed AOAC International in 1994)

- j. 1988 — Session Chairman for “Analytical Methodology,” International Indoor and Ambient Air Quality Conference, London, England, June
- k. 1990–present — ISO (International Organization for Standardization) Project Leader to develop standard method for nicotine in ETS
- l. 1991 — Association of Official Analytical Chemists *Associate Referee of the Year Award* for outstanding contributions in methods validation as Associate Referee for Nicotine in Environmental Tobacco Smoke
- m. 1991–1994 — Member, Tobacco Chemists’ Research Conference Program Editorial Committee
- n. 1992 — Session Chairman, 46<sup>th</sup> Tobacco Chemists’ Research Conference, Montreal, Canada, September
- o. 1992 — *The Philip Morris U.S.A. Award for Distinguished Achievement in Tobacco Science*
- p. 1993 — Session Chairman, 47<sup>th</sup> Tobacco Chemists’ Research Conference, Gatlinburg, Tennessee, October
- q. 1994–present — Associate Referee for “Environmental Tobacco Smoke Methods,” AOAC International
- r. 1994–present — Member, American Society for Testing and Materials
- s. 1994–present — ASTM (American Society for Testing and Materials) Project Leader to develop standard method for nicotine and 3-ethenylpyridine in ETS
- t. 1994–present — ASTM (American Society for Testing and Materials) Project Leader to develop standard methods for RSP, UVPM, and FPM in ETS
- u. 1994 — Chairman, Tobacco Chemists’ Research Conference Program Editorial Committee
- v. 1994–present — ISO (International Organization for Standardization) Project Leader to develop standard methods for RSP, UVPM, and FPM in ETS
- w. 1995–2002 — Chairman, CORESTA Environmental Tobacco Smoke Sub Group
- x. 1996–present — ASTM (American Society for Testing and Materials) Project Leader to develop standard method for solanesol in ETS
- y. 1996–2004 — Editorial Board Member, *Tobacco Science*
- z. 1996–2002 — Member, CORESTA Scientific Commission, Smoke Study Group Executive
- aa. 1997 — Session Chairman, CORESTA Joint Meeting of the Smoke and Technology Groups, Hamburg, Germany, September
- bb. 1997–2017 — R.J. Reynolds Tobacco Company representative to ANSI TAG ISO-TC 126–Tobacco and Tobacco Products
- cc. 1997–2017 — Treasurer, ANSI TAG ISO-TC 126–Tobacco and Tobacco Products
- dd. 1998–present — Advisory Board Member, *Beiträge zur Tabakforschung International*
- ee. 1998 — Session Chairman, CORESTA Congress, Brighton, England, October
- ff. 1998–2000 — Member, College of Arts and Sciences Roundtable, Virginia Polytechnic Institute & State University
- gg. 1999–2001 — Member, *The Philip Morris U.S.A. Award for Distinguished Achievement in Tobacco Science* Selection Committee
- hh. 1999–present — ISO (International Organization for Standardization) Project Leader to develop standard method for nicotine and 3-ethenylpyridine in ETS
- ii. 1999–present — ISO (International Organization for Standardization) Project Leader to develop standard method for solanesol in ETS

- jj. 1999 — Session Chairman, CORESTA Joint Meeting of the Smoke and Technology Groups, Innsbruck, Austria, September
- kk. 2000 — Session Chairman, CORESTA Congress, Lisbon, Portugal, October
- ll. 2000 — CORESTA *Bronze Medal*
- mm. 2000–2002 — Smoke Study Group Secretary, CORESTA Scientific Commission
- nn. 2000–2002 — Member, CORESTA Reading Committee
- oo. 2000–2002 — Chairman, 2002 CORESTA Congress Organizing Committee
- pp. 2001 — Session Chairman, CORESTA Joint Meeting of the Smoke and Technology Groups, Xian, China, September
- qq. 2002 — Chairman, *The Philip Morris U.S.A. Award for Distinguished Achievement in Tobacco Science* Selection Committee
- rr. 2002 — Session Chairman, CORESTA Congress, New Orleans, Louisiana, September
- ss. 2002 — *CORESTA Prize* for distinguished achievement in tobacco science
- tt. 2004–present — Member, CORESTA Board
- uu. 2004 — Member, 58<sup>th</sup> Tobacco Science Research Conference Organizing Committee
- vv. 2006 — CORESTA *Silver Medal*
- ww. 2006–2008 — Vice President, CORESTA Board
- xx. 2006–2011 — Member, Department of Statistics Advisory Board, Virginia Polytechnic Institute & State University
- yy. 2008–2012 — President, CORESTA Board
- zz. 2011–present — Representative (Alternate) of the tobacco manufacturing industry (non-voting), FDA Tobacco Products Scientific Advisory Committee (TPSAC)
- aaa. 2012–2014 — Vice President, CORESTA Board
- bbb. 2014 — Tobacco Science Research Conference *Lifetime Achievement Award*
- ccc. 2014 — CORESTA *Gold Medal*
- ddd. 2014–present — Member, Global Tobacco & Nicotine Forum (GTNF) Advisory Board
- eee. 2018 — Member, 72<sup>nd</sup> Tobacco Science Research Conference Organizing Committee