

Donald Lucas, Ph. D.

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Education:

UC, Berkeley Ph.D. 1977 Chemistry
Illinois Institute of Technology B.S. 1972 Chemistry (with Honors)

Professional Experience

Management

2007- 2011 Deputy Director, Environmental, Health and Safety Division, LBNL
2005- 2007 Assistant Division Director, Environmental Energy Technologies Division
 Member, EET Division Council
2000- 2009 Safety Review Committee, LBNL (Chair 2005 – 2009)
2003- 2007 Program Director, High Performance Commercial Building Systems
2002- 2004 Deputy Director, Berkeley Superfund Basic Research Program
2000- 2007 Chair, Safety Committee, Environmental Energy Technologies Division
2003 -2005 Chair, Laser Safety Committee, LBNL
2000- 2005 Safety Manager, Environmental Energy Technologies Division

Research and Teaching

1980- present Scientist, Lawrence Berkeley National Laboratory (Environmental Energy
 Technologies Division – rehired retiree)
1982 – present Professional Researcher and Visiting Scholar, University of California, Berkeley
 (Environmental Health Sciences, Mechanical Engineering)
1994 - present Affiliate, Energy and Resources Group, UC Berkeley
2011 – 2014 Visiting Lecturer, East China University of Science and Technology, Shanghai,
 China
1988, 1990 Lecturer, University of California, Berkeley (Chemistry) Instructor, University of
 California, Berkeley (Mechanical Engineering) Visiting Professor, Indiana University
 (Chemistry) Research Associate, Indiana University (Chemistry) Teaching and
 Research Assistant, University of California, Berkeley (Chemistry)

Recent Committees and Activities

Finance Committee Chair, The Combustion Institute
35th International Symposium on Combustion, Local Organizing Committee Member
External Advisor, LSU Superfund Program
California AB 127 Working Group
LBNL HSS Steering Committee
LBNL DOE 142.3 Implementation Plan Project Director
LBNL EHS Training Group Head
Idaho National Laboratory Review Committee for Laser Safety (2006)
LBNL Ergonomics Pilot Program Committee (2003-2005)
Scientific Peer Reviewer, California EPA

Multimedia Working Group, California EPA
DOE Laser Program Review Panel (2003)
Executive Board and Treasurer of the US Sections of the Combustion Institute
Executive Committee and Treasurer, Western States Section/Combustion Institute
International Congress on Toxic Combustion Byproducts: Executive Committee and Awards
Committee Chair
Organizing Committee, Quad Universities Superfund – EPA Conference
Publications Committee, The Combustion Institute
Organizing Committee, 2nd Joint Meeting of the U.S. Sections of the Combustion Institute
EPA Peer Review Panels Reviewer
Health Effects Institute Advisory Panel
Technical Advisor, California Institute for Energy Efficiency
Member: American Chemical Society, Sigma Xi, The Combustion Institute
Volunteer for various LBNL CSEE programs.

Service as Reviewer:

U.S. DOE
Environmental Science and Technology
Combustion Science and Technology
California EPA
International Journal of Chemical Kinetics
National Science Foundation
California Air Resources Board
Combustion and Flame
Applied Optics
U.S. EPA
Health Effects Institute
The Combustion Institute
Applied Spectroscopy
Universitywide Energy Research Group
California Energy Commission
California Institute for Energy Efficiency
Journal of Physical Chemistry

Service as Consultant:

ChevronTexaco
Texaco
Western Independent Refiners Association
UC Riverside
WESTAR
Aarons Air Services
Expert witness in legal proceedings
Green Science Policy Institute

Extramural Funding:

U.S. EPA
DOE
California Air Resources Board
NIEHS
UERG
Western States Petroleum Association

Awards

Dr. Donald Lucas and Dr. Catherine P. Koshland shared the Adel Sarofim Award in May, 2013, presented by the International Congress on Toxic Combustion Byproducts and their Health Effects.

Invited Talks (2003 – present):

Lucas, D. (2014). The complex role of chlorinated hydrocarbons in combustion. ACS National Meeting, Dallas, TX, Mar. 18, 2014.

Lucas, D (2011) Measuring combustion products: Plumbing parts to engineered nanoparticles. LSU Chemistry Dept., Baton Rouge, LA, Feb. 2, 2011.

Lucas, D (2011). Toxic combustion emissions: Measuring them and determining their health effects. East China University of Science & Technology (ECUST), June 2, 2011.

Lucas, D (2011) Combustion and health effects: Basic research to public policy. Chinese University of Hong Kong, Hong Kong, China, June 13, 2011.

Lucas, D (2011) Nanomaterials as environmental sensors. EPA Region 9, Sept. 21, 2011, San Francisco, CA

Lucas, D (2011) Nanomaterials as environmental sensors. SRP/EPA Region 9 seminar series. Oct. 3, 2011 (web presentation)

UC Riverside, Department of Mechanical Engineering, Riverside, CA Nov., 2009.

Renewable Energy Sources – New Fuels, New Issues. California Industrial Hygiene Council, San Diego, CA, Dec., 2008; San Francisco, CA, Dec., 2009

Berkeley Nanotechnology Forum, UC Berkeley, CA, April, 2008.

Environmental Health, Energy, and Transportation: Bringing Health to the Fuel Mixture. Institute of Medicine, The National Academies, Washington, DC, Dec., 2007.

Nanoparticles from Combustion Sources and their Toxicity. 38th Environmental Mutagen Society, Atlanta, Ga. Oct., 2007.

“Non-Burning Issues” of Combustion Fundamentals. 5th Meeting of the U.S. Sections of the Combustion Institute, San Diego, CA, Mar., 2007.

Moving Forward in Partnership to Protect Health. Superfund Basic Research Program, Berkeley, CA, May 5, 2006.

ERG100 Lectures, 2004, 2005, 2008 UC Berkeley

Excimer Laser Fragmentation Fluorescence Spectroscopy. Gordon Research Conference on Laser Diagnostics in Combustion, Oxford, England, August, 2003.

Patents

James JZ, Crosby, JS, Lucas D, Koshland CP. Localized Surface Plasmon Resonance Mercury Detection System and Methods. U.S. Application Nos. 61/585,542 and 61/587,546. January 10, 2013 (filed). The International Patent Application has been accorded serial number PCT/US2013/021066.

Selected Publications of D. Lucas

1. J. R. Kanofsky, D. Lucas, and D. Gutman (1973). Direct Identification of Free-Radical Products of Oxygen Atoms with Olefins, using High-Intensity Molecular Beams. 14th Symp. (Int.) on Combustion, 285.
2. J. R. Kanofsky, D. Lucas, and D. Gutman (1974). Direct Identification of the Reactive Channels with the Reactions of Oxygen Atoms and Hydroxyl Radicals with Acetylene and Methylacetylene. *J. Phys. Chem.* **78**, 311.
3. D. Lucas (1977). Fast Reactions, Free Radicals, and Molecular Complexes Studied by the Matrix Isolation Technique. Ph.D. Thesis, University of California, Berkeley.

4. L. J. Allamandola, D. Lucas, and G. C. Pimentel (1978). Synchronized Flash Photolysis and Pulse Deposition in Matrix Isolation Experiments. *Rev. Sci. Instrum.* **49** (7), 913.
5. D. Lucas and G. C. Pimentel (1979). Reaction Between NO and O₃ in Solid Nitrogen. *J. Phys. Chem.* **83** (18), 2311.
6. D. Lucas and G. E. Ewing (1981). Spontaneous Desorption of Vibrationally Excited Molecules Physically Adsorbed on Surfaces. *Chem. Phys.* **58**, 385.
7. D. Lucas and N. J. Brown (1982). Characterization of the Selective Reduction of NO by NH₃ Addition. *Combust. Flame* **47**, 219.
8. D. Lucas, L. J. Allamandola, and G. C. Pimentel (1982). Matrix Isolation Infrared Spectra of Hydrogen Halide and Halogen Complexes with Nitrosyl Halides. *Croat. Chem. Acta* **55**, 121.
9. D. Lucas, A. S. Newton, and N. J. Brown (1982). The Measurement of Ammonia in Lean Combustion Exhausts. *Combust. Sci. Technol.* **29**, 309.
10. D. Lucas and N. J. Brown (1983). The Influence of Thiophene on the Selective Reduction of NO by NH₃. *Combust. Flame* **49**, 283.
11. D. Lucas, R. Peterson, F. C. Hurlbut, and A. K. Oppenheim (1984). Effects of Transient Combustion on Molecular Beam Sampling. *J. Phys. Chem.* **88**, 4548.
12. N. J. Brown, E. Cuellar, and D. Lucas (1984). Measurement of Nitrogenous and Sulfurous Combustion Emissions. *Advanced Technologies in Synthetic Fuel Analysis*. Wright, C. W., Weimer, W. C., and Felix, W. D., eds. Tech. Inform. Center, Oak Ridge, TN.
13. D. Lucas and N. J. Brown (1984). Optical Measurement of SO₂ in Combustion Environments. *Analytical Spectroscopy* **19**, 361. Lyon, W. S., ed. Elsevier, Amsterdam.
14. R. Peterson, D. Lucas, F. C. Hurlbut, and A. K. Oppenheim (1984). Molecular Beam Overrun in Sampling Transient Combustion Processes. *J. Phys. Chem.* **88**, 4746.
15. F. C. Hurlbut, A. K. Oppenheim, D. Lucas, and R. Peterson (1985). Molecular Beam Mass Analysis of Transient Combustion Events. 14th Symp. (Int.) on Rarefied Gas Dynamics (Proc.), 231.
16. D. Lucas, R. Peterson, N. J. Brown, and A. K. Oppenheim (1985). Molecular Beam Mass Spectrometer Sampling of Flash Ignited Combustion. 20th Symposium (Int.) on Combustion, 1205.
17. D. Lucas, M. Morrow, and N. J. Brown (1985). Measurement of Sulfur Dioxide in the Post-Combustion Environment. 20th Symposium (Int.) on Combustion, 1313.
18. D. Lupo and D. Lucas (1986). Deactivation Of CO(V = 1) By N-H₂ And N-D₂ In Liquid Ar: A Comparison With Energy Transfer In The Gas Phase. *J. Phys. Chem.* **90**, 5105-8.
19. R. Peterson, M. Ikegawa, and D. Lucas (1986). Direct Sampling Electron Impact Fluorimetry: A Technique for Measuring Combustion Species. *Combust. Flame.* **64**, 219.
20. D. Lucas, C. F. Edwards, J. A. Cavolowsky, and A. K. Oppenheim (1986). Pulsed Plasma Jet Igniters: Molecular Beam Measurements. *Combust. Sci. Tech.* **50**, 27.
21. D. Lucas, D. Dunn-Rankin, K. Hom, and N. J. Brown (1987). Ignition by Excimer Laser Photolysis of Ozone. *Combust. Flame.* **69**, 171.
22. J. A. Cavolowsky, P. R. Breber, A. K. Oppenheim, and D. Lucas (1987). Pulsed Plasma Jet Igniters: Species Measurements in Nitrogen and Air. *Combust. Sci. Tech.* **54**, 319.
23. D. Lucas, J. A. Cavolowsky, P. R. Breber, and A. K. Oppenheim. (1989). Pulsed Plasma Jet Igniters: Species Measurements in Methane Combustion. 22nd Symposium (Int.) on Combustion, 1661.
24. M. J. Hall, D. Lucas, and C. P. Koshland (1991). Measuring Chlorinated Hydrocarbons in Combustion Using FTIR Spectroscopy. *Environ. Sci. Technol.* **25**, 260.
25. E. F. Fisher, M. J. Hall, C. P. Koshland, and D. Lucas (1991). Thermal Destruction of C₂H₅Cl. 23rd Symp. (Int.) on Combustion, 895.
26. C. P. Koshland, E. M. Fisher, D. Lucas, and R. F. Sawyer (1991). Thermal Destruction of Some Chlorinated C₁ and C₂ Hydrocarbons. *Combust. Sci. Technol.* **82**,
27. D. Lucas, C. McEnally, C. P. Koshland, and R. F. Sawyer (1992). Detection of Chlorinated Hydrocarbons Using Photofragmentation. *Combust. Sci. Technol.* **85**, 271.

28. S. Lee, C. P. Koshland, and D. Lucas (1992). Enhanced Destruction of CH₃Cl in Post-Flame Combustion Gases. *Combust. Flame* **92**, 106.
29. C. P. Koshland, D. Lucas, B. S. Higgins, and R. F. Sawyer (1992). Detection of Chlorinated Hydrocarbons in Combustion Using In-Situ FTIR Spectroscopy. 24th Symp. (Int.) on Combust., 871.
30. M. J. Thomson, B. S. Higgins, D. Lucas, C. P. Koshland, and R. F. Sawyer (1994). The Mechanism of Phosgene Formation from 1,1,1-Trichloroethane Oxidation. *Combust. Flame* **98**, 350.
31. C. S. McEnally, D. Lucas, C. P. Koshland, and R. F. Sawyer (1994). Sensitive in situ Detection of Chlorinated Hydrocarbons in Gas Mixtures. *Applied Optics* **33**, 3977.
32. M. J. Thomson, D. Lucas, C. P. Koshland, R. F. Sawyer, Y. W., and J. W. Bozzelli (1994). An Experimental and Numerical Study of the High Temperature Oxidation of 1,1,1-Trichloroethane. *Combust. Flame* **98**, 155.
33. C. S. McEnally, D. Lucas, C. P. Koshland, and R. F. Sawyer (1994). In Situ Detection of Hazardous Waste. 25th Symp. (Int.) on Combust., 325.
34. S. G. Buckley, D. Lucas, C. P. Koshland, and R. F. Sawyer (1996). Metals Emissions Monitoring Using Excimer Laser Fragmentation Fluorescence Spectroscopy. *Combust. Sci. Technol.* **118**, 169.
35. W. Vitovec, C. P. Koshland, D. Lucas, and R. F. Sawyer (1996). The Destruction of Methylene Chloride in Lean Post-Flame Conditions. *Combust. Sci. Technol.* **116-117**, 153.
36. M. J. Thomson, D. Lucas, C. P. Koshland, and R. F. Sawyer (1997). Reducing Hazardous Waste Incinerator Emissions Through Blending. *Combust. Sci. Technol* **114-115**, 68.
37. M. J. Thomson, C. P. Koshland, and D. Lucas (1997) A Health-Based Decision-Making Tool for Waste Destruction. *Environ. Engineering Sci.* **14**, 163-174.
38. S. G. Buckley, D. Lucas, C. P. Koshland, and R. F. Sawyer (1998). A Real-Time Monitor for Toxic Metal Emissions in Combustion. 26th Symp. (Int.) on Combustion, 2455.
39. H. L. Clack, C.P. Koshland, D. Lucas, and R.F. Sawyer (1998). Observations of Spray Density Effects on Multicomponent Chlorinated Hydrocarbon Vaporization and Thermal Destruction. Twenty-Seventh Symposium (International) on Combustion, 1309-1315.
40. C. P. Koshland, R. F. Sawyer, D. Lucas, and P. Franklin (1998). Evaluation of Automotive MTBE Combustion Byproducts. Report to the Governor and Legislature of the State of California as Sponsored by SB521.
41. H. L. Clack, C.P. Koshland, D. Lucas, and R.F. Sawyer (1999). Post-Flame Byproduct Formation from Size- and Density-Controlled 1,1,1-Trichloroethane Sprays. *Environ. Engineer. Sci.* **16**, 3, 177-185.
42. W. Vitovec, B. S. Higgins, D. Lucas, C. P. Koshland, and R. F. Sawyer (1999). Post-Flame Oxidation of CHCl₃ and C₂Cl₄. *Combust. Sci. Technol.*
43. L.H. Espinoza, D. Lucas, and D. Littlejohn (1999). Characterization of Hazardous Aqueous Samples by Near-IR Spectroscopy *Appl. Spectros.* **53**, 92-102.
44. L.H. Espinoza, D. Lucas, and D. Littlejohn (1999). Analysis of Total Organic Carbon in Aqueous Solutions. *Appl. Spectros.* **53**, 103-107.
45. S.C. Lee, C. P. Koshland, D. Lucas, and R. F. Sawyer (1999). Effect of Postflame Injection of Fuel on the Destruction of Chlorinated Hydrocarbons and the Oxidation of NO. *Combust. Flame* **119**:154-160.
46. S. G. Buckley, C. J. Damm, W. M. Vitovec, L. A. Sgro, R. F. Sawyer, C. P. Koshland, and D. Lucas (1999). Ammonia Detection and Monitoring with Photofragmentation Fluorescence. *Appl. Optics* **37**, 1-10.
47. D. Littlejohn, D. Lucas, and L. Han. Bent Silica Fiber Evanescent Absorption Sensors (1999). *Appl. Spectros.* **53**, 7, 845-849
48. D. Littlejohn and D. Lucas (1999). Vapor Pressure Measurement System for Heavy Crude Oils. *JAWMA* **49**, 1103-1109.

49. H. L. Clack, C. P. Koshland, D. Lucas, and R. F. Sawyer (1999). Postflame By-Product Formation from Size- and Density-Controlled 1,1,1-Trichloroethane Sprays *Env. Engineer. Sci.* **16**: (3) 177-185.
50. P. Berdahl, L. H. Espinoza, D. Littlejohn, D. Lucas, and D. L. Perry. (2000) Near-Infrared Turbidity of B-FeOOH Particle Suspensions. *Appl. Spectros.* **54**, 262.
51. L. A. Sgro, C. P. Koshland, D. Lucas, and R. F. Sawyer (2000). Post-Flame Reaction Chemistry of Dichloromethane: Variations in Equivalence Ratio and Temperature. *Combustion And Flame*, **120**(N4):492-503.
52. H. L. Clack, C. P. Koshland, D. Lucas, and R. F. Sawyer (2000) On the Vaporization and Thermal Oxidation of Chlorinated Hydrocarbons/Alcohol Sprays. *Proceedings of the Combustion Institute* **28**, 2683.
53. P. M. Franklin, C. P. Koshland, D. Lucas, and R. S. Sawyer. (2000) Clearing the Air: Using Scientific Information to Regulate Reformulated. *Environmental Science & Technology*, **34**, 18, 3857-3863.
54. L. Han, D. Lucas, D. Littlejohn, and S. Kyauk (2000). NIR Fiber Optic Method with Multivariate Calibration Analysis for Determination of Inorganic Compounds in Aqueous Solutions. *Applied Spectros.* **54**, 10, 1447-1452.
55. B. S. Higgins, M. J. Thomson, D. Lucas, C. P. Koshland, and R.F. Sawyer (2001) An Experimental and Numerical Study of the Thermal Oxidation of Chlorobenzene. *Chemosphere*, **42**, 5-7,703-717.
56. C. J. Damm, D. Lucas, R. F. Sawyer, and C. P. Koshland (2001). Excimer Laser Fragmentation Fluorescence Spectroscopy as a Method for Monitoring Ammonium Nitrate and Ammonium Sulfate Particles. *Chemosphere*, **42**, 5-7, 655-661.
57. P. M. Franklin, C. P. Koshland, D. Lucas, and R. S. Sawyer (2001). Evaluation of Combustion Byproducts of MTBE as a Component of Reformulated Gasoline. *Chemosphere*, **42**: 5-7, 861-872.
58. C. J. Damm, D. Lucas, R. F. Sawyer, and C. P. Koshland (2001). Real-time Measurement of Combustion Generated Particles with Photofragmentation-Fluorescence. *Appl. Spectros.* **55**: 11, 1478-1482.
59. S. G. Buckley, R. F. Sawyer, C. P. Koshland, and D. Lucas (2002). Measurements of Lead Vapor and Particulate in Flames and Post-flame Gases. *Combust. Flame* **128**:435-446.
60. C. B. Stipe, B. S. Higgins, D. Lucas, R. F. Sawyer, and C. P. Koshland (2002) Soot Detection Using Excimer Laser Fragmentation Fluorescence Spectroscopy. *Proceedings of the Combustion Institute* **29**, 2759-2766.
61. C. J. Damm, D. Lucas, R. F. Sawyer, and C. P. Koshland (2002). Characterization of Diesel Particulate Matter with Excimer Laser Fragmentation Fluorescence Spectroscopy. *Proceedings of the Combustion Institute* **29**, 2767-2774.
62. M. J. Papac, D. Dunn-Rankin, C. B. Stipe, and D. Lucas (2002) N₂ CARS Thermometry and O₂ LIF Concentration Measurements. *Combust. Flame* **133**, 3, 241-254.
63. D. Lucas and D. Littlejohn (2003). Tank Atmosphere Perturbation (TAP): A Procedure for Assessing Emissions from Oil Storage Tanks. *JAWMA*, **53**, 360-365.
64. H. L. Clack, C. P. Koshland, D. Lucas, and R. F. Sawyer (2004). Development of an Airblast Atomizer for Independent Control of Droplet Size and Spray Density. *Atomization and Sprays* **14**, 191-210.
65. C. B. Stipe, J. H. Choi, D. Lucas, C. P. Koshland, and R. F. Sawyer (2004). Nanoparticle Production by UV Irradiation of Combustion Generated Soot Particles. *J. Nanoparticle Research.* **6**, 467-477.
66. J. H. Choi, C. J. Damm, N. J. O'Donovan, R. F. Sawyer, C. P. Koshland, and D. Lucas (2005). Detection of Lead in Soil with Excimer Laser Fragmentation Fluorescence Spectroscopy (ELFFS). *Applied Spectroscopy.* **59**, 258-261.
67. C. B. Stipe, B. S. Higgins, D. Lucas, C. P. Koshland, and R. F. Sawyer (2005). An Inverted Co-Flow Diffusion Flame for Producing Soot. *Rev. Sci. Instrum.* **76**, 023908.

68. C. B. Stipe, B. S. Higgins, D. Lucas, C. P. Koshland, and R. F. Sawyer (2005). Soot Particle Disintegration and Detection using Two Laser ELFFS. *Applied Optics* **44**, 31, 6537-6544.
69. J. H. Choi, C. P. Koshland, R. F. Sawyer, and D. Lucas (2005). Measurement of Polystyrene Nanospheres Using Excimer Laser Fragmentation Fluorescence Spectroscopy. *Appl. Spectros.* **59**, 10, 1203-1208.
70. J. H. Choi, C. B. Stipe, C. P. Koshland, R. F. Sawyer, and D. Lucas (2005). NaCl Particle Interaction with 193 nm Light: Ultraviolet Photofragmentation and Nanoparticle Production. *J. Appl. Phys.* **97**, 124314.
71. J. H. Choi, D. Lucas, C. P. Koshland, and R. F. Sawyer (2005). Photochemical Interaction of Polystyrene Nanospheres with 193 nm Pulsed Laser Light. *J. Phys. Chem. B.* **109** (50): 23905-23910.
72. J. H. Choi, C. B. Stipe, C. P. Koshland, and D. Lucas (2006). In Situ, Real-time Detection of Soot Particles Coated with NaCl using 193 nm Light. *Appl. Phys. B.* **84** (3): 385-388.
73. J. H. Choi, D. Lucas, and C. P. Koshland (2007). Laser Ablation of Nanoscale Particles with UV Light. *J. Phys: Conference Series* **59** (2007) 54-59.
74. A. Holder, D. Lucas, R. Goth-Goldstein, and C. P. Koshland (2007). Inflammatory response of lung cells exposed to whole, filtered, and hydrocarbon denuded diesel exhaust. *Chemosphere* **70** (1) 13-19.
75. D. Lucas, A. Holder, C. P. Koshland, et al. (2007). New fuels, new particles, new risks? *Environ. Mol. Mutagenesis* **48**, 7, 532-532
76. A. Holder, D. Lucas, R. Goth-Goldstein, and C. P. Koshland (2008). Cellular response to diesel exhaust particles strongly depends on the exposure method. *Tox. Sci.* **103**, 108-115.
77. L.W. Tian, D. Lucas, S.L. Fischer, et al. (2008) Particle and gas emissions from a simulated coal-burning household fire pit. *Environ. Sci. Tech.* **42**, 7, 2503-2508.
78. C. R. Keenan, R. Goth-Goldstein, D. Lucas, and D. L. Sedlak (2009). Oxidative Stress Induced by Zero-Valent Iron Nanoparticles and Fe(II) in Human Bronchial Epithelial Cells. *Environ. Sci. Tech.* **2009** *43* (12), 4555-4560.
79. Tian LW, Koshland CP, Yano J, Yachandra VK, Yu ITS, Lee, SC, and Lucas D (2010) Carbon Centered Free radicals in Particulate Matter Emissions from Wood and Coal Combustion. *Energy Fuels* **23** (5) 2523-2526, doi: 10.1021/ef8010096.
80. Shaw, SD, Blum, A, Weber, R, Kannan, K, Rich, D, Lucas, D, Koshland, CP, Dobraca, D, Hanson, S, and Birnbaum, LS (2010) Halogenated flame Retardants: Do Fire Safety Benefits Justify the Risks? *Rev Environ Health* **25** (4). PMID: 21268442
81. DiGangi J, Blum A, Bergman Å, de Wit CA, Lucas D, et al. 2010 San Antonio Statement on Brominated and Chlorinated Flame Retardants. *Environ Health Perspect* **118**(12): doi:10.1289/ehp.1003089
82. Holder AL, Carter, BJ, Goth-Goldstein, Lucas D, and Koshland CP (2012). Increased Cytotoxicity of Oxidized Flame Soot. *Atmos. Pollution Res.* **3** (1), doi: 10.5094/APR.2012.001
83. James JZ, Lucas D, Koshland CP (2012). Gold nanoparticle films as sensitive and reusable elemental mercury sensors. *Environ Sci Technol.* **46** (17), 9557-62. doi: 10.1021/es3005656. PMID: 22871115
84. Crosby JS, Lucas D, Koshland CP (2013) Fiber optic based evanescent wave sensor for the detection of elemental mercury utilizing gold nanorods. *Sensor and Actuators B: Chemical: Volume 181*, May 2013, Pages 938–942 <http://dx.doi.org/10.1016/j.snb.2013.02.037>
85. James, JZ, Lucas D, Koshland CP (2013). Mercury vapor interaction with individual gold nanorods. *Analyst.* **138** (8), 2323-8. doi:10.1039/c3an36841f. PMID:23446550