



CURRICULUM VITAE

Eduardo P. Olaguer Senior Research Scientist

Houston Advanced Research Center (HARC)
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Education:

Ph.D. Meteorology, 1987
Massachusetts Institute of Technology, Cambridge, MA

S.M. Meteorology, 1982
Massachusetts Institute of Technology, Cambridge, MA

S.B. Physics, 1980
Massachusetts Institute of Technology, Cambridge, MA

Professional Experience:

Senior Research Scientist and Director of Air Quality Research, Houston Advanced Research Center, The Woodlands, TX

2003 - Present

Developed new modeling, monitoring, and data infrastructure tools, e.g.

- A neighborhood scale 3D Eulerian forward and adjoint air quality model,
- Computer Aided Tomography based on 4Dvar data assimilation method,
- A stand-off monitoring technique combining DOAS remote sensing, real time (~1Hz) in situ measurements, and plume inverse modeling,
- Google Maps/Earth-based Web portal for Houston air quality data.

Played a major role in organizing the 2006 Second Texas Air Quality Study (TexAQS II) and 2009 Study of Houston Atmospheric Radical Precursors (SHARP) field campaigns, including the selection, funding, and management of:

- Aircraft and smart balloon flights,
- Surface (mobile and stationary) and tower measurements, and
- Real-time meteorological (MM5) and air quality (CMAQ) forecasting.

Air quality research program manager for the Texas Environmental Research Consortium (TERC). Responsibilities included:

- Managing over \$16 million of Texas state and US federal funds;
- Writing strategic research plans and science synthesis reports;
- Organizing public meetings of TERC Science Advisory Committee;
- Reporting to the TERC Board and Executive Director;
- Collaborating with Texas Commission on Environmental Quality (TCEQ) and EPA Region 6 in providing input to ozone State Implementation Plan;
- Conducting outreach to multiple stakeholders from local government, industry, regional planning organizations, and environmental NGOs;

- Qualifying research teams, selecting research projects, drafting Scopes of Work, and working with contracts staff in issuing research contracts;
- Assigning work to project managers, and supervising the work of technical support staff, including mentoring and performance evaluation; and
- Tracking and enforcing timetables and deliverables, and reviewing reports.

Managed projects with major regulatory impacts and/or public interest, e.g.

- An emission inventory study that led to a cap and trade scheme for industrial emissions of highly reactive VOCs in the Houston region,
- A source apportionment study that resulted in the expansion of the Dallas-Ft. Worth (DFW) ozone non-attainment area by the EPA,
- An air quality impact assessment of 17 proposed new coal-fired power plants in eastern Texas that attracted national and media attention.

**Member Technical Staff 3, 4, MCNC, Research Triangle Park, NC
2000-2002**

Developed the Global Balance Environment Model (GLOBE), a 3-D global atmospheric and multi-media model, and documented the model in peer-reviewed literature and conference proceedings.

Won a contract from Dow Agrosiences to assess the Global Warming Potential of Vikane (sulfuryl fluoride) using GLOBE.

Secured a NARSTO-sponsored research project to evaluate the urban and regional reactivity of VOCs using MAQSIP, a state-of-the-art 3-D Eulerian grid air quality model.

Wrote a successful proposal in collaboration with NASA to the American Chemistry Council to evaluate the impacts of North American emissions on tropospheric ozone over the North Atlantic.

**Project Leader, Environmental Specialist, The Dow Chemical Company, Midland, MI
1993-2000**

Provided scientific and issue management support on air pollution to product stewards, global businesses, executive management, and corporate subsidiaries such as Dow Europe and Dow Elanco.

Constructed the Dow Chemistry-Climate Model (DOWCCM), a 3-D global radiative-dynamical-chemical model of the atmosphere.

Evaluated the Ozone Depletion Potential of Telone (1,3-dichloropropene) for Dow Elanco using DOWCCM. Telone was later approved by the EPA as a substitute for methyl bromide in agriculture.

Served on state, federal, and international panels on atmospheric research.

Wrote proposals for and supervised external atmospheric chemistry research through various trade associations. Research projects included:

- Smog chamber/degradation product studies of oxygenated solvents;
- Assessments of VOC impacts on tropospheric ozone and climate; and
- Modeling of atmospheric impacts of styrene emissions.

**Senior Associate, ICF Incorporated, Washington, DC
1992-1993**

Provided modeling and risk assessment support to the EPA's climate change and stratospheric ozone protection programs.
Wrote portions of a technical guidance document for the Significant New Alternatives Program (SNAP) for Ozone Depleting Compounds.
Summarized alternatives for measuring and reporting UV-B exposure.

**Scientist IV, IT Corporation, Durham, NC
1991-1992**

Developed and evaluated models of human exposure for the EPA, including HAPEM and pNEM.
Ran the ISC dispersion model for industrial clients and the EPA.
Wrote a successful proposal to the American Petroleum Institute to summarize global warming research.
Provided litigation support involving a toxic release.

**Research Associate University of Washington, Seattle, WA
1988-1991**

Constructed radiative transfer and photochemical codes for a stratospheric model.

**Research Associate, Clarkson University, Potsdam, NY
1987-1988**

Developed efficient methods for modeling radiative transfer in the troposphere, stratosphere, and mesosphere.

**Research Associate, Massachusetts Institute of Technology, Cambridge, MA
1986-1987**

Investigated dynamical theories of the Antarctic ozone hole using a 3-D global model.

Honors and Awards:

2012	Editors' Citation for Excellence in Refereeing, Journal of Geophysical Research- Atmospheres
2012	Best Reviewers, Journal of the Air and Waste Management Association
2011	Marquis' Who's Who in America
1997	Strathmore's Who's Who
1980	Sigma Xi

Publications:

Peer-Reviewed Journal Articles

E. P. Olaguer, S. C. Herndon, B. Buzcu Guven, C. E. Kolb, M. J. Brown, and A. E. Cuclis, 2013; "Attribution of Primary Formaldehyde and Sulfur Dioxide at Texas City during SHARP/FLAIR Using an Adjoint Chemistry Transport Model," *J. Geophys. Res. Atmos.*, accepted for publication.

E. P. Olaguer, C. E. Kolb, B. Lefer, B. Rappenglück, R. Zhang, and J. P. Pinto, 2013; “Overview of the SHARP campaign: motivation, design, and major outcomes,” *J. Geophys. Res. Atmos.*, accepted for publication.

M. Levy, R. Zhang, A. Khalizov, J. Zheng, D. Collins, C. Reed, X.-Y. Yu, W. Luke, J. Jayne, and **E. Olaguer**, 2013; “Measurements of Submicron Aerosols in Houston, Texas during the 2009 SHARP Field Campaign,” *J. Geophys. Res. Atmos.*, in press.

B. Buzcu Guven, **E. P. Olaguer**, S. C. Herndon, C. E. Kolb, W. B. Knighton, and A. E. Cuclis, 2013; “Identification of the Source of Benzene Concentrations at Texas City during SHARP Using an Adjoint Neighborhood Scale Transport Model and a Receptor Model,” *J. Geophys. Res. Atmos.*, in press.

E. P. Olaguer, 2013; “Application of an Adjoint Neighborhood Scale Chemistry Transport Model to the Attribution of Primary Formaldehyde at Lynchburg Ferry during TexAQS II,” *J. Geophys. Res. Atmos.*, vol. 118, doi: 10.1002/jgrd.50406.

H. Zhang, J. Li, Q. Ying, B. Buzcu Guven, and **E. P. Olaguer**, 2013; “Source Apportionment of Formaldehyde during TexAQS 2006 using a Source-Oriented Chemical Transport Model,” *J. Geophys. Res. Atmos.*, vol. 118, 1525-1535.

E. P. Olaguer, 2013; “Response to Comments by the Texas Commission on Environmental Quality regarding ‘The Potential Near Source Ozone Impacts of Upstream Oil and Gas Industry Emissions’,” *J. Air and Waste Management Assoc.*, vol. 63, 127-128.

E. P. Olaguer, 2012; “Near Source Air Quality Impacts of Large Olefin Flares,” *J. Air and Waste Management Assoc.*, vol. 62, 978-988.

E. P. Olaguer, 2012; “The Potential Near Source Ozone Impacts of Upstream Oil and Gas Industry Emissions,” *J. Air and Waste Management Assoc.*, vol. 62, 966-977.

E. P. Olaguer, 2011; “Adjoint Model Enhanced Plume Reconstruction from Tomographic Remote Sensing Measurements,” *Atmos. Environ.*, vol. 45, 6980-6986, doi:10.1016/j.atmosenv.2011.09.020.

W. Vizuete, H. E. Jeffries, T. W. Tesche, **E. Olaguer**, and E. Couzo, 2011; “Issues with Ozone Attainment Methodology for Houston, Texas,” *J. Air and Waste Management Assoc.*, vol. 61, 238-253.

B. Buzcu Guven and **E. Olaguer**, 2011; “Source Attribution of Formaldehyde Concentrations in Houston during TexAQS II and TRAMP,” *Atmos. Environ.*, vol. 45, 4272-4280.

E. P. Olaguer, B. Rappenglück, B. Lefer, J. Stutz, J. Dibb, R. Griffin, W. H. Brune, M. Shauck, M. Buhr, H. Jeffries, W. Vizuete, J. P. Pinto, 2009; “Deciphering the Role of

Radical Precursors during the Second Texas Air Quality Study," *J. Air and Waste Management Assoc.*, vol. 59, 1258-1277.

L. Zhang, E. M. Constantinescu, A. Sandu, Y. Tang, T. Chai, G. R. Carmichael, D. Byun, D. and **E. Olaguer**, 2008; "An Adjoint Sensitivity Analysis and 4DVar Data Assimilation Study of Texas Air Quality," *Atmos. Environ.*, vol. 42, 5789-5806.

E. P. Olaguer, H. Jeffries, G. Yarwood and J. Pinto, 2006; "Attaining the 8-Hour Standard in East Texas: A Tale of Two Cities," *EM*, vol. 8, 26-30.

E. P. Olaguer, 2002; "The Distribution of the Chlorinated Solvents Dichloromethane, Perchloroethylene, and Trichloroethylene in the Global Atmosphere," *Environ. Sci. & Pollut. Res.*, vol. 9, 175-182.

E. P. Olaguer, H. Yang and K. K. Tung, 1992; "A Reexamination of the Radiative Balance of the Stratosphere," *J. Atmos. Sci.*, vol. 49, 1242-1263.

H. Yang, **E. Olaguer** and K. K. Tung, 1991; "Simulation of the Present-day Atmospheric Ozone, Odd Nitrogen, Chlorine and Other Species Using a Coupled 2-D Model in Isentropic Coordinates," *J. Atmos. Sci.*, vol. 48, 442-472.

H. Yang, K. K. Tung and **E. P. Olaguer**, 1990; "Non-geostrophic Theory of the Zonally Averaged Circulation, Part II: Eliassen-Palm Flux Divergence and Isentropic Mixing Coefficient," *J. Atmos. Sci.*, vol. 47, 215-241.

R. G. Prinn and **E. P. Olaguer**, 1981; "Nitrogen on Jupiter: A Deep Atmospheric Source," *J. Geophys. Res.*, vol. 86, 9895-9899.

Peer-Reviewed Book Chapters

E. P. Olaguer, 2002; "An Efficient 3-D Model for Global Circulation, Transport, and Chemistry," in *The IMA Volumes in Mathematics and Its Applications, Atmospheric Modeling*, vol. 130, D. P. Chock and G. R. Carmichael, eds., Springer-Verlag, New York, pp. 205-276.

R. E. Dickinson, V. Meleshko, D. Randall, E. Sarachik, R. Silva-Dias, A. Slingo, A. Barros, O. Boucher, R. Cess, T. Charlock, L. Dümenil, A. Del Genio, R. Fu, P. Gleckler, J. Hansen, R. Lindzen, K. McNaughton, J. McWilliams, E. Maier-Reimer, G. Meehl, M. Miller, D. Neelin, **E. Olaguer**, T. Palmer, C. Penland, R. Pinker, D. Rind, V. Ramaswamy, A. Robock, M. Salby, C. Senior, M. Schlesinger, H. P. Schmid, Q. Q. Shao, K. Shine, H. Sundqvist, A. Vogelmann, A. J. Weaver, 1996; "Climate Processes," in *Climate Change 1995: The Science of Climate Change*, J. T. Houghton, L. G. Meira Filho, B. A. Callander, N. Harris, A. Kattenberg, and K. Maskell, eds., Second Assessment Report, Working Group I, Intergovernmental Panel on Climate Change, Cambridge University Press, Great Britain, pp. 193-228.

Peer-Reviewed Research Reports

E. P. Olaguer, B. Buzcu-Guven, Z. Vernon, T. H. Stock, and J. Kwon, 2011; "Development of an Integrated Database of Air Pollution and Exposure Data for Houston, Texas," Research Report No. 21, Mickey Leland National Urban Air Toxics Research Center, Houston, TX.

Magazine and News Articles

E. P. Olaguer, 1999; "The Reactivity Research Work Group," *Environ. Sci. & Pollut. Res.*, vol. 6, 199.

E. Olaguer, 1980; "An Inside View: The Evolving Personality of ESG (The Experimental Study Group)," *Technology Review*, vol. 87, A19-A21.

Research Management Reports

E. P. Olaguer et al., 2009; "The 2009 TERC Science Synthesis," Texas Environmental Research Consortium, Houston, TX.

G. Beatty, **E. Olaguer**, M. Sattler, C. Klaus, R. Alvarez, G. Carmichael, W. Carter, R. Dickerson, S. Hildebrand, J. Merrill, D. Mobley, R. Parry, J. Pinto, J. Scire, 2007; "Strategic Research Plan: 2007-2009," Texas Environmental Research Consortium, Houston, TX.

R. Dickerson, S. Hildebrand, C. Klaus, J. Merrill, D. Mobley, **E. Olaguer**, J. Pinto, and M. Sattler, 2007; "Synthesis of TexAQs II Preliminary Conclusions and Recommendations," Texas Environmental Research Consortium, Houston, TX.

E. P. Olaguer, G. Yarwood, H. Jeffries and J. Smith, 2005; "New Research for the Texas SIP: A Science – Policy Synthesis," Texas Environmental Research Consortium, Houston, TX.

J. Hall, **E. Olaguer**, D. Hitchcock, D. Allen, 2004; "Strategic Research Plan: 2004-2007," Texas Environmental Research Consortium, Houston, TX.

D. Allen and **E. Olaguer**, 2004; "State of the Science of Air Quality in Eastern Texas: Major Scientific Findings and Recommendations," Texas Environmental Research Consortium, Houston, TX.

U.S. Government Reports

E. P. Olaguer, D. W. Byun, J. A. Dege, and P. J. Ostrowski, 1999; "Environmental Conditions," VOC Reactivity Science Assessment, Reactivity Research Working Group, NARSTO.

U.S. Environmental Protection Agency, 1992; "An Assessment of Methodologies for Reporting Daily UV-B Levels to the Public," prepared by ICF Incorporated for the Global Change Division under Contract No. 68-D0-0102.

U.S. Environmental Protection Agency, 1992; "A Review of the Canadian Program for Public Reporting of UV Levels," prepared by ICF Incorporated for the Global Change Division under Contract No. 68-D0-0101.

T. Johnson, J. Capel, **E. Olaguer** and L. Wijnberg, 1992; "Estimation of Ozone Exposures Experienced by Urban Residents Using a Probabilistic Version of NEM," prepared by IT Corp. for U.S. EPA Office of Air Quality Planning and Standards under Contract No. 68-D0-0062.

T. Johnson, J. Capel, **E. Olaguer** and L. Wijnberg, 1992; "Estimations of Ozone Exposures Experienced by Residents of the ROMNET Domain Using a Probabilistic Version of NEM," prepared by IT Corp. for U.S. EPA Office of Air Quality Planning and Standards under Contract No. 68-D0-0062.

T. Johnson, J. Capel, R. Paul and **E. Olaguer**, 1992; "A Comparison of the Hazardous Air Pollutant Exposure Model (HAPEM) and the Human Exposure Model (HEM)," prepared by IT Corp. for U.S. EPA Emission Standards Division under Contract No. 68-D0-0062.

E. P. Olaguer, 1991; "Precipitation Data in Support of EPA 1990 Trends Report," prepared by IT Corp. for U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards under Contract No. 68-D0-0119.

Industry Reports

E. P. Olaguer, 2001; "Global Warming Potential of Sulfuryl Fluoride," MCNC report to Dow Agrosiences, Indianapolis, IN.

E. P. Olaguer, 1997; "The Ozone Depletion Potential of 1,3-Dichloropropene," Report No. HET K-006409-043, Health and Environmental Research Laboratory, The Dow Chemical Co., Midland, MI.

E. P. Olaguer, 1997; "The Dow Chemistry-Climate Model," Report No. HET T3.07-000-000-063, Health and Environmental Research Laboratory, The Dow Chemical Co., Midland, MI.

E. P. Olaguer, 1992; "Uncertainties in Current Models of Global Warming," prepared by IT Corp. for the American Petroleum Institute, Washington DC.

Conference Proceedings

E. P. Olaguer and J. P. Pinto, 2001; "A Three-Dimensional Model Assessment of the Global Distribution of Hexachlorobenzene," in *Organohalogen Compounds*, vol. 52, J. H. Yang, ed., Catholic University of Daegu, Korea, pp. 420-423.

E. P. Olaguer, 1998; "A Global 3-D Radiative-Dynamical-Chemical Model for Determining Large-Scale Impacts of Atmospheric Ozone Precursors," proceedings of

Photochemical Reactivity Workshop, U.S. Environmental Protection Agency, May 12-14, Durham, NC.

E. Olaguer, H. Yang and K. K. Tung, 1989; "Description of a Coupled 2-D Model of Dynamics, Radiation and Chemistry in Isentropic Coordinates," in *Two-Dimensional Intercomparison of Stratospheric Models*, C. H. Jackson, R. K. Seals and M. J. Prather, eds., NASA Conference Publication 3042, pp. 116-118.

H. Yang, K. K. Tung and **E. P. Olaguer**, 1988; "Two-D Model Simulation of Ozone Climatology and Year-to-year Variations," in *Proceedings of Quadriennial Ozone Symposium 1988*, Goettingen, Germany, R. D. Bojkov and P. Fabian, eds., Deepak Publishing Co., pp. 613-616.

Professional Memberships:

American Geophysical Union
American Meteorological Society
Air and Waste Management Association

Affiliations:

American Meteorological Society, Committee on Atmospheric Chemistry, 2012-Present
Journal of Geophysical Research – Atmospheres, Guest Editor, Special Section, Study of Houston Atmospheric Radical Precursors, 2012-2013
National Science Foundation, Pan American Advanced Studies Institute Organizing Committee, Air Quality at the Interface: Mega Cities and Adjacent Agroecosystems, 2011-2012
NASA Decision Support for Earth-Sun Science Research Results Proposal Review Panel, 2005-2010
Lamar University, Texas Air Research Consortium Science Advisory Board, 2008-2009
2005-2009 Mickey Leland National Urban Air Toxics Research Center, Houston Exposure to Air Toxics (HEATS) Review Committee, Workshop Panel, 2005-2009
Texas Commission on Environmental Quality, Science Coordination Committee, 2003-2006
Environmental Science and Pollution Research – International Editorial Board, 1999-2002
NARSTO Reactivity Research Work Group, 1998-2002
Styrene Information and Research Center, Air Fate Subgroup, 1998-2000
California Air Resources Board, Reactivity Research Advisory Committee, 1995-2000
Chemical Specialties Manufacturers Association, Vice-Chair, VOC Reactivity Task Group, 1995-2000
Chemical Manufacturers Association, Chair, Glycol Ethers Panels, VOC Work Group, Solvents Council, Atmospheric Reactivity Task Group, Atmospheric Research Council, Atmospheric Chemistry Technical Implementation Panel, 1994-2000
Intergovernmental Panel on Climate Change, Contributing Author and Expert Reviewer, 1994-1995
United Nations Development Programme, Consultant, Transfer of Knowledge through Expatriate Nationals, 1989

Presentations:

E. P. Olaguer, 2013; “Near-Source Forward and Inverse Modeling of Reactive Chemicals from Industrial Emission Events,” presented at the 92nd annual meeting of the American Meteorological Society, January 6-10, Austin, TX.

E. P. Olaguer, 2012; “Understanding Near-Source Air Quality Impacts of Flares and Other Large Refinery Emissions,” invited presentation at the Global Refining Strategies Summit, November 6, The Woodlands, TX.

E. P. Olaguer, 2012; “A Forward and Adjoint Neighborhood Scale Air Quality Model,” presented at the 11th Annual CMAS Models-3 Users' Conference, October 15-17, Chapel Hill, NC.

E. P. Olaguer, 2012; “New Air Quality Monitoring and Modeling Tools for Sustainability and Green Manufacturing,” presented at the 32nd Annual Philippine-American Academy of Science and Engineering Meeting and Symposium, May 4-5, Houston, TX.

E. P. Olaguer, 2012; “Modeling Air Pollution at Fine Scales for Urban and Rural Applications,” presented at the Pan American Advanced Studies Institute, Air Quality at the Interface: Mega Cities and Adjacent Agroecosystems, August 8-16, La Plata, Argentina.

E. P. Olaguer, 2012; “Free Radicals and Radical Precursors in Urban Air Chemistry,” presented at the Pan American Advanced Studies Institute, Air Quality at the Interface: Mega Cities and Adjacent Agroecosystems, August 8-16, La Plata, Argentina.

E. P. Olaguer, 2012; “The SHARP Campaign: Why It Matters,” presented at the 91st annual meeting of the American Meteorological Society, January 22-26, New Orleans, LA.

E. P. Olaguer, 2010; “Beyond SHARP: Primary Formaldehyde from Oil and Gas Exploration and Production in the Gulf of Mexico Region,” poster presented at 2010 Fall Meeting of the American Geophysical Union, December 12-17, San Francisco, CA.

E. Olaguer, 2010; “Formaldehyde Monitoring in the Barnett Shale: Implications for Oil and Gas Emission Inventories,” presented at the 2010 Ozone Technical Forum, Wyoming Department of Environmental Quality, September 15, Cheyenne, WY.

E. P. Olaguer, 2010; “Preliminary Results from the Study of Houston Atmospheric Radical Precursors (SHARP) and their Implications for Texas SIPs,” keynote presentation at the 3rd Annual State of the Air Address of the Greater Houston Association for Smog Prevention/Mothers for Clean Air, February 24, Houston, TX.

E. P. Olaguer, B. Lefer, B. Rappenglück, and J. P. Pinto, 2010; “Scientific and Policy Motivations behind the Study of Houston Atmospheric Radical Precursors (SHARP),”

presented at the 90th annual meeting of the American Meteorological Society, January 17-21, Atlanta, GA.

E. P. Olaguer, B. Lefer, B. Rappenglück, and J. P. Pinto, 2009; "Observations of Radical Precursors during TexAQS II," presented at the 2009 Fall Meeting of the American Geophysical Union, December 14-18, San Francisco, CA.

E. Olaguer, 2009; "Radical Precursors: New Perspectives from Texas Research," presented at the 2009 Ozone Technical Forum, Wyoming Department of Environmental Quality, December 8, Cheyenne, WY.

E. P. Olaguer, 2008; "Status of Air Quality Research: Policy-Relevant Results and Uncertainties," invited presentation at Houston's Air Research: What We Know, What Has Worked, Why It Matters, October 16, Rice University, Houston, TX.

E. P. Olaguer and J. P. Pinto, 2008; "TexAQS II and the TERC Research Program," presented at the 88th annual meeting of the American Meteorological Society, January 20-24, New Orleans, LA.

E. P. Olaguer, 2005; "The Science and Politics of Attaining the 8-Hour Ozone Standard in East Texas," invited presentation at 4th Annual CMAS Models-3 Users' Conference, September 28, Chapel Hill, NC.

E. P. Olaguer, 2004; "Modeling Compliance with the 8-Hour Standard," invited presentation at Houston Air Quality: Meeting the Ozone Standards, October 6, Rice University, Houston, TX.

E. P. Olaguer, 2003; "Overview of the Texas Environmental Research Consortium's Air Quality Program," presented at the Outreach Workshop for University of Houston – EPA Air Quality Projects, December 16, University of Houston, Houston, TX.

E. P. Olaguer, 2002; "A 3-D Global Multi-Media Model for Application to Residual Risk Assessment," presented at CRC Air Toxics Modeling Workshop, February 26-27, The Woodlands, TX.

E. P. Olaguer, 2000; "The Implications of Long-range Transport for VOC Reactivity," presented at 93rd annual meeting and exhibition of the Air and Waste Management Association, Salt Lake City, UT.

E. P. Olaguer, 1996; "The Dow 3-D Global Chemistry-Climate Model," poster presented at 1996 Fall Convention of the American Geophysical Union, San Francisco, CA.

E. P. Olaguer, 1995; "A 3-D Model for Assessing Ozone Depletion Potentials of Short-Lived Fumigants," presented at 210th American Chemical Society National Meeting and Exposition, Chicago, IL.

E. P. Olaguer, 1995; "Reactivity: Complexities and Controversies," presented at the Reactivity Workshop of the Chemical Specialties Manufacturers Association, August 7, Washington, DC.

E. P. Olaguer and R. E. Bailey, 1994; "Global Change and Air Quality: Linkages Involving Tropospheric Chemistry," presented at 87th annual meeting and exhibition of the Air and Waste Management Association, Cincinnati, OH.

E. P. Olaguer, 1993; "UV-B and Column Ozone: Trends and Issues," presented at 86th annual meeting and exhibition of the Air and Waste Management Association, Denver, CO.

E. P. Olaguer, 1992; "A Summary of Key Uncertainties in Scientific Projections of Global Warming," presented at 85th annual meeting and exhibition of the Air and Waste Management Association, Kansas City, MO.

K. K. Tung, H. Yang and **E. Olaguer**, 1988; "Theoretical Study of Polar and Global Ozone Changes Using a Coupled Radiative-Dynamical 2-D Model," Polar Ozone Workshop, Aspen, CO.

E. Olaguer and R. Prinn, 1987; "On the Possibility of Reverse Circulations in the Spring Antarctic Lower Stratosphere," presented at 1987 Fall Convention of the American Geophysical Union, San Francisco, CA.

R. Prinn, **E. Olaguer** and A. Golombek, 1987; "A Limited-Resolution Balance Equation 3-D Chemical-Dynamical-Radiative Model," presented at the Sixth Conference on the Dynamics and Chemistry of the Middle Atmosphere, Baltimore, MD.

Theses:

E. Olaguer, 1986; "Solar Activity and Middle Atmospheric Dynamics," Ph.D. thesis, Massachusetts Institute of Technology, Cambridge, MA.

E. Olaguer, 1982; "A Lagrangian Mean Description of Stratospheric Tracer Transport," S.M. thesis, Massachusetts Institute of Technology, Cambridge, MA.

E. Olaguer, 1980; "Calculations of Temperature and Salinity with a Three-Pipe Model of the Ocean," S.B. thesis, Massachusetts Institute of Technology, Cambridge, MA.

Languages:

Fluent: English, Filipino

Conversational: French, German

Reading Knowledge: Spanish, Koine Greek