

TALKS BY DR. JOHANNA M.H. LEVELT SENGERS  
National Institute of Standards and Technology  
Materials Measurement Laboratory  
Chemical Sciences Division  
Period 1967-2016

1. J.M.H. Levelt Sengers, "Thermodynamics near the critical point," May 19, 1967, University of Wisconsin. (Invited)
2. J.M.H. Levelt Sengers, "Thermodynamics near the critical point," May 22, 1967, University of Minnesota. (Invited)
3. J.M.H. Levelt Sengers, "Thermodynamic Behavior in the Vicinity of the Gas-Liquid Critical Point," Bull. Am. Phys. Soc., 12, 647, (BD10), 1967.
4. J.M.H. Levelt Sengers, "Thermodynamic anomalies near critical points," March 8, 1968, John Carroll University, Cleveland, Ohio. (Invited)
5. J.M.H. Levelt Sengers, "On the Determination of Virial Coefficients from PVT Data," April, 1, 1968, Center of Adult Education, University of Maryland, College Park, Maryland.
6. J.M.H. Levelt Sengers, "Thermodynamic Anomalies near the Critical Point of Steam," prepared for the 7th. Intl. Conference on Steam, Tokyo, Japan, Sept. 1968. (Invited)
7. J.M.H. Levelt Sengers, "The Critical Region of Fluids," January 24, 1969, Catholic University, Washington, DC. (Invited)
8. M. Vicentini-Missoni, J.M.H. Levelt Sengers, M.S. Green and R.I. Joseph, "Critical Exponents for Fluids and Magnets; J.M.H. Levelt Sengers, W.T. Chen, and M. Vicentini-Missoni, "Vapor Pressure of CO<sub>2</sub> near the Critical Point," Bulletin of the American Physical Society, 1969 meeting in Washington, DC, 28 April - 1 May.
9. J.M.H. Levelt Sengers, "Scaling Laws and Critical Exponents," Gordon Research Conference on the Chemistry and Physics of Liquids, Plymouth, NH, August 14, 1969. (Invited)
10. J.M.H. Levelt Sengers, "A Scaled Equation of State for the Critical Region," October 16, 1969, Johns Hopkins University, Baltimore, Maryland. (Invited)
11. J.M.H. Levelt Sengers, "Correlation of Thermodynamic Data in the Critical Region," Symposium on the Evaluation of the Thermodynamic Properties of Fluids, Airlie House, Warrenton, Virginia, November 6, 1969. (Invited)
12. J.M.H. Levelt Sengers, "Scaling Law Predictions for Thermodynamic Anomalies near the Gas-Liquid Critical Point," American Institute of Chemical Engineers, Mayflower Hotel, Washington, DC November 20, 1969.
13. J.M.H. Levelt Sengers, "Scaling Laws and Critical Exponents for Fluids and Magnets," Jan. 19-23, 1970, Midwinter Solid State Research Conference, Newporter Inn, Newport Beach, California.

14. J.M.H. Levelt Sengers, "Thermodynamics Near the Critical Point of Fluids," January 20, 1970, California Institute of Technology, Pasadena, California. (Invited)
15. J.M.H. Levelt Sengers, "Critical Region Thermodynamics," Technical University of Delft, May 3, 1971. (Invited)
16. J.M.H. Levelt Sengers, "Gas Liquid Symmetry Near the Critical Point," Gordon Conference on Liquids, Holderness, NH, Aug. 11, 1971. (Invited)
17. J.M.H. Levelt Sengers, "Critical Region Thermodynamics," Washington Area Statistical Physics Seminar, National Institute of Health, Bethesda, Maryland, November 9, 1971. (Invited)
18. J.M.H. Levelt Sengers, "Critical Region Thermodynamics in Fluids," University of Missouri-Columbia, Department of Physics, Columbia, Missouri, December 8, 1971. (Invited)
19. J.M.H. Levelt Sengers, "Scaling Laws and the Equation of State near Critical Points," Mexican Physical Society, Statistical Mechanics meeting, January 13, 1972, Oaxtepec, Mexico. (Invited)
20. J.M.H. Levelt Sengers, "Kinder, Kuche, Kirche and Kareer" - Some Observations by a Professional Woman, March 13, 1972, Physics Department, Temple University, Philadelphia, PA. (Invited)
21. J.M.H. Levelt Sengers, "3 seminars on Critical Phenomena in Gases," August 14-16, 1972. Cryogenic Data Center, Boulder, CO. (Invited)
22. J.M.H. Levelt Sengers, "Critical Phenomena in Gases," University of Oklahoma, Physics Department, Norman, OK. November 10, 1972. (Invited)
23. J.M.H. Levelt Sengers, "Polynomial analysis of PVT data" National Science Foundation short course on Critical Evaluation of Numerical Data given at University Park Campus of the Pennsylvania State University, June 27, 1973. (Invited)
24. J.M.H. Levelt Sengers, W.L. Greer, and J.V. Sengers, "Scaled Equation-of-State for Oxygen in the Critical Region," Cryogenic Engineering Conference, Georgia Institute of Technology, Atlanta, Georgia, August 9, 1973. (Invited)
25. J.M.H. Levelt Sengers, "Equation of state and thermodynamic correlations near the critical point," I.U.P.A.P. Van der Waals Centennial Conference on Statistical Mechanics, Amsterdam, Netherlands, August 27, 1973. (Invited)
26. J.M.H. Levelt Sengers, "Critical Phenomena in Fluids. I. Classical Theory" Molecular Physics & Fluid Dynamics, Physics of Fluids Seminar, Physics Department, University of Maryland, College Park, MD, Sept. 17, 1973. (Invited)
27. J.M.H. Levelt Sengers, "Critical Phenomena in Fluids. II. Scaling Laws," Molecular Physics & Fluid Dynamics, Physics of Fluids Seminar, Physics Department, University of Maryland, College Park, MD, September 24, 1973. (Invited)
28. J.M.H. Levelt Sengers, "Thermodynamics of Critical Phenomena in Multi-component Systems according to Griffiths and Wheeler," Physics of Fluids Seminar, joint seminar of Phys. Dept. and Institute of Molecular Physics, University of Maryland, College Park, MD, November 26, 1973. (Invited)

29. J.M.H. Levelt Sengers, "The Critical Region of Fluids; from van der Waals' Equation to the Scaling Laws," Physics Department, University of Toronto, Solid State and Molecular Physics Groups, Toronto, Ontario, Canada, December 13, 1973. (Invited)
30. J.M.H. Levelt Sengers, "Universality of Critical Behavior in Fluids," 8th International Conference on Properties of Steam, Hyères-Giens, France, September 24, 1974. (Invited)
31. J.M.H. Levelt Sengers, "The Experimental Determination of Critical Exponents," Landelijk Seminarium voor Statistische Mechanica, Amsterdam, October 11, 1974. (Invited)
32. J.M.H. Levelt Sengers, "Thermodynamic Properties in the Critical Region of Fluids," Instituut voor Theoretische Fysica, Amsterdam, Theoretisch Seminarium, November 14, 1974. (Invited)
33. J.M.H. Levelt Sengers, "Critical Phenomena in Fluids and Universality," École Supérieure de Physique et Chimie Industrielles, Paris, France, December 10, 1974. (Invited)
34. J.M.H. Levelt Sengers, "About Coexistence Curves, Critical Exponents and Other Hearty Eighty Year Olds," Colloquium Ehrenfestii, Leiden, January 29, 1975. (Invited)
35. J.M.H. Levelt Sengers, "Universality of Critical Behavior in Fluids," Institut für Physikalische Chemie, Technische Universität, Karlsruhe, Germany, February 13, 1975. (Invited)
36. J.M.H. Levelt Sengers, "The Oldest Critical Exponents," Fysisch Laboratorium Nijmegen, Algemeen Fysisch Colloquium, March 4, 1975. (Invited)
37. J.M.H. Levelt Sengers, "Critical Phenomena and Gravity," Van der Waals Laboratorium, Universiteit van Amsterdam, March 14, 1975. (Invited)
38. J.M.H. Levelt Sengers, "Recent Results on Critical Behavior in Fluids," Deutsche Physikalische Gesellschaft, Munster, Hauptvortrag, Joint Meeting on Statistical Mechanics of the Dutch and German Physical Societies, Munster, Germany, March 19, 1975. (Invited)
39. J.M.H. Levelt Sengers, "The History of the Critical Exponents," Laboratorium voor Technische Natuurkunde, Technische Universiteit, Delft. Fysisch Colloquium. March 20, 1975 (Invited)
40. J.M.H. Levelt Sengers, "The Study of Phase Transitions in Fluids in the 19th Century and Now," Fysisch Laboratorium Nijmegen, Voorkandidaats Colloquium Natuurkunde, March 26, 1975. (Invited)
41. J.M.H. Levelt Sengers, "From Van der Waals' Equation to Scaling Laws," Belgian Physical Society, Antwerpen, June 2, 1975. (Invited)
42. J.M.H. Levelt Sengers, "Critical Phenomena and Gravity," Department Natuurkunde, Universiteit van Leuven, Fysisch Colloquium, June 3, 1975. (Invited)
43. J.M.H. Levelt Sengers, "Critical Exponents 70 years ago," Institut für Technische Thermodynamik, Technische Universität München, June 23, 1975. (Invited)
44. J.M.H. Levelt Sengers, "Liquidons and Gasons: Persistence of the Liquid State Beyond the Critical Point," Heat Division Colloquium, NBS, September 29, 1975.

45. J.M.H. Levelt Sengers, "Liquidons and Gasons: Persistence of the Liquid State Beyond the Critical Point," Mathematical and Physics Colloquium, The Rockefeller University, New York, NY, November 19, 1975. (Invited)
46. J.M.H. Levelt Sengers, "Critical Exponents at the Turn of the Century," Physics Department, The Rockefeller University, New York, NY, November 20, 1975. (Invited)
47. J.M.H. Levelt Sengers, "Early Controversies Surrounding Van der Waals' Equation for Fluids," The Philosophical Society of Washington, Cosmos Club, Washington, DC, December 19, 1975. (Invited)
48. J.M.H. Levelt Sengers, "Liquidons and Gasons; Persistence of the Liquid State above the Critical Point," Department of Physics Colloquium, The Catholic University of America, Washington, DC, January 29, 1976. (Invited)
49. J.M.H. Levelt Sengers, "Controversies about the Nature of the Supercritical Fluid between 1880 and 1907: Kamerlingh Onnes Takes on the Rest of Europe." Joint Atlantic Seminar in the History of the Physical Sciences, The Johns Hopkins University, Baltimore, Maryland, March 20, 1976. (Invited)
50. J.M.H. Levelt Sengers, "Universality of Fluid Critical Behavior," Charles Beckett Symposium, July 23, 1976, NBS. (Invited)
51. J.M.H. Levelt Sengers, "The Anomalous Behavior of Fluids in the Critical Region," Polytechnic Institute of New York, Department of Chemical Engineering, Brooklyn, NY, September 28, 1976. (Invited)
52. J.M.H. Levelt Sengers, "Universality of Thermophysical Properties Near the Critical Point," Seventh Symposium on Thermophysical Properties, National Bureau of Standards, May 10, 1977. (Invited)
53. J.M.H. Levelt Sengers, "A Scaled Fundamental Equation for the Critical Region of Steam," Seventh Symposium on Thermophysical Properties, National Bureau of Standards, May 11, 1977.
54. J.M.H. Levelt Sengers, "Universality of Critical Behavior," The Sixth Canadian Symposium on Theoretical Chemistry, University of New Brunswick, Department of Chemistry, Fredericton, NB, Canada, June 24, 1977. (Invited)
55. J.M.H. Levelt Sengers, "Tricritical Points," Fredericton, NB, Canada, June 24, 1977. (Invited)
56. J.M.H. Levelt Sengers, "Critical Phenomena," Wilson College, Chambersburg, PA, November 14, 1977.
57. J.M.H. Levelt Sengers, "Tricritical Points," Physical Chemistry Division Seminar, February 16, 1978, National Bureau of Standards.
58. J.M.H. Levelt Sengers, "Critical Point Universality," Departmental Seminar, Department of Chemistry, Iowa State University, Ames, Iowa, March 30, 1978

59. J.M.H. Levelt Sengers, "Light Scattering near a Fluid Tricritical Point," Physics Department, University of Toronto, Toronto, Canada, March 12, 1979. (Invited)
60. J.M.H. Levelt Sengers, "Tricritical Points, and the Range of Asymptotic Scaling in Fluids," Chemical Society (Great Britain) Statistical Mechanics and Thermodynamics Group, School of Chemistry, University of Bristol, Bristol, England, April 5, 1979.
61. J.M.H. Levelt Sengers, "Revisions of and Corrections to Critical-Point Scaling in Fluids," Department of Physical Chemistry, Philipps Univ. Marburg, Marburg, (Laher) W. Germany, September 7, 1979. (Invited)
62. J.M.H. Levelt Sengers, "A Revised and Extended Scaled Fundamental equation for the Thermodynamic Behavior of Steam in the Critical Region". 9th International Steam Conference: Technische Universität, München, W. Germany, Sept. 11, 1979.
63. J.M.H. Levelt Sengers, "A Experimental Determination of the Critical Behavior of the Dielectric Constant of SF<sub>6</sub>". University of Bochum; Institut for Thermo- und Fluid dynamik, W. Germany; Sept. 6, 1979. (Invited)
64. J.M.H. Levelt Sengers, "Liquidons and Gasons," General Chemistry Seminar, Cornell University, March 13, 1980. (Invited)
65. J.M.H. Levelt Sengers, "Dielectric-Constant Critical Anomaly in SF<sub>6</sub>" General Chemistry Seminar, Cornell University, March 14, 1980. (Invited)
66. J.M.H. Levelt Sengers, "Light Scattering Test of Mean-Field Theory in a Four-Component Fluid System near a Tricritical Point," Department of Chemistry, University of California at Los Angeles, April 17, 1980. (Invited)
67. J.M.H. Levelt Sengers, "Revisions of and Corrections to Critical-Point Scaling in Fluids," Department of Chemistry, University of California at Los Angeles, April 18, 1980. (Invited)
68. J.M.H. Levelt Sengers, "Critical Phenomena and Properties of Steam," Department of Chemical Engineering, Princeton University, February 11, 1981. (Invited)
69. J.M.H. Levelt Sengers, "Measurement and Correction of Thermodynamic Properties of Ethylene," Department of Chemical Engineering, Cornell University, March 16, 1981. (Invited)
70. J.M.H. Levelt Sengers, "Thermodynamic Surface for the Critical Region of Ethylene," A.S.M.E. Eighth Symposium on Thermophysical Properties, NBS, June 1981.
71. J.M.H. Levelt Sengers, "Virial Coefficients of Ethylene," A.S.M.E. Eighth Symposium on Thermophysical Properties, NBS, June 1981.
72. J.M.H. Levelt Sengers, "Corresponding States and Critical-Point Universality," at the retirement of Professor J. de Boer, Institute for Theoretical Physics, University of Amsterdam, September 1981.
73. J.M.H. Levelt Sengers, "Corresponding States and Critical-Point Universality," Department of Chemistry, Hunter College, NY., October 23, 1981. (Invited)

74. J.M.H. Levelt Sengers, "Critical Phenomena and Properties of Steam," Department of Chemical Engineering, University of Pennsylvania, November 16, 1981. (Invited)
75. J.M.H. Levelt Sengers, "Critical Exponents and Properties of Steam," Department of Chemistry, University of Delaware, February 18, 1982. (Invited)
76. J.M.H. Levelt Sengers, Course "Critical Phenomena in Fluids," taught twice a week, for 10 weeks, as Regent's Professor at UCLA, Department of Chemistry, March - June 1982. (Invited)
77. J.M.H. Levelt Sengers, "The State of the Critical State of Fluids" Plenary Lecture, IUPAC Conference on Chemical Thermodynamics, September 7, 1982. (Invited)
78. J.M.H. Levelt Sengers, "Steam, Heavy Water and the Renormalization Group," 12th Annual Meeting on Statistical Physics, Universidad Nacional, Mexico City, Jan. 7, 1983.
79. J.M.H. Levelt Sengers, "Near-critical Steam, Heavy Water and Aqueous Solutions," Symposium on Structure and Dynamics of Liquids and Solutions, ACS Meeting, Seattle, WA, March 23, 1983.
80. J.M.H. Levelt Sengers, (with G. Morrison and R.F. Chang), "Critical Behavior of Fluids and Fluid Mixtures," 3rd International Conference on Fluid Properties and Phase Equilibrium for Chemical Process Design, Callaway Gardens, GA, April 10, 1983.
81. J.M.H. Levelt Sengers, "Critical Fluctuations in Fluids, National Institute of Metrology, Tsukuba, Japan, Sept. 13, 1983.
82. J.M.H. Levelt Sengers, "Near-Critical Dilute Mixtures -- Classical," Department of Chemical Engineering Sciences, Brigham Young University, Provo, UT, March 29, 1984.
83. J.M.H. Levelt Sengers, "Dilute Near-Critical Mixtures, Physics Department, Colorado State University, Fort Collins, CO, April 2, 1984.
84. J.M.H. Levelt Sengers, "Dilute Near-Critical Mixtures," Chemical Engineering Science Division, National Bureau of Standards, Boulder, CO, April 3, 1984.
85. J.M.H. Levelt Sengers, "Semi-Automated Facilities for Measuring Density, PVT and VLE of Energy-Related Fluids," Second Symposium on Energy Engineering Sciences, Argonne IL, April 10, 1984.
86. J.M.H. Levelt Sengers, "Dilute Near-Critical Mixtures," Physics Department, University of Louvain, Belgium, August 29, 1984.
87. J.M.H. Levelt Sengers, "Impure Steam Near the Critical Point, 10th International Conference on Properties of Steam, Moscow, USSR, September 5, 1984.
88. J.M.H. Levelt Sengers, "Dilute Near-Critical Mixtures," Department of Chemical Engineering, Texas A&M University, College Station, TX, September 27, 1984.
89. J.M.H. Levelt Sengers, "Thermodynamic Anomalies in Supercritical Fluids Mixtures," Symposium on Fundamental Thermodynamics of Supercritical Extraction, AIChE Annual Meeting, San Francisco, CA, November 26, 1984.

90. J.M.H. Levelt Sengers, "Near-Critical Aqueous Salt Solutions," Symposium on Thermodynamic and Transport Properties, AIChE Spring Meeting, Houston, TX, March 25, 1985.
91. J.M.H. Levelt Sengers, "Nonclassical Description of (Dilute) Near-Critical Mixtures," Symposium on Equation of State - Theories and Applications, ACS National Meeting, Miami Beach, FL, April 30, 1985.
92. J.M.H. Levelt Sengers, (coauthor: C. Everhart), "Near-Critical Aqueous Salt Solutions," NBS/CCE Conference on Electrolyte Solutions in Science and Engineering, NBS, Gaithersburg, MD, June 10, 1985.
93. J.M.H. Levelt Sengers, "Supercritical Solubility," Department of Chemical Engineering, University of Maryland, College Park, MD, June 16, 1985.
94. J.M.H. Levelt Sengers, "Thermodynamic Behavior of Supercritical Fluid Mixtures," Ninth Symposium on Thermophysical Properties, University of Colorado, Boulder, CO, June 25, 1985.
95. J.M.H. Levelt Sengers, "Near-Critical Aqueous Electrolyte Solutions, Theoretical Division, Los Alamos National Laboratory, Los Alamos, NM, Feb. 3, 1986.
96. J.M.H. Levelt Sengers, "Dilute Mixtures and Solutions near Critical Points," 4th International Conference on Fluid Properties and Phase Equilibria for Chemical Process Design, Lo-Skolen, Denmark, May 14, 1986.
97. J.M.H. Levelt Sengers, "Aqueous Solutions near the Critical Point of Water," Gordon Conference on Water and Aqueous Solutions, Colby-Sawyer College, NH, August 5, 1986. (Invited)
98. J.M.H. Levelt Sengers, "Dilute Near-Critical Mixtures and Aqueous Electrolyte Solutions," Van der Waals Laboratory, University of Amsterdam, Netherlands, September 16, 1986.
99. J.M.H. Levelt Sengers, "Dilute Near-Critical Mixtures and Aqueous Electrolyte Solutions," Institute for Physical Chemistry, Ruhr Universität Bochum, W. Germany, September 26, 1986. (Invited)
100. J.M.H. Levelt Sengers, "Dilute Near-Critical Mixtures and Aqueous Electrolyte Solutions," University of Rome, Italy, October 3, 1986. (Invited)
101. J.M.H. Levelt Sengers, "Decorated Lattice Gas Model For Supercritical Solubility," AIChE meeting (Miami Beach), November 4, 1986.
102. J.M.H. Levelt Sengers, "A Semi-Automated Burnett Facility: PVT of a Geothermal Working Fluid Mixture," Kobayashi Symposium, AIChE, Houston, TX, April 1, 1987.
103. J.M.H. Levelt Sengers, "Dilute Aqueous Solutions Near the Critical Point of Steam," International Conference on Thermodynamics of Aqueous Systems with Industrial Applications, Airlie House, Warrenton, VA, May 11, 1987.
104. J.M.H. Levelt Sengers, "Semi-Automated Burnett PVT Apparatus: Properties of a Geothermal Working Fluid," Fifth Symposium on Energy Engineering Sciences, Argonne National Laboratories, Argonne, IL, June 17, 1987.

105. J.M.H. Levelt Sengers, "Verdunde Oplossingen bij het Kritisch Punt van het Oplosmiddel" (Dilute Mixtures near the Critical Point of the Solvent), Department of Chemical Technology, University of Technology, Delft, Netherlands, September 11, 1987. (Invited)
106. J.M.H. Levelt Sengers, "Global Phase Diagrams for Mixtures of Long and Short Alkanes," AIChE meeting (New York), November 18, 1987.
107. J.M.H. Levelt Sengers, "Thermodynamics of Mixtures of Long and Short-Chain Alkanes," Ehrenfest Colloquium, Lorentz Institute, University of Leiden, Leiden, Netherlands, January 13, 1988. (Invited)
108. J.M.H. Levelt Sengers and J.S. Gallagher, "High-Temperature Aqueous Solutions: A Special Class of Dilute Mixtures," AIChE, New Orleans, March 9, 1988.
109. J.M.H. Levelt Sengers, "Supercritical Mixtures and Solutions - Thermodynamics and Power Laws," Northwest Conference on Research in Supercritical Fluids, Moscow, Idaho, April 7, 1988. (Invited)
110. J.M.H. Levelt Sengers, "Thermodynamic Properties of Aqueous Systems at High Pressures and Temperatures; Needs, Methods and Challenges," U.S. Japan Seminar, NIST, Washington, DC, June 23, 1988. (Invited)
111. J.M.H. Levelt Sengers, "Solubility in Near and Supercritical Water," EPRI Conference on Cycle Chemistry in Fossil Plants, Seattle, August 31, 1988.
112. J.M.H. Levelt Sengers, "Solubility in Near- and Supercritical Solvents," Department of Chemical Engineering, University of S. Florida, November 4, 1989. (Invited)
113. J.M.H. Levelt Sengers, "The Work of the Thermophysics Division at NIST in the Areas of Refrigerants and Aqueous Solutions," Institut für Thermodynamik, Technische Universität München, April 7, 1989 (Invited).
114. J.M.H. Levelt Sengers (M.L. Japas, A.H. Harvey, J.S. Gallagher), "Aqueous Systems Near Critical Points," Aqueous Electrolytes Meeting, NIST Boulder, June 26, 1989.
115. J.M.H. Levelt Sengers, "Critical Behavior of Fluids and Fluid Mixtures, Department of Chemical Technology, Technical University, Delft, Netherlands, September 11, 1989. (Invited)
116. J.M.H. Levelt Sengers, "Phase Transitions in High-Temperature Aqueous Solutions," Chemical Physics Seminar, University of Maryland, College Park, MD, October 25, 1989. (Invited)
117. J.M.H. Levelt Sengers, "Phase Transitions in High-Temperature Aqueous Solutions," Statistical Physics Seminar, University of Maryland, College Park, MD, November 1, 1989. (Invited)
118. J.M.H. Levelt Sengers, "Predictions of Phase Behavior in Multicomponent Hydrocarbon Mixtures by Means of a Parameter Lumping Technique," AIChE Spring Meeting, Orlando, FL, March 19, 1990.
119. J.M.H. Levelt Sengers, "Do Conducting Fluids Have Classical Critical Behavior?" Department of Technical Thermodynamics and Department of Chemistry, Ruhr-Universität, Bochum, FRG, April 5, 1990. (Invited)



120. J.M.H. Levelt Sengers, "Near- and Supercritical Aqueous Solutions," Department of Chemical Engineering, University of Illinois at Chicago, Chicago, IL, May 7, 1990. (Invited)
121. J.M.H. Levelt Sengers, Impurity Effects in Near- and Supercritical Steam: A New Approach," International Association for the Properties of Water and Steam, Buenos Aires, Argentina, September 17, 1990.
122. J.M.H. Levelt Sengers, "Generalized Corresponding States and High-Temperature Aqueous Systems," Comision Nacional de Energia Atomica, Buenos Aires, Argentina, September 25, 1990. (Invited)
123. J.M.H. Levelt Sengers, "Do Ionic Fluids Have Classical Critical Behavior?" Physics Department, University of La Plata, La Plata, Argentina, September 27, 1990. (Invited)
124. J.M.H. Levelt Sengers, "Do Electrolyte Solutions Have Classical or Nonclassical Critical Behavior?" AIChE Meeting, Chicago, IL, November 13, 1990.
125. J.M.H. Levelt Sengers, "Critical Behavior in Fluids and Fluid Mixtures," Department of Chemical Engineering, University of Virginia, Charlottesville, VA, March 21, 1991. (Invited)
126. J.M.H. Levelt Sengers, "The Peculiarities of Dilute Near-Critical Mixtures," Department of Chemical Engineering, University of Maine, Orono, ME, April 5, 1991. (Invited)
127. J.M.H. Levelt Sengers, "Solubility Near the Solvent's Critical Point," Second International Symposium on Supercritical Fluids, Boston, MA, May 21, 1991.
128. J.M.H. Levelt Sengers, "Standard States, Reference States, and Finite-Concentration Effects in Near-Critical Aqueous Solutions," Eleventh Symposium on Thermophysical Properties, University of Colorado, Boulder, CO, June 25, 1991. (Invited)
129. J.M.H. Levelt Sengers, "Critical Behavior of Ionic Fluids; and Experimental Assessment," Gordon Research Conference on the Chemistry and Physics of Liquids, Plymouth, NH, August 12, 1991. (Invited)
130. J.M.H. Levelt Sengers, "Critical Behavior of Ionic Fluids," Chemistry Department, Universität Bremen, Germany, November 4, 1991.
131. J.M.H. Levelt Sengers, "Critical Behavior of Ionic Fluids," Physikalische Chemie, Universität Karlsruhe, Germany, November 11, 1991. (Invited)
132. J.M.H. Levelt Sengers, "Supercritical Steam; Technology, Environment, Sciences," Physics Department, Technische Universität Aachen, Germany, November 25, 1991. (Invited)
133. J.M.H. Levelt Sengers, "Thermophysikalische Eigenschaften von verdünnten Lösungen in nahkritischen Lösungsmitteln," Physikalisch-Chemisches Kolloquium, Ruhr Universität Bochum, Germany, January 31, 1992. (Invited)
134. J.M.H. Levelt Sengers, "Critical Behavior of Ionic Fluids," Statistical Physics Seminar, University of Maryland, College Park, MD, May 11, 1992. (Invited)

135. J.M.H. Levelt Sengers, "Thermophysical Properties of Supercritical Multicomponent Aqueous Mixtures," Workshop on Federal Programs Involving Supercritical Water Oxidation, NIST, Gaithersburg, MD, July 7, 1992.
136. J.M.H. Levelt Sengers, "Supercritical Water Oxidation, A New Technology," Gordon Research Conference on Water, The Holderness School, Holderness, NH, August 3, 1992. (Invited)
137. J.M.H. Levelt Sengers, "Supercritical Steam: Science, Energy, Environment," Honorary Doctor's Lecture, Technical University of Delft, Delft, The Netherlands, September 18, 1992. (Invited)
138. J.M.H. Levelt Sengers, "Supercritical Steam; Energy, Environment, Science," NIST Colloquium, Gaithersburg, MD, October 9, 1992.
139. J.M.H. Levelt Sengers, "Congruence - An Accurate Property Estimator for Mixtures of Long n-Alkanes?" AIChE Annual Meeting, Miami Beach, FL, November 2, 1992.
140. J.M.H. Levelt Sengers, "Critical Behavior of Ionic Fluids," 68th Statistical Mechanics Meeting, Rutgers, NJ, December 18, 1992. (Invited)
141. J.M.H. Levelt Sengers, "The Science of Supercritical Steam: Application to Hazardous Waste Destruction," Karl Herzfeld Memorial Lecture, Catholic University of America, Washington, DC, February 18, 1993. (Invited)
142. J.M.H. Levelt Sengers, "Supercritical Water Oxidation for Environmental Cleanup," Department of Chemistry, Howard University, Washington, DC, March 12, 1993. (Invited)
143. J.M.H. Levelt Sengers, "Supercritical Water Oxidation," 13th Experimental Thermodynamics Conference, University of Bristol, Bristol, UK, March 25, 1993. (Invited)
144. J.M.H. Levelt Sengers, "Theory and Experiment Near the Critical Point," The Statistical Mechanics of Fluids Meeting, Physical Chemistry Laboratory, Oxford, UK, March 30, 1993. (Invited)
145. J.M.H. Levelt Sengers, "Critical Behavior of Fluids, Concepts and Applications. Part I. Basic Concepts". NATO ASI on Supercritical Fluids, Kemer, Turkey, July 19, 1993. (Invited)
146. J.M.H. Levelt Sengers, "Critical Behavior of Fluids, Concepts and applications. Part 2. Dilute Mixtures Near Critical Points". NATO ASI on Supercritical Fluids, Kemer, Turkey, July 22, 1993. (Invited)
147. J.M.H. Levelt Sengers, "Critical Behavior of Ionic Fluids," Second Liquids Conference of the European Physical Society, Florence, Italy, September 21, 1993. (Invited).
148. J.M.H. Levelt Sengers, "Raman Spectroscopy and Thermodynamic Modeling Related to Supercritical Water Oxidation," IAPWS one-day seminar, Milan, Italy, September 14, 1993. (Invited).
149. J.M.H. Levelt Sengers, "Application of the Taylor Dispersion Method in Supercritical Fluids," American Institute of Chemical Engineers 1993 Annual Meeting, St. Louis, MO, November 8, 1993.

150. J.M.H. Levelt Sengers, "Helmholtz Free Energy Models for Supercritical Aqueous Systems," American Institute of Chemical Engineers 1993 Annual Meeting, St. Louis, MO, November 8, 1993.
151. J.M.H. Levelt Sengers, "Supercritical Water Oxidation for Hazardous Waste Destruction," North Carolina State University, Raleigh, NC, February 28, 1994. (Invited)
152. J.M.H. Levelt Sengers, "Supercritical Fluids: Properties and Applications," University of Wisconsin-Madison, Madison, WI, March 24, 1994. (Invited)
153. J.M.H. Levelt Sengers, "Significant Contributions of IAPWS to the Power Industry, Science and Technology," 12th International Conference on Properties of Water and Steam, Orlando, FL, September 12, 1994. (Invited)
154. J.M.H. Levelt Sengers, "Supercritical Fluids: Properties and Applications," Texas A&M University, College Station, TX, October 11, 1994. (Invited)
155. J.M.H. Levelt Sengers, "Hydrothermal Oxidation, A Viable Way to Destroy Hazardous Waste?" University of Maryland, College Park, MD, March 7, 1995. (Invited)
156. J.M.H. Levelt Sengers, (with S. Wiegand), "Critical Behavior of Ionic Fluids," Thermophysics Division Seminar, NIST, Gaithersburg, MD, April 1995.
157. J.M.H. Levelt Sengers, Eight Lectures in Course on Critical Phenomena, Department of Chemical Technology, Delft University of Technology, June 4-7, 1995. (Invited)
158. J.M.H. Levelt Sengers, "Physics Education in the U.S.A.," Physics Department, University of Rome La Sapienza, June 16, 1995. (Invited)
159. J.M.H. Levelt Sengers, "Critical Phenomena in Fluids; Recent Applications in Chemical Technology," Physics Department, University of Rome La Sapienza, June 20, 1995. (Invited)
160. J.M.H. Levelt Sengers, "Thermodynamics and Applications of Supercritical Fluids," Department of Chemical Engineering, University of Rome La Sapienza, June 26, 1995. (Invited)
161. J.M.H. Levelt Sengers, "Solutions Near the Solvents Critical Point," Summer School on Supercritical Fluids and Materials, Chateau le Thil, France, July 4, 1995.
162. J.M.H. Levelt Sengers, "Solubility in Near- and Supercritical Solvents," International Conference on Supercritical Fluid Extraction, Makhachkala, Dagestan, Russia, September 11, 1995. (Invited)
163. J.M.H. Levelt Sengers, "Supercritical Water Oxidation for Hazardous Waste Destruction," Department of Chemical Engineering, Rice University, Houston, TX, October 12, 1995. (Invited)
164. J.M.H. Levelt Sengers (with J.S. Gallagher), "Thermodynamics and Phase Behavior of Salts in Supercritical Water," ARO sponsored workshop, Endicott House, Denham, MA, November 6, 1995.
165. S. Wiegand, R.F. Berg, and J.M.H. Levelt Sengers, "Critical Behavior of a Nonaqueous Ionic Binary Mixture," AIChE Spring Meeting, New Orleans, LA, February 27, 1996.

166. J.M.H. Levelt Sengers, "Critical Points, Steam, and Hot Water," Keynote Address, WISE (Women in Science and Engineering) Conference, University of Washington, Seattle, WA, April 6, 1996. (Invited)
167. J.M.H. Levelt Sengers, "Phase Behavior and Properties of Fluid Mixtures Near Critical Points," Short Course at NIST, four mornings in the week of April 22-28, 1996.
168. J.M.H. Levelt Sengers, "Thermodynamic Modeling of Aqueous Systems Near and Above the Water Critical Point," 51st Annual Calorimetry Conference, Vancouver, BC, Canada, August 5, 1996. (Invited)
169. J.M.H. Levelt Sengers, "Chemistry Near the Water Critical Point," IAPWS Symposium, Frederica, Denmark, September 11, 1996. (Invited)
170. J.M.H. Levelt Sengers, "Critical and Supercritical Behavior of Ionic Systems," Chemistry Department, University of Maine, Orono, ME, November 21, 1996. (Invited)
171. J.M.H. Levelt Sengers, "Critical Behavior of Ionic Fluids," Winter Statistical Physics Meeting, Cuernavaca, Mexico, January 17, 1997. (Invited)
172. J.M.H. Levelt Sengers, "Supercritical Water, a Contrarious Fluid and its Applications," CSTL Colloquium Series, NIST, Gaithersburg, MD, February 4, 1997. (Invited)
173. J.M.H. Levelt Sengers, "Supercritical Fluids and Their Uses," University of Maryland, in Graduate Course on Criticality of Fluids by M.E. Fisher, April 17, 1997. (Invited)
174. J.M.H. Levelt Sengers, "Supercritical Fluids, Fish nor Fowl," School of Chemical Engineering, Georgia Tech. Atlanta, GA, April 21, 1997. (Invited)
175. J.M.H. Levelt Sengers, "Supercritical Fluids, Their Properties and Uses," AIChE Local Chapter Meeting, Silver Spring, MD, January 21, 1998. (Invited)
176. J.M.H. Levelt Sengers, "Supercritical Water as a Medium for Hazardous Waste Destruction," Department of Chemical Engineering, City College of New York, New York, NY, February 2, 1998. (Invited)
177. J.M.H. Levelt Sengers, Keynote, "Mean-field Theories, their Weaknesses and Strengths," PPEPPD, Noordwijkerhout, Netherlands, April 26, 1998. (invited)
177. J.M.H. Levelt Sengers, "Criticality of Fluids from van der Waals to the Present," Symposium on the History of Critical Phenomena, American Physical Society, Los Angeles, CA, March 20, 1998. (Invited)
178. J.M.H. Levelt Sengers, "Supercritical Fluids: their Properties and Uses," NATO Advanced Institute on Supercritical Fluids, Kemer, Turkey, July 14, 1998. (Invited)
179. J.M.H. Levelt Sengers, "Water-Sodium Sulfate, Experiments and Modeling," IAPWS Workshop on Aqueous Mixtures, London, United Kingdom, September 9, 1998.
180. J.M.H. Levelt Sengers, "Supercritical Fluids: Their Properties and Applications," Physics Department, George Mason University, Fairfax, VA, October 26, 1998. (Invited)

181. J.M.H. Levelt Sengers, "Supercritical Water: a Contrarious Solvent and its Applications," Department of Chemical Engineering, University of Texas at Austin, November 10, 1998. (Invited)
182. J.M.H. Levelt Sengers, "Critical Points in My Career," Centennial Session on Breakthroughs of Women in Physics, APS Centennial meeting, Atlanta, GA, March 21, 1999. (Invited)
183. J.M.H. Levelt Sengers, "Phase Transitions in Coulombic Systems," 81th Statistical Mechanicals Conference, Rutgers University, May 9, 1999. (Invited)
184. J.M.H. Levelt Sengers, Short course on Kinetic Theory of Gases, 12 lectures, University of Utrecht, Utrecht, Netherlands, June 1999.
185. J.M.H. Levelt Sengers, "Supercritical Water: a Contrarious Solvent and its Applications," Physics Department, University of Utrecht, Utrecht, Netherlands, July 1, 1999. (invited)
186. J.M.H. Levelt Sengers, "Vapor-Liquid-Solid Phase Transitions in Aqueous Sodium Sulfate and Sodium Carbonate from Heat Capacity Measurements near the First Critical Endpoint," US Army Research Office Workshop on Guide-lines for Phase Separations in High Temperature and Supercritical Water Solutions, Karlsruhe, Germany, July 8, 1999.
187. J.M.H. Levelt Sengers, "Salt Deposition from Supercritical Water," Department of Chemical Engineering, Princeton University, February 15, 2000. (Invited)
188. J.M.H. Levelt Sengers, "How Fluids Unmix; a History in Progress," Institute for History and Foundations of the Natural Sciences, University of Utrecht, Netherlands, May 19, 2000. (Invited)
189. J.M.H. Levelt Sengers, "The Laboratory Founded by Van der Waals," 14<sup>th</sup> Symposium on Thermophysical Properties, University of Colorado, Boulder, CO, June 25, 2000. Plenary lecture. (Invited)
190. J.M.H. Levelt Sengers, "Women Scientists at the Bureau," Panel, Centennial Symposium, NIST, March 5, 2001. (Invited).
191. J.M.H. Levelt Sengers, "How Fluids Unmix: Discoveries by Van der Waals and his School," Thermodynamics 2001, University of Bristol, UK, April 4, 2001.
192. J.M.H. Levelt Sengers, "Korteweg's Theory of Plaits on Surfaces (1891)," 86<sup>th</sup> Statistical Mechanics Conference, Symposium in honor of M.E. Fisher, Rutgers University, Dec. 16, 2001. (Invited)
193. J.M.H. Levelt Sengers, "Fasenscheiding van Gas-Vloeistofmengsels rond 1900: een Unieke Samenwerking brengt de Nederlandse Wetenschap aan de Spits," (Phase Separation in Gas-Liquid Mixtures; a Unique Collaboration moves Dutch Science to the Forefront.) Royal Netherlands Academy of Sciences, Oct. 10, 2002. (Invited)
194. J.M.H. Levelt Sengers, "Key Concepts from Gibbs that empowered Van der Waals, Korteweg and Bakhuis Roozeboom," Gibbs Centennial Symposium, American Physical Society, Austin, TX, March 3, 2003. (Invited)
195. J.M.H. Levelt Sengers, "Key Concepts from Gibbs that empowered Van der Waals, Korteweg and Bakhuis Roozeboom," Gibbs Centennial Symposium, IPST, University of Maryland, March 6, 2003. (Invited).

196. J.M.H. Levelt Sengers, "Korteweg's 1891 Theory of Folds on Surfaces; a Key to Mixture Phase Separation," NIST, Materials Science and Engineering Laboratory, NIST, March 14, 2003.
197. J.M.H. Levelt Sengers, "Phase Separation in Helium-Containing Mixtures, 1906 and Beyond." 89<sup>th</sup> Statistical Mechanics Conference, Rutgers University, May 19, 2003. (invited).
198. J.M.H. Levelt Sengers, "The Discovery of Type-IV Fluid Phase Behavior," 15<sup>th</sup> Symposium on Thermophysical Properties, Boulder, CO, June 25, 2003.
199. J.M.H. Levelt Sengers, "Near-Critical Behavior of Aqueous Systems," Symposium, International Association for the Properties of Water and Steam, Vejle, Denmark, Aug. 27, 2003. (Invited).
200. J.M.H. Levelt Sengers, "Phase Separation in Fluid Mixtures: Scott and the Dutch," Department of Chemistry and Biochemistry, UCLA, Jan.13, 2004. (Invited).
201. J.M.H. Levelt Sengers, "Key Concepts from Gibbs that empowered Van der Waals, Korteweg and Bakhuis Roozeboom," Virginia Tech, Feb. 24, 2004. (Invited).
202. J.M.H. Levelt Sengers, "Ulrich Franck – Opening New Frontiers in Physical Chemistry," Department of Physical Chemistry, University of Karlsruhe, Germany, November 11, 2005 (Invited).
203. J.M.H. Levelt Sengers, "Phase behavior of fluid mixtures; how early theories, measurements and models provided the foundation of today's applications." Department of Chemical Engineering, Technical University Trondheim, Norway, October, 2006. (Invited)
204. J.M.H. Levelt Sengers, "Phase behavior and criticality of fluids and fluid mixtures - Dutch theorists and experimentalists in the 19<sup>th</sup> century," Forschungszentrum Jülich GmbH, Institut für Festkörperforschung, Germany, January 24, 2007 (Invited)
205. Johanna (Anneke) Levelt Sengers, "A Global Energy View - Facts, Figures, Fiction," Torch Chapter, Shepherdstown WV, March 2007 (invited)
206. J.M.H. Levelt Sengers, "Women for Science - Retrospective and Outlook," 98<sup>th</sup> Statistical Mechanics Conference, Rutgers University, Hill Center, Room 114, December 16, 2007 (Invited).
208. J.M.H. Levelt Sengers, "A Gas that Sinks in a Liquid – Kamerlingh Onnes' First Published Helium Experiment," Thermophysical Properties Division, Boulder, Colorado, July 8, 2008. (Invited)
209. Johanna (Anneke) Levelt Sengers, "A Gas that Sinks in a Liquid – Kamerlingh Onnes' First Published Helium Experiment," 25<sup>th</sup> International Conference on Low Temperature Physics, Leiden, Netherlands, August 10, 2008 (Invited)
210. Johanna (Anneke) Levelt Sengers, "A Gas that Sinks in a Liquid – Kamerlingh Onnes' First Published Helium Experiment," Department of Physical Chemistry, University of Bremen, September 12, 2008. (Invited)
211. J.M.H. Levelt Sengers, "Near-Critical Solutions and Supercritical Solubility - a Century of Experiments," AIChE Annual Meeting, Philadelphia, PA, November 14, 2008. Symposium in honor of John O'Connell. (Invited).
212. Johanna Levelt Sengers, "Aspects and Consequences of Global Warming – Recent Developments," Torch Chapter, Shepherdstown, WV, Jan 28, 2010. (Invited)

213. Johanna M.H. Levelt Sengers, "Aspects and Consequences of Global Warming – Recent Developments," Hyatt Classic Residence, Chevy Chase, MD, Sept. 10, 2010. (Invited)
214. Johanna (Anneke) Levelt Sengers, "Common Ground: Criticality, Water, Women," in honor of Gene Stanley's 70<sup>th</sup> birthday, Boston University, March 18, 2011. (Invited)
215. Johanna (Anneke) Levelt Sengers, "Thermal Conductivity of Fluids near Critical Points - A Saga of Principle, Precision, Persistence and Practical Application," AIChE Symposium in honor of Jan Sengers' 80<sup>th</sup> birthday, Oct. 18, 2011. (Invited)
216. Anneke Levelt Sengers, "Bridging Physics, Chemistry and Engineering - Moscow, Maryland, Mikhail," Symposium in honor of the 70<sup>th</sup> birthday of Mikhail Anisimov, Institute of Physical Sciences and Technology, University of Maryland, College Park, MD, April 27, 2012. (Invited)
217. Anneke Levelt Sengers, "Science and Technology for Development; an Initiative of the Network of Science Academies in the Americas," 107th Statistical Mechanics Conference, Human Rights Session, Rutgers University, May 7, 2012. (Invited)
218. Johanna Levelt Sengers, "Critical Points in my Career," Department of Mechanical, Aerospace and Nuclear Engineering, Student Advisory Lecture, Rensselaer Polytechnic Institute, Troy, NY, August 28, 2013. (Invited)
219. Johanna Levelt Sengers, "Justified Pride and Harmful Prejudice in Engineering and Science," NYU Polytechnic School of Engineering, Brooklyn, NY, April 7, 2014 (Invited)
220. Johanna M.H. (Anneke) Levelt Sengers, "Pride and Prejudice in Science and Engineering," Twentieth Annual Shih-I Pai Lecture, Institute of Physical Science and Technology and Department of Physics, University of Maryland, College Park, MD, October 7, 2014 (Invited)

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The following talks were given in my capacity as co-chair of the InterAcademy Panel "Women for Science." They do not necessarily represent the views of NIST. I co-chaired this panel from December 2004 through June 2006.

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1. Johanna Levelt Sengers and Manju Sharma, "Women for Science, an InterAcademy Council Advisory Report," IAC Annual Meeting, Royal Netherlands Academy of Sciences, Amsterdam, Netherlands, Feb. 2, 2006. (Invited).
  2. Johanna Levelt Sengers, "Women for Science, an InterAcademy Council Advisory Report," AAAS, St. Louis, February 17, 2006. (Invited).
  3. Johanna Levelt Sengers, "Women for Science," Local Chapter of AAUW, Gaithersburg, MD, March 27, 2006 (Invited).
  4. Johanna Levelt Sengers and Manju Sharma, "Women for Science, an InterAcademy Council Advisory Report," Launch, French Academy of Sciences, June 20, 2006. (Invited).
  5. Johanna Levelt Sengers, "Women scientists and engineers essential to global capacity building - a recent IAC report" GASAT Meeting, University of Brighton, September 7, 2006. (Invited).

6. Johanna Levelt Sengers, "The world's science academies address the under-representation of women," Brookhaven National Laboratory, September 22, 2006. (Invited).
7. Johanna Levelt Sengers, "The under-representation of women and minorities in STEM fields – a national and international concern," Longworth House Office Building, Washington DC, September 26 2006. On invitation by the Society of Women Engineers.
8. Manju Sharma and Johanna Levelt Sengers "Women for science, a leadership role for Academies," InterAcademy Panel, December 3, 2006, Alexandria, Egypt (Invited).
9. Johanna Levelt Sengers, "The world's science academies address the under- representation of women," American Society of Mathematics Annual Meeting, New Orleans, January 5, 2007 (Invited).
10. Johanna Levelt Sengers, "Women for Science - a Leadership Role for Academies," Women's breakfast, April 2007, National Academy of Sciences.
11. Johanna Levelt Sengers, "Women in Science and Engineering in the USA - Problems, Programs, Progress," Real Sociedad Española de Física, Grupo "Mujeres en Física de la RESF," September 12, 2007, Granada, Spain (Invited).
12. Johanna Levelt Sengers and Manju Sharma, "Women for Science – a Leadership Role for Academies, Mexican Academy, April 19, 2009.

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I gave the following presentations in my capacity of co-Chair of the "Women for Science" Working Group (WfS-WG) of the InterAmerican Network of Academies of Sciences (IANAS), which group was established at the Bolivian Academy, February 2010. I served through 2013. The thoughts expressed are my own. Other presentations have been posted on the WfS-WG web page of the IANAS website: [www.ianas.org](http://www.ianas.org).

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1. "Women for Science: Actions for Science Academies," IANAS Symposium, Mexico, April 19, 2009.
  2. "Two brief updates: IANAS Symposium and CWSEM progress". Women's Breakfast, National Academy of Sciences, April 26, 2009.
  3. "IANAS WfS-WG Biography Project," Foreign Associates Luncheon, National Academy of Science Annual Meeting, March 4, 2013.
  4. Book presentation "Women Scientists in the Americas; their Inspiring Stories," National Academy of Sciences, April 17, 2013.