

CURRICULUM VITAE

CONSTANTINOS SIOUTAS

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DATE OF BIRTH: June 23, 1962

WORK ADDRESS: Department of Civil Engineering
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EDUCATION

1994	Environmental Science and Engineering	Sc.D.	Harvard University
1989	Aerospace Engineering	M.S.	University of Minnesota
1988	Mechanical Engineering	M.S.	University of Minnesota
1986	Mechanical Engineering	B.S.	Aristotle University of Thessaloniki, Greece

EXPERIENCE

2007 - Present	Fred Champion Professor of Civil and Environmental Engineering, University of Southern California
2004- 2006	Professor of Civil and Environmental Engineering, University of Southern California
2000-2003	Associate Professor of Civil Engineering, University of Southern California
1999-present	Co- Director, Southern California Particle Center and Supersite
1997-1999	Assistant Professor of Civil Engineering, University of Southern California

1995-1997	Assistant Professor of Aerosol Science, Harvard University
1994-1995	Instructor/Research Associate, Harvard University
1992-1994	Doctoral Candidate/Aerosol Engineer, Harvard University
1989-1992	Advanced Product Development Engineer, 3M Company
1986-1989	Research Assistant, Department of Mechanical Engineering University of Minnesota

DISTINCTIONS, HONORS, AND AWARDS

2014	David Sinclair Award, American Association for Aerosol Research
2013	Senior Faculty Research Award, University of Southern California
2013 - Present	Executive Board of Trustees, Aristotle University of Thessaloniki, Greece
2012	Top cited article 2011-2012; <i>Atmospheric Environment</i>
2011	Haagen-Smit Prize winner for best publication in <i>Atmospheric Environment</i>
2011	2010 Scientific and Technological Achievement Award, <u>US EPA</u>
2008 - 2016	Editorial Advisory Board, <i>Atmospheric Environment</i>
2010 – 2012	Associate Editor, <i>Science of Total Environment</i>
2008- 2011	Co-Editor-in-Chief, <i>Aerosol and Air Quality Research (AAQR)</i>
2007- Present	Fred Champion Professorship in Civil and Environmental Engineering, USC
2006	Excellence in Review Award, <i>Environmental Science & Technology</i>
2005- Present	Named among Top 1% Authors Worldwide in Engineering for the period 1997-present by the Institute of Scientific Information (http://portal.isiknowledge.com/portal.cgi?DestApp=ESI&Func=Frame).
2004 - 2006	Member, National Research Council, Committee on Models for Testing Interventions Against Aerosolized Bioterrorism Agents
2001- Present	Member of the Air Quality Advisory Committee of the State of California

	on Particulate Matter Standards
2002- Present	Technical Advisory Board, South Coast Air Quality Management District
2000	Junior Faculty Research Award, University of Southern California
1991	3M Circle of Technical Excellence
1986-1987	Fulbright Foundation Fellow
1982-1986	National (Greek) Scholarship Foundation (IKY) Honorary Scholarship for outstanding performance (1981-1985)
1981	Honorary Prize, National (Greek) Scholarship Foundation (IKY) for ranking 1 st in Mechanical Engineering admission exam

PROFESSIONAL SOCIETIES

1985-Present	Society of Mechanical Engineers, Greece
1993-Present	American Association for Aerosol Research (AAAR)
1996-Present	American Conference of Governmental Industrial Hygienists
2012-Present	American Association for the Advancement of Science (AAAS)

REVIEW RESPONSIBILITIES

Journals:

Reviewer for the following journals: *Aerosol Science and Technology*, *Environmental Science and Technology* (*received the ES&T's 2006 Excellence in Review Award*), *Environmental Health Perspectives*, *Journal of Aerosol Science*, *Journal of Air and Waste Management Association*, *Journal of the American Industrial Hygiene Association*, *Journal of Geophysical Research*, *Atmospheric Chemistry and Physics*, *Indoor Air*, and *Atmospheric Environment*.

Granting Agencies:

Reviewer for the following granting agencies: National Research Council, National Academy of Sciences, United States Environmental Protection Agency, Health Effects Institute, Austrian

Science Fund (FWF), University of California Campus-Laboratory Collaborations (CLC) Program, U.S. Department of Defense (Strategic Environmental Research and Development Program, SERPA), Natural Environmental Research Council, NIOSH, National Science Foundation (NSF)

PATENTS

1. Sioutas, C. and Schultz, R.K. Aerosol Actuator; Patent issued to 3M, U.S. Patent No: 5,115,803, 1990.
2. Sioutas, C. Aerosol Spray Diffuser; Patent issued to 3M, U.S. Patent No: 5,533,498, 1993.
3. Burton, R.M., Koutrakis, P. and Sioutas, C. Virtual impactor for removing particles from an airstream and methods for using it; Patent issued jointly by Harvard University and U.S. Environmental Protection Agency. U.S. Patent No: 5,425,802, 1994.
4. Koutrakis P., Wang, P.Y., Wolfson, J.M. and Sioutas, C. Continuous monitor to measure particulate matter in gas; Patent issued to Harvard University. U.S. Patent No: 5,571,945, 1995.
5. Schultz, R.K. and Sioutas, C. Aerosol actuator; Patent issued to 3M. U.S Patent Number: 5,899,201, 1996.
6. Burton R.M., Koutrakis P., Sioutas C. Virtual impactor process for removing particles from an air stream. Patent issued to the US EPA and Harvard College. US Patent Number 5,788,741, 1997.
7. Sioutas, C. and Schultz, R.K. Aerosol actuator having a linearly arranged canister receiving cavity, valve stem receptacle, orifice, and deagglomeration chamber; Patent issued to 3M. U.S. Patent No: 5,669,376, 1997.
8. Sioutas, C., Kim, S. and Chang, M.C. Electrostatic enhancement of capture efficiency of metal filters. University of Southern California. U.S. Patent No: 6,585,803, 2002.
9. Koutrakis P., Wang, P.Y., Wolfson, J.M. and Sioutas, C. Methods and apparatus for continuous ambient Particulate Matter (PM) monitoring. Patent issued to Harvard University. U.S. Patent Number: 5,932,795, 1999.
10. Sioutas, C. and Solomon, P. Continuous Coarse Particle Monitor Patent issued to the University of Southern California and the US Environmental Protection. U.S. Patent Number: 6,829,919, 2005.
11. Sioutas, C. Personal Particle Monitor. Patent issued to the University of Southern California Agency U.S. Patent Number: 6,786,105, 2005.

12. Sioutas, C and Solomon P.A. Impactor Inlet. Patent issued to the University of Southern California Agency U.S. Patent Number: 6,990,846, 2006.
13. Sioutas, C. and Fine, P.M. New Compact Aerosol Concentrator for Use in Connection with Low Flow Rate Continuous Aerosol Instrumentation. Patent issued to the University of Southern California Agency U.S. Patent Number: 7,325,465, 2008.

PUBLICATIONS

Refereed Books and Book Chapters:

1. Sioutas, C., and Koutrakis P. (1996). Measurement of Acidic Particles and Gases. In *The Handbook of Environmental Chemistry*, (Editor Otto Hutzinger); pp. 201-232, Springer/Verlag.
2. Sioutas, C. and Koutrakis, P. "Characterization of Particles: Composition and Sources"; in *Particles in Our Air: Concentration and Health Effects*, (Editors Richard C. Wilson and John D. Spengler); pp. 15-40, Harvard University Press, 1996.
3. Sioutas, C. and Koutrakis P. "Development of Small Cutpoint Virtual Impactors and Applications in Air Pollution and Environmental Health" in *Advances in Aerosol Filtration*, Editor Kvetoslav Spurny; CRC Lewis Publishers, pp. 453-470, 1998
4. Sioutas, C. "Measurement and Presentation of Aerosol Size Distributions" in *Air Sampling Instruments, American Conference of Governmental Industrial Hygienists*, Cincinnati, Ohio, 9th edition, pages 135-148, 2001.
5. Singh, M. and Sioutas, C. "Assessment of Exposure to Airborne Particles". In *Airborne Particles and Settled Dust in the Indoor Environment*, WILEY-VCH, Weinheim, Germany, Eds. L. Morawska and T. Salthammer, pages 369-397, 2003.

Peer-Reviewed Journal Publications:

(Asterisk indicates papers in which I am the corresponding author)

Total number of citations according to the ISI Web of Science as of January 2017: 15,607; H-Index: 63 (Google Scholar Citations : 18,167; H-index: 69)

1. Koutrakis, P., Sioutas *, C., Ferguson S.T., and Wolfson, J.M. "Development and evaluation of a glass honeycomb denuder/filter pack system to collect atmospheric gases and particles." *Environmental Science & Technology*, 27, 12:2497-2501, 1993

2. Sioutas*, C., Koutrakis, P., and Wolfson, J.M. "Particle loss in glass honeycomb denuders". *Aerosol Science & Technology*, 21 (2):137-149, 1994.
3. Sioutas*, C., Koutrakis P., and Olson, B.A. "Development of a low cutpoint virtual impactor". *Aerosol Science & Technology*, 21 (3):223-236, 1994.
4. Sioutas*, C., Koutrakis, P., and Burton, R.M. "Development of a low cutpoint slit virtual impactor for sampling ambient fine particles." *Journal of Aerosol Science*, 25(7): 1321-1330, 1994.
5. Sioutas*, C., Koutrakis, P., and Burton, R.M. "A high-volume small cutpoint virtual impactor for separation of atmospheric particulate from gaseous pollutants." *Particulate Science and Technology*, 12(3):207-221, 1994.
6. Sioutas*, C., Koutrakis, P., and Burton, R.M. "A technique to expose animals to concentrated fine ambient aerosols." *Environmental Health Perspectives*, 103:172-177, 1995.
7. Sioutas*, C., Koutrakis, P., Ferguson, S.T., and Burton, R.M. "Development and evaluation of an ambient particle concentrator for inhalation exposure studies." *Inhalation Toxicology*, 7:633-644, 1995.
8. Sioutas*, C., Wang, P.Y., Ferguson, S.T., Koutrakis, P., and Mulik, J.D. "Laboratory and field evaluation of an improved glass honeycomb denuder/filter pack sampler." *Atmospheric Environment*, 30 (6):885-895, 1996.
9. Sioutas*, C. and Koutrakis, P. "Inertial separation of ultrafine particles using a condensational growth/virtual impaction system." *Aerosol Science and Technology*, 25(4): 424-436, 1996.
10. Godleski, J., Sioutas, C., Katler, M., and Koutrakis, P. "Death from inhalation of concentrated ambient air particles in animal models of pulmonary disease." Peer-reviewed *Proceedings of the Second Colloquium on Particulate Air Pollution and Health Effects* (editors; R.F. Phalen and J. Lee), pp. 4136 – 4143, 1996.
11. Allen, G.A., Sioutas, C., Koutrakis, P., Reiss, R., and Wilson, W. "Evaluation of the TEOM method for measurement of ambient particulate mass in urban areas." *Journal of Air and Waste Management Association*, 47:682-689, 1997.
12. Sioutas*, C., Wolfson, M., Ferguson, S.T., Ozkaynak, H. and Koutrakis, P.K. "Inertial collection of fine particles using a high-volume rectangular geometry conventional impactor." *Journal of Aerosol Science*, 6:1015-1028, 1997.
13. Sioutas*, C., Koutrakis, P., Godleski, J., Ferguson, S.T., Kim, C.S. and Burton, R.M.

- “Harvard/EPA ambient fine particle concentrators for human and animal exposures.” *Journal of Aerosol Science*, 28(6):1057-1071, 1997.
14. Goldsmith, C.A., Frevert, C., Imrich, A., Sioutas, C. and Kobzik, L. “Alveolar macrophage interaction with air pollution particulates.” *Environmental Health Perspectives*, 105:1191-1195, 1997
 15. Sioutas*, C., Koutrakis, P., Wang, P.Y, Babich, P., and Wolfson, J.M. “Experimental investigation of pressure drop with particle loading in Nuclepore filters.” *Aerosol Science and Technology*, 30:71-83, 1999
 16. Sioutas*, C. “A Pilot Study to Characterize Fine Particles in the Environment of an Automotive Manufacturing Facility”. *Applied Occupational and Industrial Hygiene*, 14:1-9, 1999.
 17. Sioutas*, C., Abt., E., Wolfson, J.M., Koutrakis, P. “Effect of particle size on mass concentration measurement by the Scanning Mobility Particle Sizer and the Aerodynamic Particle Sizer.” *Aerosol Science and Technology*, 30:84-92, 1999.
 18. Kidwell, C.B., Ondov, J.M., Sioutas C. and Koutrakis, P. “Ambient aerosol concentration by condensation and virtual inaction for collection and chemical analysis”. *Journal of Aerosol Science*, 29: 1039-1042, 1998.
 19. Sioutas*, C., Kim, S., and Chang, M. “Development and evaluation of a prototype ultrafine particle concentrator.” *Journal of Aerosol Science*, 30 (8):1001-1012, 1999.
 20. Sioutas*, C., Chang, M., Kim, S., Ferguson, S.T. and Koutrakis, P. “Design and experimental characterization of a PM₁ and a PM_{2.5} personal sampler.” *Journal of Aerosol Science*, 30(6): 693-707, 1999.
 21. Chang, M., Kim, S and Sioutas*, C. “Experimental studies on particle impaction and bounce; effects of substrate design and material.” *Atmospheric Environment*, 15: 2313-2323, 1999.
 22. Clarke, R.W., Catalano, P., Gazula, G., Sioutas, C., Ferguson, S.T., Koutrakis, P., Godleski, J.J “Inhalation of concentrated ambient particles (CAPS) induces pulmonary alterations in normal and chronic bronchitic rats. “ *Inhalation Toxicology*, 11:101-120, 1999.
 23. Allen, G.A., Sioutas, C., and Koutrakis, P. “Techniques for high-quality ambient coarse particulate mass measurements.” *Journal of Air and Waste Management Association*, 49:133-141, 1999.
 24. Kim, S., Chang, M., and Sioutas*, C* “Electrostatic enhancement of stainless steel fiber

- filters.” *Aerosol Science and Technology*, 32:197-213, 2000
25. Chang, M.C., Sioutas*, C., Kim, S., Gong, H., and Linn, W. “Reduction of nitrate losses from filter and impactor samplers by means of concentration enrichment.” *Atmospheric Environment*, 34:86-98, 2000.
 26. Babich, P., Wang, P.Y. Allen, G.A., Sioutas, C. and Koutrakis, P. “Development and evaluation of a continuous PM_{2.5} ambient mass monitor.” *Aerosol Science and Technology*, 32(4):309-325, 2000
 27. Gong, H. Jr., Sioutas, C., Linn, W.S., Clark, K.W., Terrell, S. L., Terrell, L.T., Anderson, K.R., Kim, S. and Chang, M.C. “A pilot study of controlled human exposures to concentrated ambient fine particles in metropolitan Los Angeles”. *Inhalation Toxicology*, 12(1):107-119, 2000
 28. Kim, S., Chang, M.C. and Sioutas*, C. “A new generation of portable Coarse, Fine and Ultrafine Particle Concentrators for use in inhalation toxicology”. *Inhalation Toxicology*, 12(1):121-137, 2000.
 29. Sioutas*, C., Kim, S., Chang, M.C., Terrell, L. and Gong, H. “Field evaluation of a modified DataRAM Mie scattering monitor for real-time PM_{2.5} mass concentration measurements”. *Atmospheric Environment*, 34(28); 4829-4838, 2000.
 30. Kim, S., Sioutas*, C., Chang, M.C., Gong, H., Linn, W.S. “Factors affecting the stability of the performance of Ambient Fine Particle Concentrators.” *Inhalation Toxicology*, 12(4): 281-298, 2000.
 31. Chang, M.C., Sioutas*, C., Fokkens, P.B and Cassee, F.R. “Field Evaluation of A mobile High- Capacity Particle Size Classifier (HCPSC) for separate collection of coarse, fine and ultrafine particles”. *Journal of Aerosol Science*, 32 (1): 139-156, 2001.
 32. Kim, S., Jaques, P., Chang, M.C., Froines, J.R. and Sioutas* C. “A versatile aerosol concentrator for simultaneous *in vivo* and *in vitro* evaluation of toxic effects of coarse, fine and ultrafine particles: Part I: Laboratory evaluation”. *Journal of Aerosol Science*, 11: 1281-1297, 2001
 33. Kim, S., Jaques, P., Chang, M.C., Xiong, C., Friedlander, S.K. and Sioutas* C. “A versatile aerosol concentrator for simultaneous *in vivo* and *in vitro* evaluation of toxic effects of coarse, fine and ultrafine particles: Part II: Field evaluation”. *Journal of Aerosol Science*, 11: 1299-1314, 2001
 34. Mermelstein, J., Kim, S. and Sioutas*, C. “Electrostatically enhanced stainless steel filters; effect of filter structure and pore size on particle removal”. *Aerosol Science and Technology*, 36: 1-14, 2002

35. Chang, M.C., Geller, M., Cassee, F.R. and Sioutas*, C. "Development and experimental evaluation of the performance of a coarse particle concentrator for human exposure studies." *Aerosol Science and Technology*, 36:492-501, 2002
36. Geller, M., Chang, M.C., Lipsett, M., Ostro, B. and Sioutas*, C. "Characteristics and indoor/outdoor relationship of coarse and fine particles in the Coachella Valley, California". *Atmospheric Environment*, 36(6): 1099-1110, 2002.
37. Misra, C., Geller, M., Sioutas*, C and Solomon P. "Development and evaluation of a continuous coarse particle monitor". *Journal of Air and Waste Management Association*, 51:1309-1317, 2001.
38. Geller, M.D., Kim, S. Misra, C., Sioutas*, C., Olson, B.A and Marple, V.A. "Methodology for measuring size-dependent chemical composition of ultrafine particles" *Aerosol Science and Technology*, 36(6): 748-763, 2002
39. Misra, C., Kim S., Shen S. and Sioutas* C. "Design and evaluation of a high-flow rate, very low pressure drop impactor for separation and collection of fine from ultrafine particles". *Journal of Aerosol Science*, 33(5): 735-752, 2002
40. Li, N., Kim, S., Wang, M., Froines, J.R., Sioutas, C. and Nel, A. "Use of a Stratified Oxidative Stress Model to Study the Biological Effects of Ambient Concentrated and Diesel Exhaust Particulate Matter". *Inhalation Toxicology*, 14(5): 459-486, 2002
41. Becker, S., Soukup, J.M. Fokkens, P.H.B., Sioutas, C. and Cassee, F.R. Functional alterations in human alveolar macrophages following exposure to ultrafine, fine and coarse urban air pollution particles. *Experimental Lung Research*, 29 (1): 29-44 2003
42. Zhu, Y., Hinds, W.C., Kim, S and Sioutas*, C. "Concentration and Size Distribution of Ultrafine Particles near a Major Highway". *Journal of Air and Waste Management Association*, 52:1032-1042, 2002
43. Singh, M., Jaques, P. and Sioutas*, C. "Particle-bound metals in source and receptor sites of the Los Angeles Basin". *Atmospheric Environment*, 36(10): 1675-168, 2002
44. Kim, S., Shi, S., Zhu, Y., Hinds, W.C., and Sioutas*, C. "Size Distribution, Diurnal and Seasonal Trends of Ultrafine Particles in Source and Receptor Sites of the Los Angeles Basin". *Journal of Air and Waste Management Association*, 52:174-185, 2002
45. Misra, C., Singh, M., Hall, P. and Sioutas*, C. "Development and evaluation of a personal cascade impactor sampler (PCIS)". *Journal of Aerosol Science*, 33(7), 1027-1047, 2002
46. Shen, S., Zhu, Y., Jaques PA and Sioutas* C. "Evaluation of the SMPS-APS system as a

- Continuous Monitor for PM_{2.5} and PM₁₀". *Atmospheric Environment*, 36, 3939-3950, 2002
47. Zhu, Y., Hinds, W.C., Kim, S., Shen, S. and Sioutas*, C. "Study on Ultrafine Particles and other Vehicular Pollutants near a Busy Highway". *Atmospheric Environment*, 36, 4375-4383, 2002.
48. Eiguren-Fernandez A., Miguel A.H, Jaques, P. and Sioutas, C. "Evaluation of a Denuder-MOUDI-PUF Sampling System to Determine the Size Distribution of Semivolatile Polycyclic Aromatic Hydrocarbons in the Atmosphere". *Aerosol Science and Technology*, 37: 201-209, 2003
49. Fine, P.M., Hering, S.V., Jaques P.A. and Sioutas*, C. "Performance Evaluation and Field Use of a Continuous Monitor for Measuring Size-Segregated PM_{2.5} Particulate Nitrate". *Aerosol Science and Technology*, 37: 342-354, 2003
50. Misra, C., Geller, M.D., Solomon, P.A. and Sioutas*, C. "Development of a PM₁₀ Inertial Impactor for Coarse Particle Measurement and Speciation." *Aerosol Science and Technology*, 37:271-282, 2003
51. Zhu, Y., Hinds, W.C., Kim, S., Shen, S. and Sioutas*, C. "Seasonal Trends of Concentration and Size Distributions of Ultrafine Particles Near Major Freeways in Los Angeles". *Aerosol Science and Technology*, 38, 5-13, 2004.
52. Lippmann, M., Frampton, M., Schwartz, J., Dockery, D., Schlesinger, R.B., Koutrakis, P, Froines, J.R., Jack Finkelstein, J., Godleski, J.J., Koenig, J., Larson T., D., Liu, S.D., Oberdörster, D., Peters, A., Sarnat, J., Sioutas, C., Utell M. "The EPA'S PARTICULATE MATTER (PM) Health Effects Research Centers Program : A Mid-Course (2 1/2 year) Report of Status, Progress, and Plans" *Environmental Health Perspectives*, 111 (8): 1074-1092, 2003.
53. Kleinman, M.T., Sioutas, C., Chang, M.C., A.J.F. Boere and Cassee, F.R. "Ambient fine and coarse particle suppression of alveolar macrophage functions". *Toxicology Letters*, 137/3: 151- 158, 2003
54. Gong, H.Jr, Linn, W.S., Sioutas, C., Terrell S.L., Clark, K.W., Anderson K.R and Terrell, L. "Controlled Exposures of Healthy and Asthmatic Volunteers to Concentrated Ambient Fine Particles in Los Angeles". *Inhalation Toxicology*, 15(4), 305-325, 2003
55. Li, N., Sioutas, C., Froines, J.R., Cho, A., Misra, C and Nel, A., "Ultrafine Particulate Pollutants Induce Oxidative Stress and Mitochondrial Damage" *Environmental Health Perspectives*, 111 (4), 455-460, 2003
56. Chakrabarti, B., Singh, M and Sioutas* C. "Development of a Continuous Monitor For

- Measuring the Mass Concentration of Ultrafine PM.” *Aerosol Science and Technology*, 38, 239-252, 2004.
57. Smith K.R., Kim, S., Recendez, J.J., Sioutas*, C. and Kent E. Pinkerton, “Airborne particles of the California Central Valley alter the lungs of healthy adult rats.” *Environmental Health Perspectives*, 111:902-908, 2003.
58. Jaques, P.A., Ambs, J.L. and Sioutas*, C. “Field Evaluation Of The Differential TEOM® Monitor For Continuous PM2.5 Mass Concentrations “. *Aerosol Science and Technology*, 38, 49-59, 2004.
59. Singh, M., Misra, C., and Sioutas, C*. “Field Evaluation of a Particle Monitor for Size-Dependent Measurement of Mass and Chemical Composition of Individual Exposures to PM”. *Atmospheric Environment*, 37(34), 4781-4793, 2003.
60. Misra, C., Fine, P.M., Singh, M. and Sioutas, C*. “Development and Evaluation of an Ultrafine Particle Concentrator Facility for Human Exposures”. *Aerosol Science and Technology*, 38, 27-35, 2004.
61. Fine, P.M., Si, S., Geller, M.G., and Sioutas*, C. “Inferring the Sources of Fine and Ultrafine PM at Downwind Receptor Areas in the Los Angeles Basin Using Multiple Continuous Monitors”. *Aerosol Science and Technology*, 38, 182-195, 2004.
62. Chakrabarti, B., Fine, P.M, Delfino R.J. and Sioutas* C. “Performance Evaluation of an active personal DataRAM PM2.5 mass monitor (Thermo Anderson pDR-1200) designed for continuous personal exposure measurements” *Atmospheric Environment*, 38(20), 3329-3340, 2004.
63. Yu, R.C., Teh, H.W., Sioutas, C. and Froines, J.R. “Quality Control of Semi-Continuous Mobility Size-Fractionated Particle Number Concentration Data”. *Atmospheric Environment*, 38(20), 3341-3348, 2004.
64. Miguel, A.H., Eiguren-Fernandez, A., Jaques, P.A., Mayo, P.R. and Sioutas, C. “Seasonal variation of the particle size distribution of polycyclic aromatic hydrocarbons and of major aerosol species in Claremont, California” *Atmospheric Environment*, 38(20), 3241-3251, 2004.
65. Geller, M.D., Fine, P.M. and Sioutas* C. “The Relationship Between Real-Time and Time-Integrated Fine and Coarse Particle Concentrations at an Urban Site in Los Angeles, CA”. *Journal of Air and Waste Management Association*, 54 (9): 1029-1039 , 2004
66. Gong, H., Jr., Linn, W.S., Terrell, S.L., Clark, K.W., Anderson, K.R., Neil, A., Sioutas, C and Devlin R.B.. “Exposures of Elderly Volunteers With and Without Chronic

- Obstructive Pulmonary Disease to Concentrated Ambient Fine Particulate Pollution”. *Inhalation Toxicology* Volume 16 (11-12), 731 – 744, 2004.
67. Sardar, S.B., Fine P.M., Jaques, P.A and Sioutas*. C. “Seasonal and Spatial Variability of the Size-Resolved Chemical Composition of PM₁₀ in the Los Angeles Basin” *Journal of Geophysical Research*, 110 (D7): Art. No. D07S08, 2005.
68. Gong, H., Jr., Linn, W.S., Terrell, S.L., Clark, K.W., Geller, M.D and Sioutas, C. “Altered Heart Rate Variability In Asthmatic and Healthy Volunteers Exposed to Concentrated Ambient Coarse Particles”. *Inhalation Toxicology*, 16(6), 335-343, 2004.
69. Hering, S.V., Fine, P.M., Sioutas, C, Jaques, P.A., Ambs, J.L., Hogrefe O. and Demerjian, K.L. “Field Assessment of the Dynamics of Particulate Nitrate Vaporization Using Differential TEOM® and Automated Nitrate Monitors ”. *Atmospheric Environment*, 38(31), 5183-5182, 2004.
70. Ozis F., Singh M., Deviny, J. and Sioutas*, C. “Ambient Ultrafine and Fine Particulate Matter Removal by Granular Filter Bed Filters”. *Journal of Air and Waste Management Association*, 54, 935-941, 2004.
71. Fine, P.M., Chakrabarti, B, Krudysz M., Schauer J.J. and Sioutas*, C. “Seasonal, Spatial, and Diurnal Variations of Individual Organic Compound Constituents of Ultrafine and Accumulation Mode PM in the Los Angeles Basin”. *Environmental Science and Technology*, 1296 – 1304, 2004.
72. Sioutas, C., Pandis, S., Allen, D.T. and Solomon, P.A. “Special issue of *Atmospheric Environment* on findings from EPA's particulate matter Supersites program”. *Atmospheric Environment* 38(20), 3101-3106, 2004.
73. Sardar, S.B., Fine P.M., and Sioutas*. C. “The Relationship Between Particle Number and Co-pollutant Concentrations in the Los Angeles Basin” *Journal of Air and Waste Management Association*, 54, 992-1005, 2004
74. Sioutas C*, McMurry P.H., Biswas P., Hinds W.C., and Wilson W.E. “Atmospheric nanoparticles (ultrafine particles)”. *Journal of Nanoparticle Research*, 6 (2-3): 319-324, 2004
75. Campbell A, Becaria A, Kleinman M, Meacher D, Oldham M, Sioutas C, Bondy SC “Particulate matter in polluted air increases inflammatory indices in mouse brain” *Journal of Neuroimmunology*: 154(1-2): 165-169, 2004
76. Campbell A., Oldham M., Becaria A., Bondy S.C., Meacher D., Sioutas C., Misra C., Mendez L.B. and Kleinman M.T. “Particulate Matter in Polluted Air May Increase Biomarkers of Inflammation in Mouse Brain”. *Neurotoxicology*, 26, 133-140, 2005

77. Kleinman M.T. , Sioutas, C., Stram, D., Froines, J.R., Cho, A.K., Chakrabarti, B., Meacher, D., and Oldham M. “Inhalation of concentrated ambient particulate matter near a heavily trafficked road stimulates antigen-induced airway responses in mice”. *Journal of Air and Waste Management Association*, 55:1277–1288, 2005.
78. Zhang, K.M., Wexler, A.S., Zhu, Y., Hinds, W.C. and Sioutas, C. “Evolution of Particle Number Distributions Near Roadways. Part II: The “Road-to-Ambient Process”. *Atmospheric Environment*, 38, 6655-6665, 2004
79. Zhao, Y., Bein, K.J., Wexler, A.S., Misra, C., Fine, P.M. and C. Sioutas*, C. “Using a Particle Concentrator to Increase the Hit Rates of Single Particle Mass Spectrometers”. *Journal of Geophysical Research*, 110 (D7): Art. No. D07S02, 2005.
80. Sardar, S., Fine, M., Mayo, P.R. and Sioutas* , C. “Size Fractionated Chemical Speciation Measurements of Ultrafine Particles in Los Angeles Using the NanoMOUDI”. *Environmental Science and Technology*, 39: 932-944, 2005
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282. Sowlat M.H., Wang, D., Simonetti G., Shafer M.M., Schauer J.J and Sioutas C.* “Development and field evaluation of an online monitor for near-continuous measurement of iron, manganese and chromium in coarse airborne particulate matter (PM)”. *Aerosol Science and Technology*, 50(12):1306-1319 | DOI: 10.1080/02786826.2016.1221051, 2016
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286. Shirmohammadi F. , Hasheminassab S., Saffari A., Sowlat M., Ban-Weiss G. and

- Sioutas C.*” Emission rates of particle number, mass and black carbon by the Los Angeles International Airport (LAX) and its impact on air quality in Los Angeles”. *Atmospheric Environment*, 151:82-93, 2017
287. Karavalakis G., Gysel N., Cocker D., Schmitz D.A., Cho A.K., Sioutas C., Schauer J.J. and Durbin T.D. “Impact of Biodiesel on Regulated and Unregulated Emissions, and Redox and Proinflammatory Properties of PM Emitted from Heavy-Duty Vehicles”. *Science of Total Environment*, in press, January 2017
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289. Woodward NC, Pakbin P, Shirmohammadi F., Haghani A, Saffari A., Cacciottolo M, Sioutas C., Morgan TE, and Finch CE.” Traffic-related air pollution accelerates myelin and neuritic aging changes in a mouse model, with specificity for CA1 neurons. “*Neurobiology of Aging*, in press, January 2017
290. Krapf M, Lisa Künzi L, Allenbach S, Bruns E.A., Gavarini I., El-Haddad I.E., Slowik J.G., Prévôt A.S.H., Drinovec L, Močnik G., Dümbgen L., Salathe M., Baumlin N., Sioutas C., Baltensperger U., Dommen J. and Geiser M. “Responses of normal and diseased human airway epithelia to primary and aged wood combustion particles”. Submitted to *Royal Chemical Society: Environ. Sci.: Processes Impacts*, September 2016
291. Woodward NC, Levine, MC, Shirmohammadi F., Haghani A, Saffari A, Sioutas C, Morgan TE, and Finch CE “Toll-like Receptor 4 in Glial Inflammatory Responses to Air Pollution in Vitro and in Vivo.” Submitted to *Journal of Neuroinflammation*, December 2016
292. Ruprecht A.A, De Marco C., Saffari A., Pozzi P., Mazza R., Veronese C. Angellotti G., Munarini E., Ogliari A.C, Westerdahl D, Hasheminassab S., Schauer J.J., Repace J., Sioutas C. and Boffi R. “Environmental Pollution and Emission Factors from Electronic Cigarettes, Heat-Not-Burn Tobacco Products and Conventional Cigarettes”. Submitted to *Aerosol Science and Technology*, December 2016.
293. Baek K.I., Packard R.G., Saffari A., Ma Z., Lu A., Pieterse A., Yen H., Kaboodrangifaem A., Hsu J.J., Ren B., Sioutas C., Li R. and Hsiai T. “FOXO1/Notch Signaling Modulates Ultrafine Particles-Impaired Vascular Regeneration” Submitted to *Arteriosclerosis, Thrombosis, and Vascular Biology*, December 2016
294. Decesari S., Sowlat M., Hasheminassab S., Sandrini S., Gilardoni S., Facchini M.C.,

Fuzzi S. and Sioutas C. “ Fog enhances the toxicity of ambient particulate matter”.
Submitted to the *Atmospheric Chemistry and Physics*, January 2017

MENTORING RECORD

Post-Doctoral Research Associates at USC:

1. Seongheon Kim, Ph.D., 6/99, Environmental Engineering, USC
(Currently; Associate Professor, Yonsei University (Wonju), Korea)
2. Ming Chih Chang, Ph.D., 3/99, Environmental Engineering, USC
(Currently; Research Scientist, California Air Resources Board)
3. Peter Jaques, Ph.D. 6/97, Environmental Science, New York University
(Currently; Research Professor of Environmental Engineering, Clarkson University)
4. Philip M. Fine, Ph.D., 12/01, Environmental Engineering Science, California Institute of Technology
(Currently; Deputy Executive Officer, South Coast Air Quality Management District)
5. Chandan Misra, Ph.D., 3/03, Environmental Engineering, USC
(Currently; Senior Research Scientist, California Air Resources Board)
6. Thomas Kuhn, Ph.D., 9/03, Imperial College (UK)
(Currently; Associate Professor, Lulea University of Technology (LTU), Sweden)
7. Manisha Singh, Ph.D., 6/04, Environmental Engineering, USC
(Currently; Senior Research Scientist California Air Resources Board)
8. Bhabesh Chakrabarti, Ph.D., 2/05, Civil and Environmental Engineering, USC
(Currently; Senior Research Scientist, Climate Change Division, California Air Resources Board.)
9. Leonidas Ntziachristos, Ph.D., 6/02, Environmental Engineering, Aristotle University of Thessaloniki, Greece
(Currently; Associate Professor, Mechanical Engineering, Aristotle University of Thessaloniki, Greece.)
10. Michel D. Geller, Ph.D., 8/03, Environmental Engineering, USC
(Currently; Deputy Director, Manufacturers of Emission Controls Association)
11. Harish Phuleria, Ph.D., 6/07, Environmental Engineering, USC
(Currently: Assistant Professor, IIT Bombay, India)
12. Markus Sillanpää, Ph.D. 10/06, Environmental Engineering, University of Helsinki, Finland; (Currently; Research Assistant Professor, University of Helsinki, Finland)
13. Shaohua Hu, Ph.D., 7/06, Civil and Environmental Engineering, University of Washington-Saint Louis; (Currently; Senior Research Scientist, California Air Resources Board)
14. Margaret Krudysz Ph.D. 12/07, Environmental Health, UCLA
(Currently; Director, Student and Academic Affairs, City College of New York)
15. Andrea Polidori, Ph.D., 6/05, Environmental Engineering, Rutgers University
(Currently, Atmospheric Measurement Manager, South Coast Air Quality Management

District)

16. Bangwoo Han, Ph.D. 11/06, Chemical Engineering, Hiroshima University, Higashi-Hiroshima, Japan
(Currently, Senior Research Scientist, Korean Institute of Mining and Manufacturing)
17. Mari Cruz Minguillon- Bengochea, Ph.D. 07/07, University Jaume I of Castellón School of Technology and Experimental Sciences, Barcelona, Spain
(Currently; Senior Scientist, Spanish National Research Council)
18. Katharine Moore, Ph.D., 3/02, Civil and Environmental Engineering, University of Colorado(Currently, Senior Advisor, Senate Standing Committees, California State Legislature)
19. Subhasis Biswas, Ph.D., 1/08, Environmental Engineering, USC
(Currently; Senior Research Scientist, California Air Resources Board)
20. Ajay Kumar Chaudhary Ph.D., 12/08, Chemical and Environmental Engineering, University of California- Riverside. (Currently; Research Scientist, California Air Resources Board)
21. Evangelia Kostenidou, PhD., 5/10, Chemical Engineering, University of Patras, Greece
(Currently; Research Associate, University of Patras, Greece)
22. Zhi Ning, PhD, 5/09 Environmental Engineering, USC
(Currently: Associate Professor, Civil & Environmental Engineering, City University of Hong Kong)
23. Payam Pakbin, PhD, 7/11 Environmental Engineering, USC
(Currently; Research Scientist, South Coast Air Quality Management District)
24. Nancy Daher, PhD, 8/13, Environmental Engineering, USC
(Currently; Lecturer, University of Utah)

Doctoral Students:

Current:

1. Farimah Shirmohammadi (thesis advisor) USC Provost Fellow in the department of Civil Engineering, University of Southern California-

Thesis Topic: TBD

Expected graduation date: June 2018

2. Mohammad Sowlat (thesis advisor) USC Dean's Fellow in the department of Civil Engineering, University of Southern California-

Thesis Topic: TBD

Expected graduation date: June 2018

3. Christopher Lovett (thesis advisor) USC Dean's Fellow in the department of Civil Engineering, University of Southern California-

Thesis Topic: TBD

Expected graduation date: June 2019

4. Amirhosein Mousavi Nasabi Shams (thesis advisor) USC Dean's Fellow in the department of Civil Engineering, University of Southern California-

Thesis Topic: TBD

Expected graduation date: June 2020

Previous:

1. Sina Hasheminassab (thesis advisor) Department of Civil Engineering, University of Southern California

Thesis Topic: "Physico-chemical properties and source apportionment of size-fractionated airborne particulate matter in urban areas with implications for public health "

Graduation date: July 26, 2016

Currently; Air quality engineer, South Coast AQMD

2. Arian Saffari (thesis advisor) Department of Civil Engineering, University of Southern California

Thesis Topic: "Oxidative Potential of Urban Atmospheric Particles: Spatio-temporal Trends and Associations with Source-specific Chemical Components "

Graduation date: November 10, 2016

Currently; Air quality engineer, South Coast AQMD

3. Dongbin Wang (thesis advisor): Department of Civil Engineering, University of Southern California

Thesis Topic: "Development of novel techniques for evaluating physical, chemical and toxicological properties of particulate matter in ambient air"

Graduation date: May 10, 2016

Currently; Lecturer/Research Associate, Tsinghua University, China

4. Nancy Daher (thesis advisor): Department of Civil Engineering, University of Southern California

Thesis Topic: Size-resolved particulate matter (PM) in urban areas: toxico-chemical characteristics, sources, trends and health implications.

Graduation date: August 1, 2013

Currently; Research Scientist, Utah Air Quality Management District

5. Winnie Kam (thesis advisor): Department of Civil Engineering, University of Southern California

Thesis Topic: PARTICULATE MATTER (PM) EXPOSURE FOR COMMUTERS IN LOS ANGELES: CHEMICAL CHARACTERIZATION AND IMPLICATIONS TO PUBLIC HEALTH:

Graduation Date: November 16, 2012

- Currently; Research Scientist, State of California Department of Toxic Substances Control
6. Neelakshi Hudda (thesis advisor): Department of Civil Engineering, University of Southern California
Thesis Topic: “Ultrafine Particle Concentrations Inside Vehicles: Models for Exposure Assessment”
Graduation date: May 23, 2012
Currently; Research Associate, Department of Civil and Environmental Engineering, Tufts University
 7. Kalam Cheung (thesis advisor): Department of Civil Engineering, University of Southern California
Thesis Topic: “Temporal, Spatial and Toxicological Characteristics of Coarse Particulate Matter in and Urban Area and Their Source Identification”
Graduation date: May 22, 2012
Currently; Research Scientist, South Coast Air Quality Management District
 8. Payam Pakbin (thesis advisor): Department of Civil Engineering, University of Southern California
Thesis Topic: “Physicochemical and toxicological assessment of the semi-volatile and non-volatile fractions of PM from heavy duty vehicles operating with and without emissions control technologies”
Graduation date: July 27, 2011
Currently; Senior Research Scientist, South Coast Air Quality Management District
 9. Vishal Verma (thesis advisor): Department of Civil Engineering, University of Southern California
Thesis Topic: “Toxicological Characteristics of Particulate Matter in Urban Environments and their Source-Specific Constituents”
Graduation date: December 1, 2010
Currently: Assistant Professor, Civil & Environmental Engineering, University of Illinois at Urbana- Champagne
 10. Ning Zhi (thesis advisor): Department of Civil Engineering, University of Southern California
Thesis Topic: “Atmospheric processes alter the physico-chemical properties of primary ultrafine particles and their impact on public exposure”
Graduation date: May 19, 2009
Currently: Associate Professor, City University of Hong Kong
 11. Mohammad Arhami (thesis advisor): Department of Civil Engineering, University of Southern California
Thesis Topic: “Exposure Assessment and Source Apportionment of Size Fractions of Airborne Particulate Matter”

Graduation date: January 13, 2009

Currently: Associate Professor, Civil & Environmental Engineering, Shariff University

12. Subhasis Biswas (thesis advisor): Department of Civil Engineering, University of Southern California
Thesis Topic: "Investigation of Physico-Chemical Properties of Particulate Matter From Vehicular Sources"
Graduation date: February 2008
Currently; Research Scientist, California Air Resources Board
13. Harish Phuleria (thesis advisor): Department of Civil Engineering, University of Southern California
Thesis Topic: "Measurement and Methods for Assessing the Impact of Prevalent Particulate Matter Sources on Air Quality in Southern California"
Graduation date: March 2007
Currently: Assistant Professor, Civil and Environmental Engineering, India Institute of Technology (IIT), Bombay
14. Satya Brata Sardar (thesis advisor): Department of Civil Engineering, University of Southern California
Thesis Topic: "Sources and Formation Mechanisms of Ultrafine Particles in the Los Angeles Basin"
Graduation date: March 2006
Currently: Senior R&D Engineer, California Air Resources Board
15. Bhabesh Chakrabarti (thesis advisor): Department of Civil Engineering, University of Southern California
Thesis Topic: "Development of Continuous Monitors for Measurement of Physical, Chemical and Toxicological Studies of Ultrafine Particles"
Graduation date: March 2005
Currently: Senior research engineer, California Air Resources Board.
16. Manisha Singh (thesis advisor): Department of Civil Engineering, University of Southern California
Thesis Topic: "Development of Personal Monitors for Measurement and of Particulate Matter and Co-Pollutants"
Graduation date: June 2004
Currently: Senior Research Engineer, TSI Inc.
17. Michael Geller (thesis advisor): Department of Civil Engineering, University of Southern California
Thesis Topic: "Chemical Characterization and Toxicological Properties of Coarse Ambient Particulate Matter (PM)"
Graduation date: July 2003

Currently: Senior Environmental Engineer, US EPA

18. Chandan Misra (thesis advisor): Department of Civil Engineering, University of Southern California

Thesis Topic: “ Technologies for Assessment of Physical, Chemical and Biological Characteristics of Ultrafine Ambient Particles”

Graduation date: March 2003

Currently: Senior Research Scientist , California Air Resources Board

19. Mingchih Chang (thesis advisor): Department of Civil Engineering, University of Southern California

Thesis Topic: “ A New Generation of Personal and Stationary Particle Samplers “

Graduation date: March 2000.

Currently: Research Scientist, California Air Resources Board

20. Seongheon Kim (thesis advisor): Department of Civil Engineering, University of Southern California

Thesis topic: “Development of Coarse and Ultrafine Ambient Particle Concentrators”.

Graduation date: July 2000.

Currently: Associate Professor, Department of Environmental Engineering, National Seoul University, Korea

21. Pen-Yau Wang (thesis advisor) Department of Environmental Science and Engineering, Harvard University, School of Public Health

Thesis topic: “Development of a Method for Continuous Measurement of Particle Mass Concentration.”

Graduation date: June 1997.

Currently: Associate Professor at National Central University, Graduate Institute of Environmental Engineering, Chungli, Taiwan

22. Eileen Abt (thesis co-advisor) Department of Environmental Science and Engineering, Harvard University, School of Public Health

Thesis topic: “Characterization and Modeling of Indoor Particulate Sources in Homes in the Boston Metropolitan Area.”

Graduation date: March 1999.

Currently: Chemist, Center for Food Safety and Applied Nutrition., Food and Drug Administratio

Sponsored Master’s Students at USC:

1. Joshua Merlmestein, MS in Environmental Engineering, USC. Graduation Date: May 2000
2. Pranav Shah, MS in Environmental Engineering, USC. Graduation Date: November 2000

3. Si Shen, MS in Environmental Engineering, USC. Graduation Date: May 2003
4. Ali Attar MS in Environmental Engineering, USC. Graduation Date: May 2010
5. Niloofar Hajibeklou MS in Environmental Engineering, USC. Graduation Date: May 2011
6. Shruthi Balasubramaniam MS in Environmental Engineering, USC. Graduation Date: May 2011
7. Jue Wang, MS in Environmental Engineering, USC. Graduation Date: May 2012

TEACHING EXPERIENCE

Harvard University

1. EH 262 ab: Properties of Environmental Contaminants (5 credits): properties of gaseous pollutants; acid rain; green house effect; aerosol kinetics; particle settling and diffusion; aerosol instrumentation (*2 Year Average Teaching Evaluation Score: 6/7*)
2. EH 292a: Air Pollutants; Gases and Particles (2.5 credits): ideal gas laws; real gas laws; aerosol mechanics. (*2 Year Average Teaching Evaluation Score: 6/7*)

University of Southern California

1. ENE 429: Air Pollution Control (3 credits): basic principles for emission reduction and control of gas and particle phase pollutants; incineration; adsorption; absorption; scrubbing; electrostatic and mechanical control of particles; fundamentals of filtration; control of mobile sources (*6 Year Average Teaching Evaluation Score: 4.5/5*)
2. ENE 526: Environmental Pollutants; Monitoring and Risk Assessment (3 credits): air pollutants are a complex mixture of gases and particles. They undergo transformations, deposit in different sizes of the human respiratory tract, and have different impacts on the environment. This course is designed to offer engineers fundamental and practical education on the characteristics, sources, sampling and measurement methods of air pollutants. In addition, the health impacts of environmental contaminants are discussed, and the concept of risk assessment is introduced. (*18 Year Average Teaching Evaluation Score: 4.7/5*)
3. ENE 535: Applied Air Quality Management (3 credits): This course is designed to offer engineers practical education on the links between pollutant emissions, measured concentrations and adverse health effects of air pollutants. The course consists of three main components. The first component is devoted to the description of sampling strategies for air pollutants and focuses on strategies for measuring pollutant concentrations either on a community, occupational or personal level. The second part of the class is devoted to data analysis and receptor modeling and provides links between the sources and measured concentrations of air pollutants. The third component of the class is devoted to case studies,

focusing on the impact of air pollutants on human health and the environment (*16 Year Average Teaching Evaluation Score: 4.7/5*)

RESEARCH ACTIVITIES AND FUNDING

Summary: I have been the principal or co-principal investigator in about 65 research grants and contracts, exceeding US \$22 million (my own portion at USC only). The total funding level of these grants exceeds US \$45 million. These grants are described below:

Current:

1. Transcriptomics, Oxidative Stress, and Inflammatory Responses to Air Pollutants in an Elderly Cohort

Funding Source: NIEHS/NIH

Role: Co-Principal Investigator (PI: Dr. Ralph Delfino, UC Irvine)

Project period: 06/01/2011- 06/01/2017

Total Amount of Award: \$ 2,500,000 (C. Sioutas share at USC: \$787,867)

2. Genetic and Epigenetic Programming of Allergic Airway Inflammation

Funding Source: NIH/NIAID

Role: Co-Principal Investigator (PI: Dr. Talal Chatila, Harvard Medical School)

Project period: 04/01/2012- 04/01/2017

Total Amount of Award: \$ 486,233 (C. Sioutas share at USC)

3. The relation of cardiovascular health outcomes to the oxidative potential of particulate air pollution

Funding Source: South Coast Air Quality Management District

Role: Co- Principal Investigator (PI- Ralph Delfino, UC Irvine)

Project period: 10/01/2013- 12/01/2017

Total Amount of Award: \$ 345,000 (C. Sioutas share at USC; \$112,000)

4. Neurotoxicity of Airborne Particles: Role of Chronic Cerebral Hypoperfusion

Funding Source: National Institute of Health - NIEHS/ONES

Role: Co-Principal Investigator (PI: Dr. William Mack, USC Medical School)

Project period: 03 /01/2015 - 3/01/2020

Total Amount of Award: \$ 3,875,000 (C. Sioutas share at USC; \$515,500)

5. Measurement of Outdoor Ambient Ultrafine Particulates for a Study of Lung Cancer Risk in California

Funding Source: National Cancer Institute

Role: Principal Investigator

Project period: 07/01/2015 - 09/01/2017

Total Amount of Award: \$ 300,000

6. Fossil-fuel urban particles and neurodegeneration in Alzheimer transgenic mice

Funding Source: National Institute of Health

Role: Co-Principal Investigator (PI: Caleb Finch, USC Dept of Gerontology)

Project period: 12 /01/2015 - 12/01/2018

Total Amount of Award: \$ 535,000 (C. Sioutas share at USC; \$105,500)

7. Inflammation in brain aging: modulation by apoE alleles, gender, and air pollution

Funding Source: National Institute of Health

Role: Co-Principal Investigator (PI: Caleb Finch, USC Dept Gerontology)

Project period: 12 /01/2015 - 12/01/2020

Total Amount of Award: \$ 3,035,000 (C. Sioutas share at USC; \$505,500)

Previous Funding:

1. Development of a Mobile Exposure Facility to Conduct Inhalation Exposures to Ambient Particles

Funding Source: Air Resources Board, State of California

Role: Co-Principal Investigator (PI: John Froines. University of California, Los Angeles, School of Public Health)

Project period: 09/01/99-12/30/05

Total Amount of Award: \$2,500,000 (USC School of Engineering share: \$746,950)

2. SOUTHERN CALIFORNIA AIRBORNE PARTICULATE MATTER CENTER (SCAPMC)

Funding Source: U.S. Environmental Protection Agency

Role: Co-Principal Investigator and Director of Exposure Core (Center Director: John Froines. University of California, Los Angeles, School of Public Health)

Project period: 09/01/99-09/30/05 (6 yr renewal pending)

Total Amount of Award: \$ 10,719,360 (USC School of Engineering: \$1,535,231)

3. SOUTHERN CALIFORNIA SUPERSITE (SCS)

Funding Source: U.S. Environmental Protection Agency

Role: Co-Principal Investigator (Principal Investigator: John Froines. University of California, Los Angeles, School of Public Health)

Project period: 03/01/00-05/31/05

Total Amount of Award: \$ 3,699,573 (USC School of Engineering Share: \$ 572,140)

4. Development and Evaluation of a Novel Sampling Method to Determine the Phase Partitioning of Semi-Volatile Organic Compounds.

Funding source: Harvard University (subcontract to USC; Primary Agency; U.S. EPA)

Role: Principal Investigator

Project period: 10/01/96-1/31/02

Total Amount of Award: \$150,000

5. Experimental Characterization of Aerosol Separators for Capture Effectiveness

Funding Source: Johns Hopkins University; Applied Physics Laboratory

Role: Principal Investigator

Project period: 09/01/98-08/31/00

Total Amount of Award: \$78,073

6. Controlled Laboratory Evaluation of Acute Cardiopulmonary Responses to Concentrated Particulates

Funding Source: Health Effects Institute

Role: Co-Principal Investigator (PI: Gong, H.Jr, University of Southern California, School of Medicine)

Project period: 08/01/98-04/30/01

Total Amount of Award: \$ 614,385

7. Collection, Chemical and Toxicological Characterization of Ambient Coarse, Fine and Ultrafine Particulate Matter

Funding Source: Ministry of Housing, Planning and the Environment of the Netherlands

Role: Principal Investigator

Project period: 11/01/98-12/31/99

Total Amount of Award: \$ 89,530

8. Development and Evaluation of Three Ambient Particle Concentrators for Animal and Human Inhalation Studies

Funding source: Harvard University (subcontract to USC; Primary Agency; Health Effects Institute)

Role: Principal Investigator

Project period: 07/01/98-06/30/99

Total Amount of Award: \$60,480.00

9. Health Effects of Concentrated Ambient Particles from the Central Valley of California

Funding Source: U.S. Environmental Protection Agency

Role: Co-Principal Investigator (Principal Investigator: Kent Pinkerton, University of California, Davis, Institute of Toxicology and Environmental Health)

Project period: 06/01/00-5/31/03

Total Amount of Award: \$ 593,071 (USC School of Engineering Share: \$198,062)

10. Acute Cardiopulmonary Responses to Oxidant Gases and Ambient Particulate Pollution in Los Angeles residents

Funding Source: U.S. Environmental Protection Agency

Role: Co-Principal Investigator (Principal Investigator: Henry Gong, Jr., University of Southern California, School of Medicine)

Project period: 06/01/00-5/31/03

Total Amount of Award: \$ 623,038

11. Development and Evaluation of a Personal Particle Monitor for Size-Dependent Measurement of Mass and Chemical Composition of Individual Exposures to Particulate Matter

Funding Source: Mickey Leland National Air Toxics Research Center

Role: Principal Investigator

Project period: 11/01/00-10/31/02

Total Amount of Award: \$297,973.

12. Development and Evaluation of a Coarse Particle Concentrator for Animal Toxicology Studies to Coarse Particulate Matter

Funding Source: Ministry of Housing, Spatial Planning and the Environment, Netherlands

Role: Principal Investigator

Project period: 04/01/00-6/31/01

Total Amount of Award: \$107,485

13. Development of a Mobile Inhalation Toxicology Facility to Support Air Pollution Studies in Taiwan”

Funding Source: Environmental Protection Agency of Taiwan

Role: Principal Investigator

Project period: 04/01/00-3/31/01

Total Amount of Award: \$ 50,000

14. Relationship between ambient PM and heart rate variability and cardiac arrhythmia in elderly populations in the Los Angeles Basin

Funding Source: California Environmental Protection Agency

Role: Principal Investigator

Project period: 04/01/00-3/31/01

Total Amount of Award: \$ 93,476

15. Deployment and Operation of SMPS and Low Temperature TEOM in locations of the USC Children's Health Study (CHS) and the Los Angeles Supersite

Funding Source: California Air Resources Board and Air Quality Management District

Role: Principal Investigator

Project period: 12/01/01-11/30/04

Total Amount of Award: \$ 247,115

16. Effects of Airborne Particles on Allergic Airway Disease

Funding Source: U.S. Environmental Protection Agency

Role: Co-Principal Investigator (PI: Dr. Jack Harkema, Michigan State University)

Project period: 12/01/01-11/30/04

Total Amount of Award: \$ 854,702

17. Development of an Ultrafine Particle Concentrator

Funding Source: National Institute of Public Health and the Environment of the Netherlands (RIVM)

Role: Principal Investigator

Project period: /1/1/02 – 12/31/02

Total Amount of Award: \$ 88,274

18. Ultrafine Particle Concentrator Facility for Chronic Exposure Studies

Funding Source: New York University (NYU)

Role: Principal Investigator

Project period: 03/01/02-06/01/02

Total Amount of Award: \$ 48,174

19. Development of a Technology for High Volume Collection of Ultrafine, Accumulation and Coarse PM for In Vitro Toxicology Studies

Funding Source: University of Montana

Role: Principal Investigator

Project period: 03/01/03-06/01/03

Total Amount of Award: \$ 138,174

20. Development Of A Coarse Particle Chemical Speciation Sampler Using a Virtual Impactor Particle Concentrator

Funding Source: U.S. Environmental Protection Agency

Role: Principal Investigator

Project period: 03/01/03-06/01/03 (Cooperative Research and Development Agreement, CREDA)

Total Amount of Award: \$ 163,234

21. A Simple Low-cost Beta Attenuation Monitor (BAM) for Continuous Measurement of PM_{2.5} or Ultrafine Particle Concentrations

Funding source: California Air Resources Board, ICAT Grant 2003

Role: Co- Principal Investigator (with Philip M. Fine, USC)

Project period: 07/01/03 - 06/30/05

Total Amount of Award: \$ 287,660

22. A Pilot Study to Characterize Five Particles in the Environment of an Auto-Manufacturing Facility

Funding source: UAW/Chrysler National Training Center

Role: Principal Investigator

Project period: 07/01/96 - 06/30/97

Total Amount of Award: \$ 24,197

23. Development of an Ambient Fine Particle Concentrator for Human Inhalation Exposure Studies.

Funding source: National Institute of Public Health and Environmental Protection of the Netherlands (RIVM)

Role: Principal Investigator

Project period: 12/01/96-11/30/97

Total Amount of Award: \$ 127,115

24. Acute Cardiopulmonary Responses to Concentrated Particulates (Supplement)

Funding Source: Health Effects Institute

Role: Principal Investigator

Project period: 08/01/98-3/31/00

Total Amount of Award: \$ 31,829

25. An Automated Aerosol Concentration System for the Collection of Suspended Particulate Matter in Aqueous Solutions Suitable for Toxicological Assays

Funding Source: South Coast Air Quality Management District

Role: Principal Investigator

Project period: 09/01/04-8/31/06

Total Amount of Award: \$ 214,195

26. Homeland Security Center for Risk Based Economic Analysis of Terrorist Events

Funding Source: Department of Homeland Security

Role: Co- Investigator (Principal Investigator; Randolph Hall, USC School of Engineering)

Project period: 04/01/04-03/31/07

Total Amount of Award: \$12,000,000 (C. Sioutas share: \$ 424,000)

27. Development and Evaluation of Aerosol Instrumentation

Funding Source: TSI Incorporated

Role: Principal Investigator

Project period: 02/1/2005 to 10/31/2005

Total Amount of Award: \$ 110,000

28. Center for Agricultural Disease and Injury Research, Prevention and Education

Funding Source: National Institute of Occupational Safety and Health (NIOSH)

Role: Co-Principal Investigator (Principal Investigator: Kent Pinkerton, University of California, Davis, Institute of Toxicology and Environmental Health)

Project period: 09/30/01-08/31/07

Total Amount of Award: \$ 593,071 (USC School of Engineering Share: \$108,062)

29 Pediatric Asthma, Particulate Air Pollution and Nitrogen Dioxide

Funding Source: National Institutes of Health.

Role: Co- Principal Investigator (PI; Dr. Ralph J. Delfino, UC Irvine)

Project period; 04/01/2002 to 05/31/2008.

Total Amount of Award: \$ 1,899,203 (USC School of Engineering share; \$220,506)

30 Ultrafine PM and Cardio Respiratory Health

Funding Source: National Institute of Environmental Health Sciences (NIEHS-NIH)

Role: Co-Principal Investigator (with Ralph Delfino, UC Irvine)

Project period: 12/01/03-11/30/08

Total Amount of Award: \$ 2,817,789 (USC School of Engineering Share: \$715,000)

31 Determination of Reactive Oxygen Species Activity in PM and Enhanced Exposure Assessment for the NIH, NIEHS Study Entitled: Ultrafine Particulate Matter and

Cardiorespiratory Health

Funding Source: South Coast Air Quality Management District

Role: Co- Principal Investigator (with Ralph Delfino, UC Irvine)

Project period: 09/1/2004 to 10/31/2008

Total Amount of Award: \$750,000 (USC SOE share: \$ 314,000)

32 Atherogenic Effects of Ambient PM in Susceptible Animals

Funding Source: National Institute of Environmental Health Sciences (NIEHS-NIH)

Role: Co- Principal Investigator (with Andre Nel, UCLA School of Medicine)

Project period: 09/1/2004 to 12/31/2008

Total Amount of Award: \$1,530,000 (USC SOE share: \$ 391,330)

33 Toxicological assessment of particulate emissions from the exhaust of old and new model heavy- and light-duty vehicles

Funding Source: METRANS Transportation Center- US DOT.

Role: Co-Principal Investigator (with Dr. Katharine Moore, USC)

Project period: 10/01/2008-12/31/2009

Total Amount of Award: \$ 100,000

34. Cardiovascular Effects of Ambient PM in Susceptible Animals

Funding Source: National Institute of Environmental Health Sciences (NIEHS-NIH)

Role: Co- Investigator (PI; Michael T. Kleinman, UC Irvine School of Medicine)

Project period: 09/1/2004 to 08/31/2008

Total Amount of Award: \$ 750,000 (USC SOE share: \$ 150,650)

35. Design and evaluation of two high-flow rate, very low pressure drop impactors for collection of coarse, fine and ultrafine particles

Funding Source: US EPA

Role: Principal Investigator

Project period: 04/01/2008-12/31/2009

Total Amount of Award: \$ 94,244

36. MEGacity Aerosols Characterization and Toxicity (MEGATOX)

Funding Source: Ecole des Mines de Douai, Paris, France.

Role: Principal Investigator

Project period: 04/01/2009-12/31/2009

Total Amount of Award: \$ 126,750

37. Fine Scale Particle Number Concentrations Within Communities and in the Vicinity of Sound Walls

Funding Source: California Air Resources Board

Role: Principal Investigator

Project period: 12/01/2007-06/06/2011

Total Amount of Award: \$ 467,000

38. Physicochemical and toxicological assessment of the semi-volatile and non-volatile fractions of PM from heavy- and light-duty vehicles operating with and without emissions control technologies

Funding Source: California Air Resources Board

Role: Principal Investigator

Project period: 01/01/2007-12/31/2011

Total Amount of Award: \$ 679,000

39. Measurement and Toxicological Assessment of Population Exposures to Airborne Particulate Matter (PM) in Subways and Light Rail Trains

Funding Source: METRANS Transportation Center- US DOT.

Role: Co-Principal Investigator (with Dr. Katharine Moore, USC)

Project period: 10/01/2009-12/31/2011

Total Amount of Award: \$ 100,000

40. SOUTHERN CALIFORNIA AIRBORNE PARTICULATE MATTER CENTER (SCAPMC) Renewal

Funding Source: U.S. Environmental Protection Agency

Role: Co-Director (Center Director: John Froines. University of California, Los Angeles, School of Public Health)

Project period: 01/01/2006-12/31/2012 (6 yr renewal)

Total Amount of Award: \$ 7,999,360 (USC School of Engineering: \$2,135,231)

41. Asthma Allergic Disease Research Center (AADCRC)

Funding Source: National Institute of Health

Role: Exposure Core Director (Center Director; Andre Nel, UCLA School of Medicine)

Project period: 11/01/2006-10/31/2012

Total Amount of Award: \$ 678,000 (USC School of Engineering share); total amount awarded: \$6,136,890.

42. Sources, Composition, Variability and Toxicological Characteristics of Coarse (PM10-2.5) Particles in Southern California

Funding Source: US EPA

Role: Principal Investigator
Project period: 01/01/2008-12/31/2012
Total Amount of Award: \$ 1,120,641

43. Center for Genomic and Phenomic Studies in Autism (U24)

Funding Source: NIH
Role: Co-Principal Investigator (Principal Investigator: Dr. Clara Lajonchere, USC Keck School of Medicine)
Project period: 12/31/2007-11/31/2012
Total Amount of Award: \$ 3,435,109 (USC School of Engineering Share: \$458,052)

44. Cardiopulmonary Health Effects: Toxicity of Semi-volatile and Non volatile Components of Ultrafine PM.

Funding Source: California Air Resources Board (CARB)
Role: Co-Principal Investigator (with Dr. Michael Kleinman, UC Irvine)
Project period: 02/01/2009- 12/31/2012
Total Amount of Award: \$ 520,641 (USC's share)

45. In-Vehicle Air Pollution Exposure Measurement and Modeling for Pregnant Women in the National Children's Study

Funding Source: California Air Resources Board (CARB)
Role: Co-Principal Investigator (with Dr. Ralph Delfino, UC Irvine)
Project period: 02/01/2008-12/31/2012
Total Amount of Award: \$ 503,890 (USC's share)

46. Source Apportionment of Carbonaceous Aerosols Using Integrated Multi-Variant and Source Tracer Techniques and a Unique Molecular Marker Data Set

Funding Source: California Air Resources Board (CARB)
Role: Co-Principal Investigator (with Dr. James Schauer, University of Wisconsin – Madison)
Project period: 02/01/2008-12/31/2011
Total Amount of Award: \$ 163,670 (USC's share)

47. "Development of a Versatile Aerosol Concentration System (VACES) for Inhalation Exposure Studies"

Funding Source: University of Texas
Role: Principal Investigator
Project period: 04/01/2012- 02/01/2013
Total Amount of Award: \$ 85,000

48. "Development of a Versatile Aerosol Concentration System (VACES) for Inhalation

Exposure Studies"

Funding Source: Max Planck Institute

Role: Principal Investigator

Project period: 04/01/2010- 02/01/2011

Total Amount of Award: \$ 75,000

49. Health effects of PM particles emitted from heavy-duty vehicles-A comparison between different fuel formulations

Funding Source: South Coast Air Quality Management District-AQMD

Role: Co-Principal Investigator (PI: Dr. George Karavalakis, UC Riverside))

Project period: 04/01/2012- 09/01/2013

Total Amount of Award: \$ 55,000 (C. Sioutas share only)

50. Sources, Composition, Variability and Toxicological Characteristics of Ultrafine Particles in Southern California

Funding Source: South Coast Air Quality Management District (SCAQMD)

Role: Principal Investigator *Project period:* 01/01/2011-12/01/2015

Total Amount of Award: \$ 498,900

51. Air Pollution and Vulnerability to Alzheimer-like Neuro-degeneration in Transgenic Models

Funding Source: NIH

Role: Co-Principal Investigator (PI: Dr. Caleb Finch, USC Dept of Gerontology)

Project period: 10/01/2011- 12/01/2015

Total Amount of Award: \$ 160,000 (C. Sioutas share only)

52. Development of a Versatile Aerosol Concentration System to study optical aerosol properties

Funding Source: University of Vienna

Role: Principal Investigator

Project period: 04/01/2013- 02/01/2015

Total Amount of Award: \$ 85,000

53. Development of a Versatile Aerosol Concentration System (VACES) for Inhalation Exposure Studies

Funding Source: University of Bern, Switzerland

Role: Principal Investigator

Project period: 11/01/2013- 12/01/2014

Total Amount of Award: \$ 75,000

54. Source Apportionment of PM_{2.5} in the 8 STN/chemical speciation sites of the state of California

Funding Source: Office of Environmental Health Hazard Assessment (OEHHA)

Role: Principal Investigator

Project period: 07/01/2013- 12/01/2016

Total Amount of Award: \$ 254,000

55. Peripheral Blood Gene Expression in Subjects with Coronary Artery Disease and Exposure to Particulate Air Pollutant Components and Size Fractions

Funding Source: California Air Resources Board (CARB)

Role: Co-Principal Investigator (with Dr. Ralph Delfino, UC Irvine)

Project period: 08/01/2010-08/31/2016

Total Amount of Award: \$ 298,900 (USC's share at USC: \$114,822)

56. Evaluation of Ambient Particulate Matter Neurotoxicity Using Primary Human Brain Cells

Funding Source: South Coast Air Quality Management District

Role: Co-Principal Investigator (PI: Dr. Arezoo Campbell, Western University)

Project period: 08 /01/2013- 12/01/2016

Total Amount of Award: \$ 575,000 (C. Sioutas share at USC; \$195,500)

SERVICE ACTIVITIES AT USC:

Committees:

- i. Civil Engineering Undergraduate Recruitment Committee.
- ii. Civil Engineering Curriculum Committee
- iii. Viterbi School of Engineering, Engineering Faculty Council Research Committee
- iv. University Committee of Appointments, Promotions and Tenure (UCPAT)
- v. CEE Chair Search Committee
- vi. Dean's Advisory Committee for Transformational and Interdisciplinary Faculty Hiring