U.S.-IRAN SYMPOSIUM ON AIR POLLUTION IN MEGACITIES

Beckman Center of the National Academies of Sciences & Engineering

Irvine, California

September 3rd-5th 2013
Technical Agenda

Day 1:

8:00-8:45am  Breakfast at Beckman Center

Introductions
8:45-9:00am  Welcome to Symposium (Najmedin Meshkati, Phd; Norman Neureiter, PhD; Glenn Schweitzer)
9:00-9:15am  Welcome to the UC Irvine (Gregory Washington, PhD, UCI Dean of Engineering)
9:15-9:45am  Barry Wallerstein, D Env, opening talk on air regulatory successes in Los Angeles
9:45-10:15am Ahmad Abrishamchi, PhD, “Introductory Overview of the Key Problems Facing Tehran and Urban Iran”

10:15-10:30  Tea break

Session 1: Characterizing Air Pollution: Chemistry and Modeling of Air Pollutants

Session Chair: Vahid Hosseini, PhD

10:30-10:55am  Donald Dabdub, PhD, “State-of-the-science of computational models for urban air pollution dynamics”
10:55-11:20am  Mohammad Arhami, PhD, “Modeling and Assessment of Air Pollutants Emission from Vehicular Sources in Tehran”
11:20-11:45am  Yousef Rashidi, MD, “An Overview of Studies and Monitoring Programs Conducted by Tehran’s Air Quality Control Company”
11:45-12:15pm  Discussion

12:15-1:00pm  Lunch

Session 2: Emissions Estimates and Monitoring of Urban Air Pollution

Session Chair: Donald Dabdub, PhD

1:00-1:25pm  James Jay (Jamie) Schauer, PhD, “Source Apportionment Strategies for Atmospheric Particulate Matter in Mega-Cities”
1:25-1:50pm  Khosro Ashrafi, PhD, “Analysis of dispersion of particulate matter (PM) emitted form a steel complex affecting its urban area surrounding”
1:50-2:15pm  Vahid Hosseini, PhD, “National mobile source emission inventory development”
2:15-2:40pm  Andrew Grieshop, PhD, “Motor vehicle contributions to urban air pollution: emission measurements to inform effective policy”
Donald Blake, PhD, “Volatile organic compound measurements in selected urban areas”

Tea break and Discussion on Session 2

Session 3: Case Studies on Specific Urban Areas: Understanding the Roles of Key Economic, Geographic, and Urban Design Inputs in the Pollution Characterization or Mitigation Scenarios

Session Chair: Majid Shafie Pour, PhD

Armin Sorooshian, PhD, “Case Studies of Air Pollution Monitoring in Urban Atmospheres: Los Angeles and Tehran”

Meeghat Habibian, PhD, “Assessing the Role of Transportation Demand Management Policies on Urban Air Pollution: A Case study of Mashhad”

Robert Griffin, PhD, “Highly-Time Resolved Characterization of Chemical and Physical Processes Affecting Air Quality in Major Metropolitan Areas in Texas”

Mohammad Soltanieh, PhD, “Climate Change Activities in Iran under the United Nations Framework Convention on Climate Change UNFCCC”

Discussion on Session 3 (make-up time)

Depart for Newport Beach Hyatt Hotel

Day 2:

Breakfast at Beckman Center

Session 4: Health Impacts of Air Pollution

Session Chairs: Mehrdad Arjomandi
Suzanne Paulson

Suzanne Paulson, PhD, “Spatial variations of primary pollutants in urban areas and implications for pollutant exposure”

Masud Yunesian, PhD, MD, “Application of LUR models as a reasonable approach for assessment of chronic exposure to air pollutants in Tehran, Iran”

Roya Kelishadi, MD, “Air Pollution Control: The Key to Primordial Prevention of Non-communicable Diseases”

Vahid Mansouri, PhD, “The assessment of respiratory and cardiovascular patients referred to university clinics comparing to air pollutants in Tehran”

Arezoo Campbell, PhD, “Does Exposure to Air Pollution Contribute to Neurodegenerative Diseases?”

Tea Break
10:50-11:15am  Ghasem Ahangari, PhD, “Significantly change of gene expression profile in individuals who had been exposed to air pollutions. Could it be evidence for gene and environmental interactions?”

11:15-11:40am  Farideh Atabi, PhD, “Monitoring and assessment of ambient benzene concentration and its health impact in urban area in Tehran”

11:40-12:05pm  Mehrdad Arjomandi, MD, “Health Effects of Ozone”

12:05-1:00pm  Lunch and Discussion on Session 4

Session 5: Abatement Strategies and Solutions to Air Pollution Challenges

Session Chair: Mohammad Soltanieh

1:00-1:25pm  Maryam Izadpanah, “An Overview of Tehran’s Clean Air Program”

1:25-1:50pm  Mohsen Nazemi, “Regulating Stationary Sources and Market Incentive RECLAIM Cap & Trade Program”

1:50-2:15pm  Jennifer Wilcox, PhD, “Point-Source Pollutants and Technology”

2:15-2:40pm  Derek Dunn-Rankin, “Clean Combustion Technologies”

2:40-3:00pm  Discussion on Session 5

3:00-3:15  Tea Break

Session 6: Challenges Going Forward: Climate Change and Urban Growth

Session Chair: Jennifer Wilcox

3:15-3:40pm  Gholamreza Goudarzi, PhD “Characterization of physical, chemical and biological properties of aerosols generated during dust storms over Iran”

3:40-4:05pm  Mohsen Davazdah Emami, PhD. “NOx combustion in GT-combustors: A case study.”

4:05-4:30pm  Majid Shafie Pour, PhD, “An Optimized Model for Sustainable Development Planning Based on ‘Horizontal Equity Concept and GHGs Emissions Reduction Allocation (GERA)’ from National Perspectives”

4:30-4:55pm  Saviz Sehatkashani, “Dust Occurrence Enhancement consolidate technique over West and South West of Iran Using Spectral Properties of Moderate Resolution Imaging Spectroradiometry”

4:55-5:25pm  Discussion on Session 6

5:25-5:35pm  Explanation of Working Groups for Dinner

5:40pm  Depart for Bayside Restaurant

6pm  Working Dinner at Bayside Restaurant, 900 Bayside Dr, Newport Beach, CA
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<td>8:00-8:30am</td>
<td>Breakfast</td>
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<tr>
<td>8:30-9:15am</td>
<td>Working Groups Present on Areas for Future Collaboration</td>
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<td>9:15-10:45am</td>
<td>Iranian Delegation Program Evaluation with Larry Moody</td>
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<td>10:45-12:00am</td>
<td>Field Trip</td>
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<td>UC Irvine Center for Hydrometeorology and Remote Sensing (CHRS)</td>
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<td>Soroosh Sorooshian, PhD</td>
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<td>12:00pm</td>
<td>Depart for South Coast Air Quality Management District (SCAQMD)</td>
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LIST OF PARTICIPANTS

Iranian Participants

Prof. Ahmad ABRISHAMCHI
Professor, Civil Engineering
Chairholder, UNESCO Chair in Water and Environment Management for Sustainable Cities
Sharif University of Technology

Prof. Ghasem AHANGARI
Professor, Medical Biotechnology and Genetics
Tehran University

Prof. Mohammad ARHAMI
Assistant Professor, Department of Civil Engineering
Sharif University of Technology

Dr. Khosro ASHRAFI
Assistant Professor, Environmental Engineering
University of Tehran

Prof. Farideh ATABI
Assistant Professor
Graduate School of Environment and Energy, Science and Research Branch, Islamic Azad University

Prof. Mohsen DAVAZDAH EMAMI
Vice President
Isfahan University of Technology

Dr. Gholamreza GOUĐARZI
Assistant Professor
Ahvaz Jundishapoour University

Dr. Meeghat HABIBIAN
Assistant Professor, Civil and Environmental Engineering
Amirkabir University of Technology

Prof. Vahid HOSSEINI
Assistant Professor, Mechanical Engineering Department
Sharif University of Technology
Ms. Maryam IZADPANAH  
Head of Air Pollution Monitoring  
National Air and Climate Change Center

Prof. Roya KELISHADI  
Professor of Pediatrics  
Isfahan University of Medical Sciences

Mr. Vahid MANSOURI  
Assistant and Lecturer, Anatomy and Cell Biology  
Shahid Beheshti University of Medical Sciences

Dr. Yousef RASHIDI  
Lecturer, Mechanical Engineering Department  
Sharif University of Technology

Ms. Saviz SEHATKASHANI  
PhD Candidate, Department of Meteorology  
Science and Research Branch, Islamic Azad University of Tehran

Prof. Majid SHAFIE POUR MOTLAGH  
Professor, Environmental Engineering  
University of Tehran

Prof. Mohammad SOLTANIEH  
Professor of Chemical and Petroleum Engineering  
Sharif University of Technology

Prof. Nasser TALEBBEYDOHKTI  
Professor, Civil and Environmental Engineering  
Shiraz University

Prof. Masud YUNESIAN  
Professor, Epidemiology  
Tehran University of Medical Sciences
American Participants

**Mehrdad ARJOMANDI, MD**  
Assistant Professor in Residence, School of Medicine  
University of California, San Francisco

**Donald BLAKE, PhD**  
Professor, School of Physical Sciences  
University of California, Irvine

**Arezoo CAMPBELL, PhD**  
Associate Professor of Pharmaceutical Sciences  
Western University of Health Sciences

**Donald DABDUB, PhD**  
Professor, Mechanical and Aerospace Engineering  
University of California, Irvine

**Derek DUNN-RANKIN, PhD**  
Professor, Department of Mechanical and Aerospace Engineering  
University of California, Irvine

**Andrew GRIESHOP, PhD**  
Assistant Professor, Department of Civil, Construction, & Environmental Engineering  
North Carolina State University

**Robert GRIFFIN, PhD**  
Professor, Civil and Environmental Engineering  
Rice University

**Mohsen NAZEMI**  
Deputy Executive Officer, Office of Engineering and Compliance  
South Coast Air Quality Management District

**Suzanne PAULSON, PhD**  
Professor, Department of Atmospheric and Ocean Sciences  
University of California, Los Angeles

**James Jay (Jamie) SCHAUER, PhD**  
Professor, Civil and Environmental Engineering  
University of Wisconsin

**Armin SOROOSHIAN, PhD**  
Assistant Professor, Chemical and Environmental Engineering  
University of Arizona
Barry WALLERSTEIN, D Env  
Executive Officer  
South Coast Air Quality Management District  

Jennifer WILCOX, PhD  
Assistant Professor, Energy Resources Engineering  
Stanford University  

Jun WU, PhD  
Assistant Professor, College of Health Sciences/Epidemiology  
University of California, Irvine  

Attendees  

Amir AGHAKOUCHAK, PhD  
Assistant Professor, Civil and Environmental Engineering  
University of California Irvine  

Hamed ASHOURI  
PhD Candidate, Civil and Environmental Engineering  
University of California, Irvine  

Azar DABIRI  
Engineer  
South Coast Air Quality Management District  

Shah DABIRIAN, PhD  
Air Quality Specialist  
South Coast Air Quality Management District  

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PhD Candidate  
University of California, Irvine  

Kambiz HADJIFOROOSH  
Air Quality Engineer  
South Coast Air Quality Management District  

Sina HASHEMINASSAB  
PhD Candidate, Aerosol Laboratory  
University of Southern California  

Lindsey MARBURGER  
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American Association for the Advancement of Science
Jacqueline MARTIN  
Awards Associate  
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Rubicon Engineering

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URS Corporation

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Student Researcher, Pediatric Surgery  
University of California, Los Angeles

Normal NEUREITER, PhD  
Acting Director, Center for Science, Technology & Security Policy  
American Association for the Advancement of Science

Rezvan RAMEZANI  
Systems & Programming Supervisor  
South Coast Air Quality Management District

Arian SAFFARI  
PhD Candidate, Aerosol Laboratory  
University of Southern California

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Director, Director, Program on Central Europe and Eurasia  
National Academy of Sciences

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Farzin ZAREIAN, PhD  
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University of California, Irvine
U.S.-IRAN SYMPOSIUM ON AIR POLLUTION IN MEGACITIES
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Beckman Center

Iranian Participant Bios

Dr. (Mr.) Ghasem AHANGARI

Dr. Ghasem Ahangari is a faculty member of the Medical Biotechnology and Genetics Department at Tehran University. He also works at the National Institute for Genetic Engineering and Biotechnology (NIGEB), where he has been the director of the Division of Medical Biotechnology since 2012. Professor Ahangari has taught and advised students seeking their M.S. or Ph.D. degrees in specialized subjects such as immunogenetics, immunopathology, immunohematology, hematology, and blood banking and transfusion.

Present Position: Associate Professor, Medical Biotechnology and Genetics, University of Tehran

Concurrent Position: Director, Division of Medical Biotechnology, National Institute for Genetic Engineering and Biotechnology (NIGEB)
Head, Neuroimmunopsychoncogenics Group, NIGEB

Previous Positions: Head, Department of Medical Genetics, NIGEB, 2008-11
Head, Department of Immunology, NIGEB, 1998-2002
Member, Medical Biotechnology Education Policy Committee, Ministry of Health, 1997-2002

Education/Training: Ph.D., Molecular Clinical Immunology, Tarbiat Modares University, Tehran, Iran, and Karolinska Institute, Stockholm, Sweden, 1997
Master of Science, Hematology and Blood Banking, Tarbiat Modares University, Tehran, 1988
Bachelor of Science, Medical Technology, Tehran Medical University, Tehran, 1985

Iranian Molecular Medicine Network Scientific Committee
Iranian Medical Council
Federation American Society for Experimental Biology
Scandinavian Society for Immunology
American Association of Immunologists
International Tissue Engineering Society, EU Section
Iranian Immunology Society
Iranian Biotechnology Society
Publications:


Prof. Ahmad ABRISHAMCHI

Ahmad Abrishamchi is a professor at Sharif University of Technology and Chairholder of “UNESCO Chair in Water and Environment Management for Sustainable Cities”. He earned his M.S. and PhD. Degrees from Land, Air and Water Resources Department and the Department of Civil and Environmental Engineering at UCDavis in 1975 and 1979. His B.S. is from Shiraz University, Iran (1972). Dr. Abrishamchi first served Isfahan University of Technology for 17 years where he did teaching and research activities and held administrative positions such as the University Chancellor, Vice Chancellor for Research, and head of Civil Engineering Department for 12 years. He then moved to Sharif University in 1997. He has expertise in water resources and environmental engineering, with particular emphasis in water and environmental systems analysis and management. He has had collaboration with US National Academy of Sciences in organizing joint US-Iran workshops and a long-time collaboration with UNESCO IHP.

Present Position:
Professor, Civil Engineering
Chairholder, UNESCO Chair in Water and Environment Management for Sustainable Cities
Sharif University of Technology

Membership:
Member, American Society of Civil Engineers, ASCE
Member, American Geophysical Union, AGU
Member, International Water Resources Association (IWRA), USA
Member, International Water Resources Association (IWRA), USA
Member, IHP National Committee of Hydrology, Iranian National

Select Publications:


**Prof. Mohammad ARHAMI**

Dr. Arhami is an assistant professor at civil engineering Department of Sharif University of technology, where he is the head of environmental and water resources engineering division. His area of research includes air pollutants measurement and modeling. He received his PhD in environmental engineering from University of Southern California in 2009. He earned his MSc in environmental engineering from Georgia Institute of Technology, and his BSc in civil engineering from Sharif University. He is also the director of UNESCO Chair in Water and Environment Management for Sustainable Cities at Sharif University.

| Present Position: | Assistant Professor, Department of Civil Engineering  
Sharif University of Technology |
|-------------------|--------------------------------------------------|
| Previous Positions: | Sharif University of Tech., Dept. of Civil Eng, Assistant Professor, 2009-Present  
Sharif University of Tech., Dept. of Civil Eng, Head of Env Eng & Water Res Division, 2011-Present  
Sharif University of Tech., Dept. of Civil Eng, Manager of Environmental Eng Lab, 2011-Present  
Sharif Environmental Eng Research Institute, Head of Air Pollution Group, 2011-Present  
Sharif Energy Research Institute, Head of Energy and Environment Group, 2010-present |
| Education/Training: | PhD, Environmental Engineering, University of Southern California  
MSc, Environmental Engineering, Georgia Institute of Technology  
MSc, Civil Engineering, Sharif University |
Dr. (Mr.) Khosro ASHRAFI

Dr. Khosro Ashrafi serves as Assistant Professor in Environmental Engineering at the University of Tehran. He also works with education and research programs for students at the Masters and Ph.D. levels at the University of Tehran. In addition, Dr. Ashrafi manages some projects for industries and organizations every year that are funded through the university. These private research and industrial projects relate to air pollution dispersion modeling and monitoring.

**Present Position:** Assistant Professor, Environmental Engineering, University of Tehran

**Previous Position:** Research Scientist, Vehicle, Fuel and Environment Research Institute, University of Tehran, 2001-05

**Education/Training:**
- Ph.D., Mechanical Engineering (Fluid Dynamics), University of Tehran, Tehran, 2006
- M.S., Mechanical Engineering (Fluid Dynamics), University of Tehran, Tehran, 2000
- B.S., Mechanical Engineering, Sharif University of Technology, Tehran, 1998

**Membership:** Iranian Meteorological Society

**Publications:**
Name: Dr. (Ms.) Farideh ATABI

Dr. Farideh Atabi serves as an Assistant Professor in Environmental Engineering Department at Graduate School of Environment and Energy, Science and Research Branch of Islamic Azad University. Her research work focuses on air pollution monitoring and modeling and renewable energy. Dr. Atabi also works with education and research projects for students in master and PhD level. She has also had cooperation with international organizations and research institutes.

Present Position: Assistant Professor, Graduate School of Environment and Energy, Science and Research Branch, Islamic Azad University, Tehran

Previous Positions: Research Manager, Graduate School of Environment and Energy, Science and Research Branch, Islamic Azad University, Tehran, 2003-05
Head of Renewable Energy and Air Pollution Department, The Center for Environment and Energy Research and Studies (CEERS), affiliated with Islamic Azad University, 2001-05
Researcher, Mechanical Engineering Department of Sharif University of Technology, 1986-1997

Education/Training: Ph.D., Environmental Engineering, Science and Research Branch, Islamic Azad University, Tehran, 2002
M.S., Environmental Engineering, Science and Research Branch, Islamic Azad University, Tehran, 1996
B.S., Mechanical Engineering, Science and Technology University of Iran, Tehran, 1987

Memberships: Board Member, Iran Energy Association
Iranian Association for Energy Economics
World Energy Council, National Energy Committee
Iranian Solar Energy Society
Iranian Society of Mechanical Engineering
Iranian Society of Environmentalists
Iranian Construction Engineers Organization, Province of Tehran
Citizens United for Renewable Energy and Sustainability
Renewable Energy Committee, Ministry of Science, Research, and Technology, 2009-11

Publications: “Assessment of Variation in Benzene Concentration Produced from Vehicles and Gas Stations in Tehran Using GIS”; 2013; International Journal of Environmental Science and Technology; Vol. 2; No. 10 (2013); PP.283-294

“Post-2010 CDM multi Criteria Analysis of Industries in Six Asian Countries: Iranian Case Study”; 2013, International Journal of Climate Policy; Vol. 2 (2013); PP. 210-239


“Renewable Energy in Iran: Challenges and Opportunities for Sustainable Development”; Spring 2004; International Journal of Environmental Science and Technology; Vol.1, No.1, ISSN: 1733-1472
Dr. (Mr.) Mohsen DAVAZDAH EMAMI

Dr. Mohsen Davazdah Emami serves as Vice President of Isfahan University of Technology. He is also Associate Professor of Mechanical Engineering at the same University. Dr. Emami’s research has focused on the role of combustion in mechanical engineering.

Present Position:  
Vice President, Isfahan University of Technology, Isfahan

Concurrent Position:  
Associate Professor, Mechanical Engineering Department, Isfahan University of Technology, Isfahan

Previous Positions:  
Assistant Professor, Mechanical Engineering Department, Isfahan University of Technology, Isfahan, 1999-2012  
Head, Office of Assessment and Evaluation, Isfahan University of Technology, Isfahan, 2005-09  
Education Deputy, Mechanical Engineering Department, Isfahan University of Technology, Isfahan, 2001-03  
Research Assistant, Mechanical Engineering Department, Imperial College of Science, Technology, and Medicine, London, 1997-98  
Postdoctoral Research Assistant, Mechanical Engineering Department, Imperial College of Science, Technology, and Medicine, London, 1997-98  
Instructor, Mechanical Engineering Department, Isfahan University of Technology, Isfahan, 1990-93

Education/Training:  
Post doctoral Research, Mechanical Engineering (Combustion), Imperial College of Science, Technology and Medicine, London, 1998-99  
Ph.D., Mechanical Engineering (Combustion), Imperial College of Science, Technology and Medicine, London, 1993-98  
M.S., Mechanical Engineering, Isfahan University of Technology, Isfahan, 1989  
B.S., Mechanical Engineering, Isfahan University of Technology, Isfahan, 1987

Membership:  
Iranian Society of Combustion

Publications:  

Dr. (Mr.) Gholamreza Goudarzi

Dr. Gholamreza Goudarzi is an Assistant Professor at Ahvaz Jundishapoor University. He holds a Ph.D. in Environmental Health Engineering from the Tehran University of Medical Sciences. Dr. Goudarzi also serves as a Health Officer at the Yasuj University of Medical Science.

Present Position: Assistant Professor, Ahvaz Jundishapoor University

Previous Position: Health Officer, Yasuj University of Medical Science

Education/Training: Ph.D., Environmental Health Engineering, Tehran University of Medical Sciences, Tehran, 2010
Master of Applied Science, Environmental Health Engineering, Tehran University of Medical Sciences, Tehran, 2003
Bachelor of Applied Science, Environmental Health Engineering, Shiraz University of Medical Sciences, 1998

Membership: American Society of Civil Engineers (ASCE)

Publications:
“Determination of indoor airborne bacteria during normal and dust storm days in Ahvaz city,” Science of the Total Environment Journal, Under Review
“Determination of culturable indoor airborne fungi during normal and dust event days in Ahvaz,” Aerobiologia, Vol. 29 (2), pp. 279-290
“Seasonal variation of mercury vapor concentrations in industrial, residential, and traffic areas of Ahvaz city, Southwest Iran, African Journal of Biotechnology, Vol. 10 (57), pp. 12232-12236, 28 September, 2011
Dr. (Mr.) Meeghat HABIBIAN

Dr. Meeghat Habibian is an assistant professor in the Department of Civil and Environmental Engineering at Amirkabir University of Technology. His research focuses primarily on transportation planning, demand modeling and management, and sustainable transportation policy. In addition to his own research, Dr. Habibian advises master’s degree candidates on topics focused on traffic policy and management.

Present Position: Assistant Professor, Department of Civil and Environmental Engineering, Amirkabir University of Technology

Concurrent Position: Traffic and Transportation Planning Committee, Tehran Traffic and Transportation Organization

Previous Positions: Transportation Consultant, Atiesaz Engineering Company, Tehran, 2005-13
Invited Lecturer, Shahid Beheshti University (SBU), Department of Architecture and Urban Planning, Tehran, 2012

Education/Training: Ph.D., Transportation Planning, Sharif University of Technology, Tehran, 2011
M.S., Civil Transportation Engineering, Amirkabir University of Technology, Tehran, 2003
B.S., Civil and Environmental Engineering, Isfahan University of Technology, Isfahan, 2001

Memberships: Tehran Construction Engineering Organization
Iranian Society of Transportation Engineering

Dr. (Mr.) Vahid HOSSEINI

Dr. Vahid Hosseini teaches undergraduate and graduate courses as an Assistant Professor with the Mechanical Engineering Department of Sharif University of Technology. He manages several research and industrial projects on combustion and combustion-generated air pollution, and leads laboratory research in the subjects of lead fuel, combustion, and emissions.

Present Position: Assistant Professor, Mechanical Engineering Department, Sharif University of Technology

Previous Positions: Research Assistant, Institute for Chemical Process and Environmental Technology (ICPET), National Research Council Canada, Ottawa, Ontario, Canada

Education/Training: Ph.D., Mechanical Engineering, University of Alberta, Edmonton, Alberta Master of Science, Mechanical Engineering, Sharif University of Technology, Tehran, 1999 Bachelor of Science, Mechanical Engineering, Sharif University of Technology, Tehran, 1997

Memberships: American Society of Mechanical Engineers (ASME), USA Society of Automotive Engineers (SAE), USA Combustion Institute/ Canadian Section, Canada Combustion Institute/ Iranian Section, Iran, 2011-present

Ms. Maryam IZADPANAH

Ms. Maryam Izadpanah is the Head of Air Pollution Monitoring at the National Air and Climate Change Center. She prepares monthly, quarterly, and annual analytic reports for all national air pollution stations across Iran. Ms. Izadpanah cooperates with country stations to monitor air pollution data, and publishes her findings in many comparative studies.

Present Position: Head, Air Pollution Monitoring, National Air and Climate Change Center

Previous Positions: Supervisor, Air Pollution Monitoring Network, Air Pollution Bureau, 2007-11
Staff, Air Pollution Bureau, 1993-2007

Education/Training: B.S., Chemistry, Alzahra University, Tehran, 1993

Memberships: Representative, National Working Group for Air Pollution and Non-Communicable Diseases, 2012

Publications:
“Desert Wetlands Restoration, Biocompatible and Effective Approach to Elimination of Pollution from Haze,” Third National Conference on Combating Desertification and Sustainable Development of Iran Desert Wetlands, Arak, Iran, 2012
“Evaluate Air Pollution and Air Quality Index (AQI) Based on Air Pollution Stations Measurement in Tehran Using the Geographic Information System (GIS),” First National Conference on Air Pollution and Noise Management, Tehran, Iran, 2012
“Comparative study of air pollution in major cities of the country,” Conference of the Environmental Crisis and their Rehabilitation Methodologies, Ahwaz, Iran, 2010
“Estimation of diffuse pollution from agricultural activities and methods for reducing pump energy,” Fourth Rural and Village Development Conference, Chabahar, Iran, 2000
Perpetration and issue of Air Pollution statistics and data tables (three volumes), Department of the Environment of Iran, 1994-96
Prof. (Ms.) Roya KELISHADI

Prof. Roya Kelishadi is Professor of Pediatrics at the Isfahan University of Medical Sciences. She researches primary prevention of chronic non-communicable diseases by focusing on environmental modifiable risk factors from early life. She also leads the Child Growth and Development Research Center and the Bureau of Scientific Resources based at the same university.

**Present Position:** Professor, Pediatrics Department, Isfahan University of Medical Sciences

**Concurrent Positions:**
- Head, Preventive Pediatric Cardiology Department, Isfahan University of Medical Sciences
- Head, International Affairs Unit, Isfahan University of Medical Sciences
- Deputy for Research, Isfahan University of Medical Sciences
- Director, Bureau of Scientific Resources, Isfahan University of Medical Sciences
- Founder and Dean, Child Growth and Development Research Center, Isfahan University of Medical Sciences
- Founder and Editor-in-Chief, *International Journal of Preventive Medicine*

**Education/Training:**
- Specialty in Pediatrics, Isfahan University of Medical Sciences, 1992
- M.D., Isfahan University of Medical Sciences, 1987
- Completed numerous workshops hosted both in Iran and internationally

**Memberships:**
- World Association of Medical Editors
- Council of Nutrition and Physical Activity, American Heart Association
- Council on Cardiovascular Disease in Young, American Heart Association
- American Academy of Pediatrics
- Ambulatory Pediatric Association
- International Pediatric Association

**Publications:**
- Kelishadi, R., and Poursafa, P., “Impact of Climate Change and Air Pollution on Dyslipidemia and the Components of Metabolic Syndrome,” in *Dyslipidemia from Prevention to Treatment*, In Tech Publisher, 2012
Mr. Vahid MANSOURI

Mr. Vahid Mansouri is a lecturer on anatomy and cell biology at the Shahid Beheshti University of Medical Sciences. His research interests focus primarily on embryology and gynecology.

**Present Position:** Assistant and Lecturer, Anatomy and Cell Biology, Shahid Beheshti University of Medical Sciences

**Concurrent Position:** Embryology Assistant, IVF Section, Gynecology Department, Taleghani Hospital, Shahid Beheshti University of Medical Sciences

**Previous Positions:**
- Supervisor of Anatomy and Cell Biology Department, Shahid Beheshti University of Medical Sciences, 2007-13
- Head, Office of Education, Shahid Beheshti University of Medical Sciences, 2007-09

**Education/Training:**
- Ph.D. Candidate, Shahid Beheshti University of Medical Sciences
- M.S., Human Anatomy, College of Medicine, University of Esfahan, 2003
- B.S., Biology, University of Tehran, 1989

**Memberships:**
- Medical Proteomics Research Center, Shahid Beheshti University of Medical Sciences
- Iranian Association of Anatomists
- Medical Proteomics Association

**Publications:**
Dr. (Mr.) Yousef RASHIDI

Dr. Yousef Rashidi is a Lecturer in the Mechanical Engineering Department of Sharif University of Technology. He also serves as CEO of Air Quality Control Company in Tehran, which allows him to supervise multiple air and noise monitoring stations and serve as the representative of Tehran in Air Quality Action Plan Committees at the local and national levels.

Present Position: Lecturer, Mechanical Engineering Department, Sharif University of Technology

Concurrent Positions: CEO, Air Quality Control Company
Lecturer, Chemical Engineering Department, Amirkabir University of Technology

Previous Positions: Head, Technical and Research Division, Air Quality Control Company, 2002-03
Head, Modeling and Simulation Section, Air Quality Control Company, 1998-2002
Expert, Modeling and Simulation Section, Air Quality Control Company, 1996-98

Education/Training: Ph.D., Chemical Engineering, Amirkabir University of Technology, Tehran, 2005
M.S., Chemical Engineering, Amirkabir University of Technology, Tehran, 1995
B.S., Chemical Engineering, Amirkabir University of Technology, Tehran, 1992

Ms. Saviz SEHATKASHANI

Ms. Saviz Sehatkashani serves as a Weather Forecaster with the Iranian Meteorological Organization. In this capacity, she forecasts aviation and marine weather, as well as air pollution and dust, and issues early warnings in collaboration with Public Weather Services. Ms. Sehatkashani also teaches undergraduates studying meteorology at Azad University.

Present Position: PhD Candidate, Department of Meteorology, Science and Research Branch, Islamic Azad University in Tehran

Previous Positions: Expert, Air Chemistry, Ozone and Air Pollution, Atmospheric Science and Meteorological Research Center (ASMERC), Tehran, 2007-11
Expert, International Affairs, Vice President’s Office, World Meteorological Organization (WMO), Tehran, 2005-07
English Instructor, English Institute of Tehran University and Iran Language Institute (ILI), 2000-05

Education/Training: Ph.D. Candidate, Meteorology, Science and Research Branch, Azad University of Tehran, Iran, 2009-present
M.S., Meteorology, Science and Research Branch of Azad University of Tehran, Iran, 2004-07
B.S., Physics, Azad University of Karaj, Iran, 2000-04

Memberships: Reviewer of “Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation,” Intergovernmental Panel on Climate Change (IPCC) Report, 2010
Reviewer of “Special Report on Renewable Energy Sources and Climate Change Mitigation SRREN,” IPCC Report, 2010

Publications: “Enhancement of Dust Phenomenon in West and South West of Iran by MODIS,” The First International Conference on Dust Haze and Management of Factors and Consequences, Lorestan University, Khoramabad, May 14-16, 2013
“Dust Frequency Classification Using Synoptic Meteorological Stations Data in West and South West of Iran,” The First International Conference on Environmental Crisis and Its Solution, Kish Island, February 13-14, 2013
“Utilization of MM5 Model for simulation of Northerly surface winds in south eastern terrain of Iran in summer and winter,” Presented in the 8th Numerical Conference, Tehran, 2009
Dr. (Mr.) Majid SHAFIE POUR MOTLAGH

Professor Majid Shafie-Pour Motlagh serves on the Faculty of Environmental Engineering at the University of Tehran. In this capacity, he pursues research interests in air pollution monitoring and transportation policies. Prof. Motlagh has participated in numerous conferences and scientific boards, as well as collaborations with international organizations.

**Present Position:** Professor, Environmental Engineering, University of Tehran

**Concurrent Position:** Member of Board of Environmental Engineering, Faculty of Environment, University of Tehran

**Previous Positions:**
- Member of Board of Civil and Environmental Engineering Faculty, K.N. Toosi University of Technology, 2001-05
- Member of Board of Environmental Engineering, Faculty of Environment, University of Tehran, 1992-96
- Member of Board of Mechanical Engineering, Faculty of Engineering, University of Tehran, 1989-1992
- Member of Board, Brunel University, England, 1989

**Education/Training:**
- Post-Doctorate, Mechanical Engineering (Energy and Air Pollution), Brunel University, United Kingdom, 1989
- Post-Doctorate, Mechanical Engineering (Energy and Environment), University of Bath, United Kingdom, 1988
- Ph.D., Mechanical Engineering (Energy and Engine), University of Bath, United Kingdom, 1987
- M.S., Mechanical Engineering, University of Bath, United Kingdom, 1987
- B.A., Mechanical Engineering, Thames University of London, United Kingdom, 1983
- Numerous certificates from various institutions including Harvard Kennedy School of Government, the World Bank and the Iranian Department of Environment

**Memberships:**
- Scientific Board, Conference on Traffic Engineering in Iran
- Scientific Board, Energy Conference
- Scientific Board, National Seminar in Energy, Global Energy Council
- National Committee on Energy in the Islamic Republic of Iran
- Scientific Board, *Clean Air Journal*, AQC, Tehran Municipality
- Research Council, Chemistry of Atmosphere, Ozone and Air Pollution, Meteorology Organization
- Research Council of Environmental Projects
- Iran Environmental Specialists Society
- Iran Mechanical Engineering Society
- Mechanical Engineering Society, United Kingdom
- The Society of Executive Managers of the Country
Iranian Graduates from the Universities of Europe, Canada and the United States

**Publications:**


“An Investigation of Exhaust Gas Energy Transfer Using Variable Valve Motion,” ASME, USA, 1992
Dr. Mohammad Soltanieh

Professor Mohammad Soltanieh has received his PhD and MS degrees from the State University of New York (SUNY) at Buffalo and his BS from Sharif University of Technology, Tehran, Iran. He has been a visiting professor at MIT, RPI and SUNY. Dr. Soltanieh has over 35 years of academic and executive experiences in multidisciplinary areas of chemical engineering, energy and environment, climate change and public policy development. Since 2001 he has served as the National Climate Change Project Manager in the Department of Environment (DOE) of Iran, where he has been responsible for preparation of the National Communications to the United Nations Framework Convention on Climate Change (UNFCCC). The first and second national communications have already been submitted to the UNFCCC and the third one is in progress. In this responsibility, he has also helped the DOE to develop the National Rules of Procedure for implementation of the UNFCCC and the Kyoto Protocol. In addition, he has been the project manager for the GEF/World Bank project on Tehran Transport Emission Reduction Project during 1993-1995.

He has published over 65 papers in international journals and over 100 papers presented at national and international conferences. He is a founding member of several scientific societies including the Iranian Association of Chemical Engineers and Iran Energy Association, an affiliate member of the Academy of Sciences of Iran, a member of the National Sustainable Development Committee, and serves on the editorial board of seven scientific journals. He is a distinguished professor and the winner of environmental awards and recognitions. Dr. Soltanieh is a Nobel Laureate for Peace in 2007 for his contribution to the IPCC activities on climate change.

**Present Position:**
Professor of Chemical and Petroleum Engineering
Sharif University of Technology

**Concurrent Position:**
National Climate Change Project Manager in the Department of Environment (DOE) of Iran

**Education/Training:**
PhD, State University of New York (SUNY) at Buffalo
MS, State University of New York (SUNY) at Buffalo
BS, Sharif University of Technology

**Publications:**


H. Maghsoudi, M. Soltanieh, H. Bozorgzadeh and A.


Prof. Nasser TALEBBEYDOHKTI

Nasser Talebbeydokhti is the Professor of Civil and Environmental Engineering and Head of Environmental research and Sustainable Development Center at the Shiraz University. Professor Talebbeydokhti arrived at Shiraz University in 1984, from Oregon State University, and has expertise in hydraulics and environmental engineering, with particular emphasis in water resources engineering, environmental impact assessment and environmental studies. He earned his M.S. and Ph.D. degrees in Civil and Environmental Engineering at the Oregon state University in 1980 and 1984. His B.S. is from Tehran University (1975). Dr. Talebbeydokhti has been a member of a number of the National Research Council's committees and he is Editor-in-Chief of Journal of Science and Technology, Transactions of Civil Engineering and member of Academy of Sciences of Iran.

Present Position: Professor, Civil and Environmental Engineering Shiraz University

Concurrent Positions: Editor-in-Chief of Journal of Science and Technology, Transactions of Civil Engineering

Education/Training: PhD, Civil and Environmental Engineering, Oregon State University MS, Civil and Environmental Engineering, Oregon State University BS, Tehran University

Select Publications:


improving the prediction of artificial neural network," International journal of Food, Agriculture & Environment- JFAE, Vol 8.(3 & 4) – 2010(ISI)

Talebbehokhti, N. and B. Banihashemi, Chapter 13: Application of Environmental Flow in Developing Countries: Methods and Challenges, Water Management in Iran and The United States, Editor, Henry Vaux Jr., University of California, Rosenberg International Forum on water Policy, 2010, PP220-245

Dr. (Mr.) Masud YUNESIAN

Prof. Masud Yunesian serves as a professor of Epidemiology in the School of Public Health in the Tehran School of Medical Sciences. In this role, he works with graduate students on their dissertations as a methodological advisor and supervisor. His research interests are focused on environmental epidemiology, including assessing the health consequences of water and air pollutants. Prof. Yunesian also serves as Manager of Research Affairs at the Tehran University of Medical Sciences, where he evaluates research proposals for methodological and ethical soundness.

Present Position:  Professor of Epidemiology, School of Public Health, Tehran University of Medical Sciences

Concurrent Positions:  Manager of Research Affairs, Tehran University of Medical Sciences
                        Associate Director, Institute for Environmental Research

Previous Positions:  Associate Professor of Epidemiology, School of Public Health, Tehran University of Medical Sciences, 2007-12
                        Assistant Professor of Epidemiology, School of Public Health, Tehran University of Medical Sciences, 2002-07
                        Vice Dean for Research, School of Public Health, Tehran University of Medical Sciences, 2004-05

Education/Training:  Ph.D., School of Public Health, Tehran University of Medical Sciences, Tehran, 2001
                        M.D., School of Medicine, Tehran University of Medical Sciences, Tehran, 1995

Memberships:  Iranian Epidemiological Association
                        Iranian Association of Environmental Health

                    Qorbani, M., Yunesian, M., Fotouhi, A., Zeraati, H., and Sadeghian, S., “Effect of air pollution on onset of acute coronary syndrome in
susceptible subgroups,” Eastern Mediterranean Health Journal (EMHJ), Vol. 18, No. 6, 2012
American Participant Bios

Mehrdad Arjomandi

Present Position: Assistant Professor In-residence of Medicine

Concurrent Positions: 2006-present, Associate Director, Human Exposure Laboratory, University of California San Francisco
2008-present, Assistant Professor In-residence of Medicine, University of California San Francisco, San Francisco VA Medical Center, Division of Pulmonary and Critical Care Medicine
2011-present Academic Editor, Public Library of Science (PLoS) Journal

Previous Positions: 2003-2006 Clinical Instructor, University of California San Francisco, Division of Pulmonary & Critical Care Medicine
2006-2008 Assistant Adjunct Professor of Medicine, University of California San Francisco, Divisions of Lung Biology Center and Occupational & Environmental Medicine

Education/Training: University of California San Diego, La Jolla, CA B.A. 1988-1991, Molecular Biology
Stanford University, Stanford, CA M.D., 1991-1996, Medicine
University of California, Los Angeles, CA Internship & Residency, 1996-1999
University of California, San Francisco, CA Fellowship 2000-2003 Pulmonary & Critical Care Medicine
University of California, San Francisco, CA Fellowship, 2000-2003, Advanced Training in Clinical Research
Veterans Affairs Cooperative Study Program Certificate 2009 Clinical Trial Design Course
The Jackson Laboratory (NIH-sponsored) Certificate 2010, Genetic Approaches to Complex Heart, Lung, and Blood Diseases


M Arjomandi, JM Galanter, S Choudhry, C Eng, D Hu, K Beckman, R Chapela, J Rodriguez-Santana, W Rodriguez-Cintron, J Ford, PC Avila, EG


DONALD R. BLAKE, PHD

Dr. Blake is the head of the Whole Air Sample (WAS) Measurements lab at the University of California, Irvine. The mission of this lab is that: “We collect whole air samples and then return them to our UC Irvine laboratory for analysis of selected C2-C10 hydrocarbons, C1-C2 halocarbons, C1-C5 alkyl nitrates, some sulfur gases and a few oxygenated gases. We can also be a backup for methane, carbon monoxide, and carbon dioxide.”

Present Position: Professor of Chemistry and Earth System Science
Department of Chemistry, University of California Irvine, Irvine, CA

Education/Training: B.S. in Chemistry, University of California Los Angeles, 1978
M.S. in Chemistry, University of California Irvine, 1980
Ph.D. in Chemistry, University of California Irvine, 1984

Memberships: American Chemical Society
American Geophysical Union
American Association for the Advancement of Science
Vietnam Veterans of America


“Characterization of Trace Gases Measured over Alberta Oil Sands Mining Operations: 76 Speciated C2-C10 Volatile Organic Compounds (VOCs), CO₂, CH₄, CO, NO, NO₂, NOy, O₃ and SO₂” Atmospheric Chemistry and Physics 10, 23, 1193-11954, DOI: 10.5194/acp-10-11931-2010, 2010. I. J. Simpson, N. J. Blake, B. Barletta, g. S. Diskin, H. E.


“Reduced Methane Growth Rate Explained by Decreased Northern Hemisphere Microbial Sources” Nature 476, 7359, 194-197, DOI: 10.1038/nature10259 2011. K. F. Ming, S. Tyler, J. Randerson, and D. R. Blake
Arezoo CAMPBELL, PhD

Dr. Campbell is an Associate Professor at Western University of Health Sciences (WesternU). She received her Ph.D. in Toxicology from the University of California, Irvine (UCI) in 1999 and was a postdoctoral fellow at UCI from 2000-2002. Her research focus was in metal-induced neurotoxic responses. From 2002 to 2006, she was an assistant adjunct professor in the Department of Community and Environmental Medicine (UCI). In 2006 Dr. Campbell joined WesternU. The main focus of her research is to determine how aberrant induction of innate immune responses may accelerate the pathogenesis of neurodegenerative disorders. Currently her lab is investigating the potential of particulate matter, which is present in air pollution, to trigger an inflammatory response in the CNS. She serves on the editorial board of several journals including Particle & Fibre Toxicology, Journal of Nanoneuroscience, and Conference Papers in Neuroscience. She has also served as a grant reviewer for Alzheimer’s Association. Dr. Campbell is co-editor of a book entitled ‘Inflammatory Events in Neurodegeneration’.

**Present Position:** Associate Professor at Western University of Health Sciences

**Concurrent Positions:**
- Editorial Board, Particle & Fibre Toxicology,
- Editorial Board Journal of Nanoneuroscience,
- Editorial Board, Conference Papers in Neuroscience

**Previous Positions:**
- Assistant Adjunct Professor, Department of Community and Environmental Medicine University of California, Irvine, 2002-2006
- Post-doctoral fellow, University of California, Irvine, 2000-2002

**Education/Training:** PhD, Toxicology from the University of California, Irvine, 1999

**Select Publications:**

- Shaligram S., Campbell A. (2013) Toxicity of copper salts is dependent on solubility profile and cell type tested. Toxicology in Vitro. 27: 844-851.


Donald DABDUB, PhD

Dr. Dabdub’s main research efforts are to develop new physics and chemistry for air quality models, to design new algorithms for the numerical solution of the governing equations of air pollution dynamics, and to study the impact of various energy-related scenarios on urban airsheds.

His research is conducted in two areas: atmospheric sciences and computational sciences. Working in the area of atmospheric sciences, his work is aimed at the mathematical modeling of urban and global air pollution, understanding the dynamics of atmospheric aerosols and global climate change. Within the realm of computational sciences, Dr. Dabdub is interested in massively parallel computations, the numerical analysis of partial differential equations, and the development of problem solving environments.

His current activities include a modeling study of Cl₂ formation from aqueous NaCl particles; development of a semi-Lagrangian flux scheme for the solution of the aerosol condensation/evaporation equation; development of a two-level time-marching scheme using splines for solving the advection equation; and an investigation into the effect of alveolar volume and sequential filling on the diffusing capacity of the lungs.

His work can be applied to foster a better understanding of air pollution and the dynamics of global climate change.

**Present Position:** Professor, Mechanical and Aerospace Engineering

**Education/Training:**
- B.S., Lehigh University, Chemical Engineering, 1990
- M.S., California Institute of Technology, Chemical Engineering, 1992
- Ph.D., California Institute of Technology, Chemical Engineering, 1995

**Select Publications:**
- Impact of HONO sources on the performance of mesoscale air quality models. Gonçalves M., Dabdub D., Chang W.L., Jorba O. and Baldasano J.M. Accepted.
HFC-152a and HFC-134a emission estimates and characterization of CFCs, CFC replacements, and other halogenated solvents measured during the 2008 ARCTAS campaign (CARB phase) over the South Coast Air Basin of California. Barletta B., Nissenson P., Meinardi S., Dabdub D., Rowland F., VanCuren R. A., Pederson J. and Blake D. R. *Atmospheric Chemistry and Physics* **10**, (2011) 2655-2669. doi: 10.5194/acp-11-2655-2011 [PDF][Support Info]


Derek DUNN-RANKIN, PhD

Dr. Dunn-Ranking has research interests in: In-situ optical diagnostics in multiphase flows; generation, transport, and deposition of combustion generated particulate; droplets and sprays; control of combustion; I.C. engines; electric field and flame interactions; flow, spray, and combustion of emulsions; electrosprays; small-scale power; coal combustion; methane hydrate combustion.

Present Position: Professor and Chair, Mechanical & Aerospace Engineering University of California, Irvine

Previous Positions: Professor, Dept. of Mechanical and Aerospace Engineering, University of California, Irvine, July 1998-June 2009
Assistant and Associate Professor, Dept. of Mechanical and Aerospace Engineering, University of California, Irvine, July 1987-June 1998
Post-Doctoral Researcher, Combustion Research Facility, Sandia National Laboratories, Livermore, California

Awards and Recognitions: Oppenheim Prize – Institute for the Dynamics of Explosions and Reactive Systems, 2013; Senior Member, Optical Society of America, 2011; Mechanical and Aerospace Engineering Professor of the Year, 2009; Japan Society for the Promotion of Science (JSPS) Fellowship, 2008; Mechanical and Aerospace Engineering Professor of the Year, 2007; Team Award for Teaching Excellence, UCI Henry Samueli School of Engineering, 2005; Society of Automotive Engineers Faculty Advisor of the Year, 2003; UCI Excellence in Undergraduate Research Award, 1999; UCI Excellence in Undergraduate Education Award, 1998; Fulbright Scholar to Imperial College, London, 1996-1997; UCI SURF Program Mentor of the Year, 1994; UCI School of Engineering Outstanding Assistant Professor, 1990/1991; Society of Automotive Engineers Ralph R. Teetor Educational Award, 1991; UCI School of Engineering Instructor of the Year, 1990/1991; National Science Foundation Presidential Young Investigator, 1989; AFOSR Summer Faculty Research Fellowship, 1988.

Education/Training: B.S. Mechanical Engineering (1980), University of California, Santa Barbara
M.S. Mechanical Engineering (1984), University of California, Berkeley
Ph.D. Mechanical Engineering (1985), University of California, Berkeley

Professional Activities: Member: The Combustion Institute; Optical Society of America; American Association for Aerosol Research; GAeF; Society of Automotive Engineers; Institute for Liquid Atomization and Spray Systems; American Society of Engineering Education; American Institute of Aeronautics and Astronautics.
Committees: Board of Directors and Treasurer, The Combustion Institute; Treasurer, Institute for the Dynamics of Explosions and Reactive Systems (IDERS); past-Chair, Executive Committee, Western States Section/The Combustion Institute; Editorial Board, Atomization and Sprays, Progress in Energy and Combustion Science, Combustion Science and Technology; Chair, 1st and 2nd Engineering Foundation Workshop on Lean Combustion Technology and its Control; Program Chair, 19th International Colloquium on Dynamics of Explosions and Reactive Systems.

Select Publications:


Andrew GRIESHOP, PhD

Dr. Andy Grieshop has been an Assistant Professor in the Department of Civil, Construction and Environmental Engineering, North Carolina State University since January, 2012. Dr. Grieshop’s research focuses on interactions between energy use and the environment, and more specifically on improving our technical understanding of the emission and atmospheric transformations of air pollutants. This work aims to inform effective policies to improve air quality and mitigate climate impacts in both developed and developing countries. Ongoing research includes a collaborative project to quantify the emission, indoor concentration, and health and climate impacts of two cookstove replacement programs in rural India, and field measurements to characterize the volatility of organic aerosols during an intensive, multi-investigator field study in the southern US conducted during the Summer of 2013. His work integrates laboratory and field based experimentation with modeling and policy analysis efforts to address environmental problems. He teaches courses at the graduate and undergraduate levels. Dr. Grieshop received his BS in Mechanical Engineering from UC Berkeley and his MS in Mechanical Engineering and PhD in Mechanical Engineering and Engineering and Public Policy from Carnegie Mellon University. Before joining NC State he was a Postdoctoral Research Fellow at the University of British Columbia.

Present Position: Assistant Professor in the Department of Civil, Construction and Environmental Engineering, North Carolina State University

Previous Positions: Postdoctoral Research Fellow, University of British Columbia

Education/Training: BS in Mechanical Engineering, UC Berkeley
MS in Mechanical Engineering, Carnegie Mellon University
PhD in Mechanical Engineering and Engineering and Public Policy, Carnegie Mellon University

Select Publications:


Robert GRIFFIN, PhD

Dr. Robert Griffin is a full professor in the Department of Civil and Environmental Engineering at Rice University in Houston, Texas. He received a Ph.D. in Chemical Engineering with a minor in Environmental Engineering Science in 2000 from the California Institute of Technology in Pasadena, California. His field of expertise is atmospheric chemistry, with a focus specifically on field work, laboratory experiments, and computational simulations that elucidate the processes that lead to particulate matter formation in the troposphere. Dr. Griffin has published more than 60 scientific papers in this field. He is a past recipient of a National Science Foundation CAREER Award and a University Corporation for Atmospheric Research Faculty Fellowship. Dr. Griffin currently serves as one of the Rice University member representatives to the University Corporation for Atmospheric Research and as a scientific advisory committee member for several groups interested in air quality in Texas. He also is a member of the American Association for Aerosol Research, the American Geophysical Union, the American Chemical Society, and the Association of Environmental Engineering and Science Professors.

**Present Position:**
Professor, Department of Civil and Environmental Engineering, Rice University

**Previous Positions:**
Associate/Assistant Professor, Department of Earth Sciences and Climate Change Research Center, University of New Hampshire, 2003-2008
Assistant Professor, Department of Civil and Environmental Engineering, Duke University, 2000-2002
Research Associate, Arthur D. Little, Inc., 1993-1995

**Education/Training:**
Doctor of Philosophy, Chemical Engineering with Minor in Environmental Engineering Science, California Institute of Technology, Pasadena, CA, 2000
Master of Science, Chemical Engineering, California Institute of Technology, Pasadena, CA, 1997
Bachelor of Science, *summa cum laude*, Chemical Engineering, Tufts University, Medford, MA, 1993

**Memberships:**
American Association for Aerosol Research
American Chemical Society
American Geophysical Union
Association of Environmental Engineering and Science Professors
Texas Commission on Environmental Quality Air Quality Research Program Independent Scientific Advisory Committee
Houston Advanced Research Corporation Scientific Advisory Committee for BEETEX Campaign (scheduled 2014)

**Select Publications:**


Mohsen NAZEMI

Mohsen Nazemi is the Deputy Executive Officer for the Office of Engineering and Compliance and he is responsible for planning, organizing and directing all engineering and compliance programs for over 27,000 stationary sources. His responsibility includes permitting and enforcement for all RECLAIM, Title V and other large, medium and small facilities operating equipment which emit or control air pollution within AQMD’s four-county jurisdiction.

He also serves as the Permit Streamlining Ombudsman for AQMD, overseeing AQMD’s Permit Streamlining Office, which is working to make the permit process more efficient and customer service oriented. In addition, Mohsen is responsible for the AQMD’s Economic Development and Business Retention Program, which helps businesses while ensuring that they achieve regional clean air standards.

For over 30 years, Mohsen has held several different positions within AQMD. Among them, he served as Assistant Deputy Executive Officer in the Office of Engineering and Compliance with primary responsibility for engineering and permitting of all stationary sources. Prior to that, he served as Senior Manager in charge of the Refinery/Energy & Outer Continental Shelf section in the Office of Stationary Source Compliance. In this position Mohsen was responsible for rule development, permitting and compliance of all refineries, oil and gas production and transfer facilities and all public and private power producing facilities. Before this, he headed AQMD’s Air Toxics and Global Climate Changes Strategies group. He also was responsible for policy development and coordination of state and federal programs, as well as permitting of all cogeneration, resource recovery and liquid and solid waste management facilities.

Before joining AQMD, Mohsen worked for the private sector developing various catalytic processes used for NOx reduction and for Hydro Desulfurization (HDS) and Fluidized Catalytic Cracking (FCC) operations. Mohsen Nazemi holds an M.S. degree in chemical engineering from University of California at Los Angeles and a B.S. degree in chemical engineering from California State University at Long Beach. He also earned his Professional Engineer certification in chemical engineering from the State of California as well as his Certified Hazardous Materials Manager credentials from the National Academy of Hazardous Materials Management in Rockville, Maryland, and from the University of California at Irvine. Mohsen has also taught several environmental courses at University of California at Irvine.

**Present Position:** Deputy Executive Officer for the Office of Engineering and Compliance, South Coast Air Quality Management District

**Education/Training:**
- MS, Chemical Engineering, University of California, Los Angeles
- BS, Chemical Engineering, California State University, Long Beach
- Certified Hazardous Materials Manager credentials, National Academy of Hazardous Materials Management and University of California at Irvine
Suzanne PAULSON, PhD

Dr. Suzanne Paulson is Professor and Vice Chair of the Department of Atmospheric & Oceanic Sciences, and Professor in the Institute of the Environment at UCLA, where she serves as the director of the Air Pollution Research Center. She earned a B.A. in Chemistry from the University of Colorado, and a PhD in Environmental Engineering Science from the California Institute of Technology. Her current research studies the impact of tiny naturally occurring and human-made particles on human health and the Earth’s climate. She teaches climate change and air pollution to undergraduate and graduate students and has given numerous invited public lectures on air pollution and climate change. She has also been featured in numerous radio, print and video interviews for her work in air quality in the Los Angeles area.

Currently Dr. Paulson serves on the Advisory Committee for the European Union Research program on Atmospheric Chemistry Infrastructure, and as a member of the Research Screening Committee for the California Air Resources Board, and the science advisory board for the EPA Clean Air Research Center at Georgia Tech. She is the recipient of a National Science Foundation CAREER award for her research.

Present Position: Professor and Vice Chair, Department of Atmospheric and Oceanic Sciences, University of California Los Angeles

Concurrent Position: Director, Air Pollution Research Center

Education/Training: BA, Chemistry, University of Colorado
MS, California Institute of Technology
PhD, Environmental Engineering, California Institute of Technology

Select Publications:


James Jay (Jamie) SCHAUER, PhD

Dr. James J. Schauer is a Professor in the College of Engineering at the University of Wisconsin-Madison. At the University of Wisconsin-Madison, Prof. Schauer serves as the Associate Chair of the Civil and Environmental Engineering Department for the Environmental Engineering and Science Division, the Director of the Water Science and Engineering Laboratory, and a core faculty member of the Environmental Chemistry and Technology Program. He also serves as the Director for Air Quality at the Wisconsin State Laboratory of Hygiene, which operates as part of the University of Wisconsin. Dr. Schauer received his Ph.D. in Environmental Engineering Science from the Caltech, his MS in Environmental Engineering from the UC-Berkeley and his BS degree in Chemical and Petroleum Refining Engineering from the Colorado School of Mines. He received an MBA from the University of Wisconsin-Whitewater. Dr. Schauer has previously worked in the chemical and petroleum refining industry as a Chemical Process Engineer and has helped commission and start-up large chemical facilities in Asia, Europe, North America, and Africa. He is a registered Professional Engineer (PE).

Dr. Schauer’s research focuses on the use of advanced chemical analysis and air pollution sampling techniques to understand the chemical composition of source emissions and atmospheric pollutant concentrations. These methods are being used to understand the origin and impacts of air pollutants including on urban areas, human health, sensitive ecosystems, and global climate change. Dr. Schauer has authored and co-authored more than 230 peer reviewed manuscripts in leading environmental science, environmental engineering and air pollution journals, which have been collectively cited over 9000 times. He is the recipient of the 2013 University of Wisconsin Kellet Faculty Award, the 2008 University of Wisconsin Romnes Faculty Award, the 2006 American Association of Aerosol Research Keneth T. Whitby Award, the 2002 Health Effects Institute Rosenblith Young Investigator Award, and the 2001 Haagan-Smit Award from the Atmospheric Environment journal. Prof. Schauer is as a lead author for the International Panel on Climate Change (IPCC) 5th Assessment Report Working Group III addressing mitigation of climate change associated with transport and is a member of the World Health Organization (WHO) International Agency for Research on Cancer (IARC) Monograph Working Group on “Ambient Air Pollution.”

Present Position: Professor, College of Engineering, University of Wisconsin-Madison

Concurrent Positions: Associate Chair of the Civil and Environmental Engineering Department, University of Wisconsin-Madison
Director of the Water Science and Engineering Laboratory
Core Faculty, Environmental Chemistry and Technology Program
Director for Air Quality, Wisconsin State Laboratory of Hygiene

Education/Training: PhD, Environmental Engineering, Caltech
MS, Environmental Engineering, UC Berkeley
BS, Chemical and Petroleum Refining Engineering, Colorado School of Mines
MBA, University of Wisconsin-Whitewater
Select Publications:


Armin SOROOSHIAN, PhD

Dr. Sorooshian is an Assistant Professor of Chemical and Environmental Engineering at the University of Arizona with a joint appointment in Atmospheric Sciences. He received his BS degree in chemical engineering from the University of Arizona (2003, Summa Cum Laude) and his PhD from the California Institute of Technology (2008). His research focuses on the effect of aerosol particles on environmental and climate change, public health/welfare, and the hydrologic cycle. He uses a suite of synergistic methods for his research, including laboratory experiments, ground and airborne field measurements, modeling, and remote sensing observations. He has been involved with nine major aircraft field campaigns, including most recently the 2013 Nucleation in California Experiment (NICE) with the Navy Twin Otter aircraft and the 2013 Studies of Emissions and Atmospheric Composition, Clouds and Climate Coupling by Regional Surveys (SEAC4RS) with the NASA DC 8 aircraft. With funding through an Office of Naval Research Young Investigator Program Award, he served as Principal Investigator of two field campaigns with the Navy Twin Otter aircraft in the summers of 2011 and 2013 with a focus on studying aerosol-cloud-precipitation-radiation interactions. His recent work has also included investigating aerosol and precipitation characteristics in semi-arid and arid regions such as the North American Southwest and Iran.

Present Position: Assistant Professor of Chemical and Environmental Engineering, University of Arizona


Education/Training: BS, Chemical and Environmental Engineering, University of Arizona
MS, Chemical Engineering, California Institute of Technology
PhD, Chemical Engineering, California Institute of Technology

Select Publications:


*American Geophysical Union Research Spotlight Article


Barry WALLERSTEIN, D Env

Barry R. Wallerstein holds a doctorate in environmental science and engineering from the University of California at Los Angeles, and M.S. and B.S. degrees in biological science from the University of Southern California. He has over 30 years of experience in urban planning and environmental assessment, with an emphasis in air pollution control and public policy development. Dr. Wallerstein has served at SCAQMD in various positions since 1984, and was appointed Executive Officer in August 1997. Dr. Wallerstein has also worked as an Environmental Control Administrator for Northrop, and was a member of the rule development staff in the Mobile Source Division of the California Air Resources Board early in his career.

Dr. Wallerstein currently serves as Co-President of the National Association of Clean Air Agencies, on the Board of Directors of the California Air Pollution Control Officers Association, on the Mobile Sources Technical Review Subcommittee of the federal Clean Air Act Advisory Committee, and as an Ex Officio Member of the Executive Committee of the National Academy of Sciences’ Transportation Research Board. He also serves on a variety of advisory boards at UC Davis, UCLA, UC Riverside and USC, which focus on research and public-private partnerships to help identify coordinated solutions for Southern California’s regional urban challenges. His professional accomplishments were recognized by UCLA with his admission to the School of Public Health Alumni Hall of Fame.

Present Position: Executive Officer, South Coast Air Quality Management District

Concurrent Positions:
- Co-President of the National Association of Clean Air Agencies
- Board of Directors of the California Air Pollution Control Officers Association
- Mobile Sources Technical Review Subcommittee of the federal Clean Air Act Advisory Committee
- Ex Officio Member of the Executive Committee of the National Academy of Sciences’ Transportation Research Board

Membership:
- Advisory Board at UC Davis, UCLA, UC Riverside and USC
- School of Public Health Alumni Hall of Fame
Jennifer WILCOX, PhD

Jennifer Wilcox has been an Assistant Professor in the Department of Energy Resources Engineering at Stanford University since 2008. She received the 2007 ARO Young Investigator Award (Membrane Design for Optimal Hydrogen Separation), the 2006 ACS PRF Young Investigator Award (Heterogeneous Kinetics of Mercury in Combustion Flue Gas), and the 2005 NSF CAREER Award (Arsenic and Selenium Speciation in Combustion Flue Gas). Within her research group, she focuses on trace metal and CO$_2$ capture. Her research involves the coupling of theory to experiment to test newly-designed materials for sorbent or catalytic potential. She was recently selected to serve on a committee selected by the National Academy of Sciences to assess the role that Geoengineering may play in global climate change mitigation. She is the author of the first textbook on Carbon Capture, recently published in March 2012.

Current Position: Assistant Professor, Department of Energy Resources Engineering, Stanford University

Previous Positions: Assistant Professor, Department of Chemical Engineering, Worcester Polytechnic Institute (2004-08)

Education/Training: Ph.D, Chemical Engineering, University of Arizona (2000-04)
M.A., Physical Chemistry, University of Arizona (2002-04)
B.A., Pre-med; Mathematics, Wellesley College (1994-98)

Memberships: AIChE, 2000-present
North American Membranes Society, 2006-present
American Chemical Society, 2006-present

Selected Publications:


Jun Wu, PhD

Dr. Wu's research program focuses primarily on air pollution exposure assessment and environmental epidemiology. The overarching goal of our research is to more accurately characterize personal exposures to air pollutants and examine health effect due to air pollution exposure. Recent and current studies involve human exposure assessment studies (measurement and modeling), applications of geographical information system (GIS) and global positioning system (GPS) tracking in exposure assessment and epidemiological studies, and impact of air pollution exposure on pregnancy outcomes and respiratory illnesses.

Present Position:  
Associate Professor, Public Health, UC Irvine  
Associate Professor, Epidemiology, School of Medicine, UC Irvine

Education/Training:  
Ph.D., University of California, Los Angeles, 2004, Environmental Health Sciences

Membership:  
Member of International Society of Exposure Analysis  
Air and Waste Management Association

Select Publications:  


