

Curriculum Vitae

February, 2021

ANTHONY J. BRAZEL

Emeritus Professor & Affiliate Global Futures Scholar
School of Geographical Sciences and Urban Planning
Arizona State University
PO Box 85287-5302
Tempe, Arizona 85287-5302
Street Address for Deliveries:
975 S. Forest Mall, 5534

Telephone: 480-278-4868
or 480-965-7533
Fax: 480-965-8313
Email: abrazel@asu.edu

EDUCATION:

B.A., Mathematics 1963, Rutgers University, New Brunswick, New Jersey
M.A., Geography 1965, Rutgers University, New Brunswick, New Jersey
Ph.D., Geography 1972, University of Michigan, Ann Arbor, Michigan

PhD dissertation: *Active Layer Thermal Regimes in an Alpine Pass, Chitistone Pass, Alaska*
Committee: Samuel I. Outcalt (Chair), Charles M. Davis, Thomas R. Detwyler, Melvin G. Marcus, and Donald J. Portman (Atmospheric, Oceanic, Space Sciences Dept)

GENERAL AREAS OF RESEARCH/TEACHING

Physical Geography, Climatology, Urban Climatology
Snow/Ice and Alpine Environments
Arid Environments

HONORS AND AWARDS

1983 Fellow, Arizona-Nevada Academy of Science elected
1987 Fellow, The Explorers Club
1997 Fellow, American Association for the Advancement of Science
1998 President, Arizona-Nevada Academy of Science
2007 The Anthony J Brazel Research Exam Award (graduate student scholarship named after A. Brazel)
2008 Arizona Nevada Academy of Science Outstanding Service Award
2010 Association of American Geographers Climate Specialty Group's 2010 Lifetime Achievement Award
2010 Isaac Manasseh Meyer Fellowship, National University of Singapore
2013 The Helmut E. Landsberg Award, American Meteorological Society
2016 Luke Howard Award, International Association of Urban Climate
2018 Jeffrey Cook Prize in Desert Architecture from Ben-Gurion University of the Negev, Israel
2019 CAP-LTER Scholarly Contributions Awards, ASU.

ARIZONA STATE GOVERNMENT APPOINTMENT AND NATIONAL CLIMATIC DATA

CENTER (NOAA) MEMO OF AGREEMENT:

1979-1999 *State Climatologist for Arizona*, appointed by several Governors of Arizona

OTHER AFFILIATIONS

Senior Sustainability Scientist, Global Institute of Sustainability
Affiliate Faculty, Center for Environmental Fluid Dynamics, Ira A. Fulton Schools of Engineering

RELEVANT EXPERIENCE:

1964-65 Lab Instructor, Rutgers University, Geography
1966-67 Map Curator, Department of Geography, University of Michigan
1966 Research Geographer, Map Digitizing Project (Office of Naval Research), Geography, University of Michigan
1966 Teaching Aid, Summer Institute on Remote Sensing, University of Michigan (NSF)
1967-68 Research Climatologist, High Mountain Environment Project, Arctic Institute of North America, Yukon/Alaska
1968-89 Research Physical Scientist, U.S. Corps of Engineers, U. S. Lake Survey (Ice and Snow Project), Detroit, MI
1969-72 Instructor, Geography, University of Windsor, Ontario
1971 Coordinator, Hourly Precipitation Network Design, Cities of Detroit and Windsor, Ontario
1972-74 Assistant Professor, Geography, University of Windsor, Ontario
1974-77 Assistant Professor, Geography, Arizona State University
1975 Staff Participant, NSF Student summer Training Project, Environmental Analysis in Arizona
1976 Staff Participant, NSF Student summer Training Project, Environmental Analysis in Arizona
1977 Co-Director, NSF Student summer Training Project, Environmental Analysis in Arizona
1977 Research Associate, ERDA Solar Energy Project, Laboratory of Climatology
1977-84 Associate Professor, Geography, Arizona State University
1978, 1980 Instructor, University of Colorado, Institute of Arctic and Alpine Research Mountain Research Station (10-week summer course)
1979-88 Director, Laboratory of Climatology, College of Liberal Arts & Sciences
1982-83 Visiting Professor at University of Guelph, Ontario; Louisiana State University
1984 Visiting Scholar, King Abdul Aziz University, Jeddah, Saudi Arabia
1984-present Full Professor, Geography, Arizona State University
1985 Chair, Climate Committee, governor-appointed, Project Agriculture's Future
1989-90 Visiting Professor at the University of Delaware, PhD Climate Program
1991 Adjunct Faculty appointment, University of Arizona's Office of Arid Land Studies
1991-1997 Chair, Department of Geography, Arizona State University
1997-98 Associate Dean for Student Services, Graduate College
2001-2003 Director, Southwest Center for Environmental Research & Policy (EPA)
2006 Associate Chair, Department of Geography
2006 -2007 Acting Director, School of Geographical Sciences (formerly Dept Geography),
2007-2010 Associate Director, School of Geographical Sciences & Urban Planning

2011

retired June 26, 2011

PROFESSIONAL RESEARCH ACTIVITIES:

- 1971 P. I., *Dept. of Supply & Services, Canada*, Meteorological Station Installation and Study, Pelee Island, Ontario (Lake Erie)
- 1975 Faculty Grant-in-Aid, *Arizona State University*, Land Use Influences on Temperature & Humidity in the Greater Phoenix Area
- 1975 Climatologist consultant, Yuma Sludge Disposal Report, *Bureau of Reclamation*, Denver, CO
- 1976 CoP.I. *National Science Foundation* student Originated Studies Project Microclimate & Architecture in an Arid Region – Phoenix, Arizona
- 1976 Faculty Grant-in-Aid, *Arizona State University*, Land Use Impacts on Climate
- 1976 Research Climatologist, *Arizona Dept of Transportation*, Blowing Dust on Arizona Highways
- 1979-89 Contractor, Solar Observation Program, *Environmental Protection Agency* equipment loan agreement, Research Triangle Park, NC
- 1980 Project Director, *U.S. Water Conservation Laboratory*, USDA, Phoenix Cloudiness
- 1980 P.I. *Arizona Solar Energy Commission*, Spatial Variability of Solar Energy in Arizona
- 1981 P.I. *AeroComp, Inc.* (subcontract from Bureau of Land Management) Climate Characterization & Dispersion Climatology of Arizona
- 1981 CoP.I. (with M. Pasqualetti), *Arizona State University* Provost Research Fund The Spatial Variability of Solar Energy in Arizona
- 1981-6 P.I. *U.S. Water Conservation Laboratory*, USDA, Evaporation from Soil Surfaces
- 1982 P.I. *Salt River Project*, Trajectory Analysis Project
- 1982 P.I. *Arizona State University* Vice President's Fund Grant, An Investigation of central Arizona Blowing Dust Events, Air Quality, and Relationships to Climatology
- 1985 Co P.I. *Salt River Project*, Quantitative Precipitation Forecasting Project
- 1985 State of Arizona Project, Super Conductor Collider Proposal
- 1986 Co P.I. *Salt River Project*, Project SCENES
- 1986 Co P.I. *Salt River Project*, The Urban Heat Island of Phoenix
- 1986 Co P.I. *Salt River Project*, Project: Improvement in Runoff Estimation
- 1986 Co P.I. *Salt River Project*, Land Use Analysis Project
- 1986 Co P.I. *U.S. Army & West Point*, West Gulkana Glacier Project
- 1987 Co P.I. *Salt River Project*, Phoenix Climate Program
- 1987 Co P.I. *Arizona Transportation Center (ADOT)*, Rainfall Intensity Study
- 1987 Co P.I. Subcontract from *AZ Dept of Water Resources* (through UA) Water Demand and Climate Impacts
- 1987 P.I.(with Jet Propulsion Lab), *NASA*, Surface Parameter Variability and Climate in S. W. North America
- 1987 Co P.I. *Salt River Project*, Phoenix Climate Program
- 1988 P.I. *Desert Research Institute*, University of Reno, NV, Climate Data Validation
- 1989 P.I. *Gebhard Engineering*, Navajo Reservation Climate
- 1989 P.I. *Salt River Project*, Surface and Air Temperature Patterns, Greater Phoenix area
- 1990 Co P.I. *Environmental Protection Agency*, Comparison of Four Global Climate Models for North America and Central America

- 1990 P.I. *Office of Hydrology, NOAA*, Semi-Arid Precipitation Frequency Study
- 1990 P.I. *Salt River Project*, Comparison of Two Rain Gage Networks in central Arizona
- 1990 P.I. Comparison of Four Global Climate Models for North and Central America, *Environmental Protection Agency*, Office of Policy Analysis, Wash, DC.
- 1991 P.I. Performance Characteristics of Maricopa County Flood Control District and National Weather Service Rain Gage Networks in Central AZ, *Salt River Project*.
- 1992 P.I. A Synoptic Climatological Study of Potentially Offensive Air Quality Conditions Along the Border Region of the U.S. and Mexico, *Southwest Center for Environmental Research and Policy*, Center for Environmental Studies, ASU.
- 1992 P.I. Climate Modification Associated with Desert Metropolitan Development, *National Science Foundation*, Human Dimensions of Global Change, Wash, DC.
- 1992 P.I., Response of Eolian Landforms and Sediments to Climatic Change, Desert Research Institute, *National Science Foundation*, Climatic Dynamics.
- 1993 P.I. PRISMS Phoenix Real Time Instrumentation for Surface Meteorological Studies, *Salt River Project*. Archival project through the Office of Climatology
- 1995 P.I. Upper Air Climate of the Borderlands of Arizona/Mexico *Southwest Center for Research and Environmental Policy*, ASU.
- 1995 P.I. Climatic Analysis of Nogales, Arizona, *Southwest Center for Research and Environmental Policy*, ASU.
- 1996 P.I. Border Region Land Ecology Project, *Southwest Center for Research and Environmental Policy*, ASU.
- 1996 Co-P.I. Environmental Data for the McDowell Mountains and Sustainable Development-Linking Global Change and Local Areas, *City of Scottsdale/NASA*.
- 1999 Faculty PI Tempe Town Lake Evaporation and Climate Modification, *Arizona State University* President's Office Neighborhood Capacity Building Grant.
- 1999 P.I. Climate on the Urban Fringe, Long-Term Ecological Research CAPLTER grant *National Science Foundation*.
- 2002 CoPI, Neighborhood Ecosystems: Human-Climate interactions in a Desert Metropolis, *National Science Foundation*, with S. Harlan, A. Brazel, L. Larsen, W. Stefanov.
- 2004 Team member, *Decision Center for Desert City* (DCDC), Climate Science. NSF grant
- 2004 Co-PI, CAP LTER2, *NSF* Urban Ecology Project
- 2007 Estimates of outdoor water loss/gain for the Phoenix metropolitan area: development of current and future scenarios, *Decision Center for Desert City* (DCDC) with S. Grossman-Clarke and C. Martin
- 2007 *Arizona Water Institute* – an Initial Analysis of Landscaping Treatments to Mitigate Urban Heat Island Effects in Phoenix
- 2008 Collaborative Research: Urban Vulnerability to Climate Change: a System Dynamics Approach, S. Harlan et al *NSF*, DYN Coupled Natural-Human, BCS. Prop. #0814692
- 2009 Member National Climate Committee, Long Term Ecological Research Project, *NSF*
- 2009-10 NOAA-SARP Portland & Phoenix water project and climate.
- 2013 NASA ROSES-NNH11ZDA001N - Interdisciplinary Research in Earth Science Program - subelement 2, Impacts of Urbanization on the Environment PI:

PUBLICATIONS

Anthony J. Brazel. 1968, **Icefield Ranges Climatology Program, St. Elias Mountains, 1964 Part II, Presentation and Analysis of Radiation Data.** Arctic Institute of North America Research

Paper 31b, Washington, D.C., October, 39 pp.

Anthony J. Brazel. 1968, **Icefield Ranges Climatology Program, St. Elias Mountains, 1964 Part III. Presentation and Analysis of Ablation Data**, Arctic Institute of North America Research Paper 31c, Washington, D.C., October, 28 pp.

Anthony J. Brazel and Donald Kolberg. 1969, **Climatological Observations in the St. Elias Mountains, Yukon and Alaska, May-August, 1968**, Technical Report No. 3, High Mountain Environment Project, Arctic Institute of North America, Washington, D.C., February, 250 pp.,

Anthony J. Brazel. 1970, Surface heat exchange at Chitistone Pass, Alaska, **Proceedings of the Association of American Geographers**, Vol. 2, pp. 26-30 (also appears in Scientific Results, Icefield Ranges, St. Elias Mountains, Yukon Territory, Vol. IV),

Anthony J. Brazel. 1972, Micro- and Topoclimatology: The case of an Alpine Pass, Chitistone Pass, Alaska, **International Geography 1972**, papers of the 22nd International Geographical Congress, Montreal, Canada, August, pp. 133-135 (also appears in Scientific Results Icefield Ranges, St. Elias Mountains, Yukon Territory, Vol. IV).

Anthony J. Brazel and Wilfred Bach. 1973, International Air Quality Control in the Detroit-Windsor Area, **Proceedings of the Association of American Geographers** Vol. 5, pp. 25-30.

Anthony J. Brazel and Samuel I. Outcalt: 1973, The observation and simulation of diurnal surface thermal contrast in an Alaskan Alpine Pass, **Archiv. fur Mete. Geophys. und Bioklim.**, Series B., Vol. 21, pp. 157-174.

Anthony J. Brazel and Samuel I. Outcalt. 1973, The observation and simulation of diurnal evaporation contrast in an Alaskan Alpine Pass, **Journal of Applied Meteorology** Vol. 12, No. 7, October, pp. 1134-1143.

Anthony J. Brazel, David Alderdice, and David Phillips. 1973, The lake-to-land ratio of solar radiation along the northern shores of Lake Ontario, **Proceedings of the Canadian Association of Geographers**, May, pp. 1-2.

Anthony J. Brazel and Paul Finlay. 1973, Great Lakes water levels -- Part I, **Sailing Forum**, National Magazine of Canadian Yachting Association, June, pp. 12-14.

Anthony J. Brazel. 1974, Great Lakes water levels -- Part II, **Sailing Forum**, National Magazine of Canadian Yachting Association, August, pp. 27- 28.

Anthony J. Brazel and David Phillips. 1974, November 1972 Floods on the Lower Great Lakes, **Weatherwise**, Vol. 27, No. 2, April, pp. 56-62.

Anthony J. Brazel. 1974, **Winter Climatology and Ice Characteristics St. Mary's River- Whitefish Bay Waterway**, NOAA Dept. of Commerce Technical Memo. NOSLSCR 3, September, 61 pp.

Anthony J. Brazel and Daniel Johnson. 1975, Climatology of Yuma, AZ, In, **The Evaluation of**

Alternative Sludge Disposal for the Yuma Desalting Plant, U.S. Dept. of the Interior, Bureau of Reclamation, Denver, Colorado.

Anthony J. Brazel. 1975, A note on topoclimate variation of air temperature, Chitistone Pass Region, Alaska, **Scientific Results Icefield Ranges, St. Elias Mountains, Yukon Territory**, Vol. IV, Arctic Institute of North America, Washington, D.C., pp. 81-87.

Anthony J. Brazel. 1975, Comparison of estimated and observed solar and counterradiation at Chitistone Pass, Alaska, **Scientific Results Icefield Ranges, St. Elias Mountains, Yukon Territory**, Vol. IV, Arctic Institute of North America, Washington, D.C., pp. 49-62.

Anthony J. Brazel and Melvin G. Marcus. 1975, Solar radiation measurements at 5,365 meters, Mt. Logan, Yukon, **Scientific Results Icefield Ranges, St. Elias Mountains, Yukon Territory**, Vol. IV, Arctic Institute of North America, Washington, D.C., pp. 117-119.

Anthony J. Brazel. 1976, A preliminary water and energy budget analysis of Montezuma Well, Arizona, **Journal of Arizona Academy of Science**, Vol. 11, No. 1, February, pp. 9-15.

Anthony J. Brazel and Robert Osbourne. 1976, Observation of atmospheric thermal radiation at Windsor, Ontario, Canada, **Archiv. Fur Mete. Geophys. und Bioklim.** Series B, Vol. 24, pp. 189-200.

Robert W. Durrenberger and Anthony J. Brazel. 1976, Need for a better solar radiation data base, **Science**, Vol. 193, September 17th, pp. 1154-1155.

Anthony J. Brazel, Steve Hsu, Harold Bulk, R. Durrenberger. 1976, Climate and dust storms, in **Evaluation of Highway Dust Hazards Along Interstate Route 10 in the Casa Grand-Eloy Region** (M.G. Marcus, editor), Research Paper No. 3, Arizona State University Center for Environmental Studies, pp. 3.1-3.45.

Anthony J. Brazel. 1977, The application of a surface climate simulator to Montezuma Well, Arizona, **Journal of Arizona Academy of Science**, Vol. 12, No. 1, pp. 29-35.

Sherwood B. Idso and Anthony J. Brazel. 1977, Planetary radiation balance as a function of atmospheric dust: climatological consequences, **Science** Vol. 198, No. 4318, November 18th, pp. 731-733.

Brazel and Collaborators. 1977, Microclimate, architecture and landscaping relationships in an arid region: Phoenix, Arizona, prepared for the **National Science Foundation**, Student Originated Studies Program, Grant SM176-07879, and Center for Environmental Studies Research Paper No. 4, ASU, 99 pp.

Sherwood B. Idso and Anthony J. Brazel. 1978, Climatological effects of atmospheric particulate pollution, **Nature**, Vol. 274, August 24th, pp. 781-782.

Anthony J. Brazel and Sandra W. Brazel. 1978, Precipitation and flooding in Southern Arizona: The legacy of tropical Storm Heather, October, 1977, **National Weather Digest**, Vol. 3, No. 3, August, pp. 2-10.

Anthony J. Brazel, Harold C. Fritts, and Sherwood B. Idso. 1978, **The Climate of Arizona: Prospects**

for the Future, Climatological Publications, Scientific Paper No. 2, Office of the State Climatologist, Arizona State University, Tempe, 22 pp.

Sherwood B. Idso and Anthony J. Brazel. 1978, Atmospheric dust: climatological consequences, Reply to Response, **Science**, Vol. 201, July 28th, pp. 378-379.

Anthony J. Brazel. 1978, **A Study of the Temporal and Spatial Variation of Climate and Solar Radiation in the Metropolitan Phoenix Area**, Final Technical Progress Report, Dept. of Energy, Contract #77-5-04-3969, Author of Appendix A: Analysis of Comparability of Data and of Spatial Variability of Data, pp. 11-20.

Anthony J. Brazel and Melvin G. Marcus. 1979, Heat exchange across a snow surface at 5365 meters, Mt. Logan, Yukon, **Arctic and Alpine Research**, Vol. 11, No. 1, pp. 1-16.

Anthony J. Brazel and Sherwood B. Idso. 1979, Thermal effects of dust on climate:, **Annals of the Association of American Geographers**, Vol. 69, No. 3, September, pp. 432-437.

Anthony J. Brazel and Richard Zirriax. 1979, **Monthly and Seasonal Spatial Variability of Precipitation: Phoenix and Environs**, Climatological Publications, Scientific Paper No. 10, Laboratory of Climatology, Arizona State University, Tempe, December, 109 pp.

Anthony J. Brazel and others. 1979. **Laboratory Manual to Accompany GPH 111 Introduction to Physical Geography** – 1st Edition – Burgess Pub. Co. Minneapolis,

Anthony J. Brazel. 1980, **Some Cloud Cover Characteristics for Phoenix, Arizona, 1948-1980**, Climatological Publications, Scientific Paper No. 13, Laboratory of Climatology, Arizona State University, Tempe, October, 57 pp.

Anthony J. Brazel and M. L. Pisapo. 1980, **Climatic Prediction of Winter Precipitation in Arizona**, Climatological Publications, Scientific Paper No. 15, Laboratory of Climatology, Arizona State University, Tempe, November, 33 pp.

Anthony J. Brazel. 1980, Historical precipitation and water flow patterns in Arizona: some perspectives, **Arizona Water Symposium**, In Report No. 2, Arizona Dept. of Water Resources, 24-36.

Anthony J. Brazel and Daniel M. Johnson. 1980, Land use effects on temperature and humidity in the Salt River Valley, Arizona, **Journal of the Arizona-Nevada Academy of Science**, Vol. 15, Issue 2, pp. 54-61.

Anthony J. Brazel and Carol Blazek. 1981, **The Early December Freeze of 1978: A Climatological Perspective**, Climatological Publications, Scientific Paper No. 16, Laboratory of Climatology, Arizona State University, Tempe, January, 80 pp.

Anthony J. Brazel and Steve Hsu. 1981, The climatology of hazardous Arizona dust storms, in **Desert Dust: Origin, Characteristics, and Effect on Man** (T. Pewe, editor), Special Paper 186, Geological Society of America, pp. 293-303.

Anthony J. Brazel. 1981, **The Spatial Variability of Solar Energy in Arizona**, Climatological Publications, Solar Energy Series No. 11, Laboratory of Climatology, Arizona State University, Tempe, June, 114 pp. (Report for AZ Solar Energy Commission).

Anthony J. Brazel and Albert Hyers. 1981, Comments on aspects of radiation transfer at high altitudes, in **Research Papers in Climatology**, Publication No. 1, Dept. of Geography, Arizona State University, Tempe, pp. 1-21.

Anthony J. Brazel and Others. 1981, Long-wave radiation enhancement by cirque wall emittance, Front Range, Colorado, in **Research Papers in Climatology**, Publication No. 1, Dept. of Geography, Arizona State University, Tempe, pp. 21-42.

Anthony J. Brazel and Melvin G. Marcus. 1981, Excursion analysis of total suspended particulates in Central Arizona, **Proceedings of Applied Geography Conference**, Tempe, pp. 63-68.

Ray Lougeay and Anthony J. Brazel. 1981, A preliminary test of atmospheric emittance equations at high altitude, **Archiv. fur Mete., Geophys., und Bioklim.** Series B, 20:227-237.

Anthony J. Brazel and Others. 1981, **Arizona Climate Inventory Volume I**. Final Report to Bureau of Land Management under contract through AeroComp, Inc. under grant YA-553-CT1-1021, 339 pp.

Anthony J. Brazel and Others. 1982. **Arizona Dispersion Climatology Volume II**. Final Report to Bureau of Land Management under contract through AeroComp, Inc. under grant YA-553-CT1-1021, 211 pp.

Anthony J. Brazel and Sandra W. Brazel. 1982, Summer diurnal wind patterns at 3,000 m surface level, Front Range, Colorado, U.S.A. **Physical Geography** Vol. 4, No. 1, pp. 53-60.

Anthony J. Brazel. 1982, The Bureau of Land Management's climate and air quality assessment of the Western United States: The Arizona experience, **Bulletin of the American Meteorological Society**, October, Vol. 64, No. 10, 1157-1159.

Gary Powell, Anthony J. Brazel, and Michael Pasqualetti. 1984, New approach to estimating solar radiation from satellite imagery, **Professional Geographer**, Vol. 36, No. 2, 227-233.

William G. Nickling and Anthony J. Brazel. 1984, Temporal and spatial characteristics of Arizona dust storms (1965-1980), **Journal of Climatology**, vol.4, pp. 645-660.

Ray Lougeay and Anthony J. Brazel. 1984, An insolation data presentation suitable for solar energy application, **Solar Energy**, Vol. 33, No. 5, pp.409-415.

Anthony J. Brazel and A. Prasad. 1984, **Arizona Monthly Precipitation 1895-1983**, Climatological Publications, Precipitation Series No. 5, Laboratory of Climatology, Arizona State University, Tempe, Arizona 20 pp.

Sherwood B. Idso and Anthony J. Brazel. 1984, Rising atmospheric carbon dioxide concentrations may

increase streamflow, **Nature**, Vol. 312, 1 November, pp. 51-53.

Anthony J. Brazel and Kenneth E. Evans. 1984, **Major Storms and Floods in Arizona**, Climatological Publications, Precipitation Series No. 6, Laboratory of Climatology, Arizona State University, Tempe, Arizona 68 pp.

Sherwood B. Idso and Anthony J. Brazel. 1984, **Implications of the Rapidly Rising CO₂ Content of Earth's Atmosphere for Water Resources in Arizona**, Climatological Publications, Scientific Paper No. 19, Laboratory of Climatology, Arizona State University, Tempe, Arizona, 32 pp.

Anthony J. Brazel. 1985, Mesoscale variability of summer and winter daily solar radiation in Arizona, U.S.A., **Journal of Arid Environments**, Vol. 8, pp. 99- 108.

Anthony J. Brazel. 1985, Statewide temperature and moisture trends, 1895-1983, in **Arizona Climate, The First Hundred Years** (W.D. Sellers, R.H. Hill, and M. Sanderson-Rae, editors), pp. 79-84, University of Arizona, Institute of Atmospheric Physics, Tucson, Arizona.

Anthony J. Brazel. 1985, **Project Agriculture's Future: Arizona Climate Report**, submitted to Governor's Office, Climate Committee, Lab. of Climatology, Arizona State University, 171 pp.

William G. Nickling and Anthony J. Brazel. 1985, Surface wind characteristics along the Icefield Ranges, Yukon Territory, Canada, **Arctic and Alpine Research**, Vol. 17, No. 2, pp. 125-134.

Anthony J. Brazel and William G. Nickling. 1986, The relationship of weather types to dust storm generation in Arizona (1965-1980), **Journal of Climatology** Vol. 6, 255-275.

Ronald Jones and Anthony J. Brazel. 1986, Problems associated with the variability of southwest precipitation and seasonal snowpacks, In **Proceedings of the Western Snow Conference**, 54th Annual, pp. 12-17, April 15-17.

Anthony J. Brazel, William G. Nickling, and Jeff Lee. 1986, Effect of antecedent moisture conditions on dust storm generation in Arizona, In **Aeolian Geomorphology**, pp.261-271, Boston: Allen and Unwin.

Anthony J. Brazel. 1987, Urban Climatology, in **Encyclopedia of Earth Sciences, Volume XI, The Encyclopedia of Climatology**, edited by J.E. Oliver and R.W. Fairbridge, Van Nostrand Reinhold Co. New York, pps. 889-901.

Anthony J. Brazel and William G. Nickling. 1987, Dust storms and their relation to moisture in the Sonoran-Mojave Desert Region of the South-western United States, **Journal of Environmental Management**, Vol. 24, 279-291.

Ray Lougeay, Tomas Miller, and Anthony J. Brazel. 1987, Monitoring changing desert biomass through video digitization of Landsat MSS data: an application to dust storm generation, **Photogrammetric Engineering and Remote Sensing**, Vol. 53, No. 9, September 1987, pps. 1251-1254.

Anthony J. Brazel and Melvin G. Marcus. 1987, Heat enhancement by longwave wall emittance, **Geographical Review**, Vol. 77, No. 4, 440-455.

Anthony J. Brazel. 1987, The Weather Analyst software program, **Science Software**, Vol. 3, No. 3, 239-240.

Anthony J. Brazel and Neil Berman. 1988, Fundamentals of air quality, In, **Air Quality in Arizona**, 52nd Arizona Town Hall, Arizona Academy, Research Report, Center for Advanced Research in Transportation, 21-68.

Anthony J. Brazel, Sandra W. Brazel, and Robert C. Balling. 1988, Recent changes in smoke/haze events in Phoenix, Arizona, **Theoretical and Applied Climatology**, Vol. 39, 108-113.

Anthony J. Brazel, B. Reich, and R. Clark. 1988, **STORM RAINFALL PROBABILITY ATLAS FOR ARIZONA**, Final Report, HPR- PL-1(31), Item 276, Arizona Dept. of Transportation, Phoenix, AZ. 103 pp.

Anthony J. Brazel and S. Brazel. 1988, Climate and air quality - Maricopa, Sierrita, Arizona, In, **Proposal, State of Arizona - Super Collider Conductor Project**, Department of Energy.

Anthony J. Brazel, M. Marcus, C. Kelly, S. Brazel. 1988, Urban surfaces: how hot are they? In, **Arid Lands: Today and Tomorrow**, International Research and Development Conference, Westview Press, Boulder, Colorado, 561-570.

Anthony J. Brazel and S. Brazel. 1988, Desertification: desert dust and climate, environmental problems in Arizona, In, **Arid Lands: Today and Tomorrow**, International Research and Development Conference, Westview Press, Boulder, Colorado, 35-42.

Anthony J. Brazel and Sandra W. Brazel. 1989, Applied and basic research at the Laboratory of Climatology and Office of the State Climatologist of Arizona, **Proceedings of the Applied Geography Conference**, Vol. 12, 116-121, Binghamton, NY.

Anthony J. Brazel. 1989, Dust and climate in the American Southwest, in **Paleoclimatology and Paleometeorology: Modern and Past Patterns of Global Atmospheric Transport**, In NATO Advanced Research Workshop Volume, (ed. M. Leinen), Kluwer Academic Publishers, 65-96.

Anthony J. Brazel. 1989, Applied research of the Arizona State Climate Program: desert dust and climate revisited, In, **Sixth Conference on Applied Climatology, American Meteorological Society**, Charleston, SC, March 7-10th, 233-237.

Anthony J. Brazel, L. Johnson, N. Bryant, C. Hutchinson, and R. Balling. 1989, Using remotely sensed data to monitor land surface climatology variations in a semi-Arid grassland, In, **Proceedings IEEE International Geoscience and Remote Sensing Symposium**, Vancouver, BC, July 10-14th, Vol. 1, 184-187.

J. P. Henderson, A. J. Brazel, and W. J. Reynolds. 1989, Valley wall long-wave flux contributions, West Gulkana Glacier, Alaska, in **Glacier and Climate Studies, West Gulkana Glacier and Environs**,

Alaska, Final Report ASU-USMA West Gulkana Glacier Project, Vol. I, 63-80. (eds. M. G. Marcus and W. J. Reynolds).

A. J. Brazel and M. G. Marcus. 1989, Air temperature variations over different surfaces in the West Gulkana Glacier Valley, in **Glacier and Climate Studies, West Gulkana Glacier and Environs, Alaska**, Final Report ASU-USMA West Gulkana Glacier Project, Vol. I, 81-91 (eds. M. G. Marcus and W. J. Reynolds).

A. J. Brazel, B. M. Buckley, D. Everson, and W. J. Reynolds. 1989, Aspects of wind on West Gulkana Glacier, in **Glacier and Climate Studies, West Gulkana Glacier and Environs, Alaska**, Final Report ASU-USMA West Gulkana Glacier Project, Vol. I, 93-105, (eds. M. G. Marcus and W. J. Reynolds).

B. Buckley, A. J. Brazel, and W. Strauss. 1989, Winds at Summit Lake, Alaska during summer 1986, in **Glacier and Climate Studies, West Gulkana Glacier and Environs, Alaska**, Final Report ASU-USMA West Gulkana Glacier Project, Vol. I, 107-114, (eds. M. G. Marcus and W. J. Reynolds).

A. J. Brazel. 1989, Comparison of 0000Z upper air temperatures with 1600LST West Gulkana Glacier Air Temperatures, in **Glacier and Climate Studies, West Gulkana Glacier and Environs, Alaska**, Final Report ASU-USMA West Gulkana Glacier Project, Vol. I, 115-122, (eds. M. G. Marcus and W. J. Reynolds).

A. J. Brazel, M. G. Marcus, and C. T. Moore. 1989, Summer field season observations, West Gulkana Glacier and environs: 1986, 1987, in **Glacier and Climate Studies, West Gulkana Glacier and Environs, Alaska**, Final Report ASU-USMA West Gulkana Glacier Project, Vol. I, 123-142, (eds. M. G. Marcus and W. J. Reynolds).

Hassan A. Nasrallah, Anthony J. Brazel and Robert C. Balling, Jr. 1990, Analysis of the Kuwait City urban heat island, **International Journal of Climatology**, Vol. 10, 401-405.

Anthony J. Brazel and Melvin G. Marcus. 1990, Longwave radiation in high mountain areas, Himalayas of Central Nepal and Northwest India, **Physical Geography**, Vol. 11, No. 3, 240-259.

Nevin A. Bryant, L. F. Johnson, Anthony J. Brazel, Robert C. Balling, C. F. Hutchinson, and Louisa Beck. 1990, Measuring the effect of overgrazing in the Sonoran Desert, **Climatic Change**, Vol. 16, 103-124.

Anthony J. Brazel, Robert Muller, Peter Robinson, and Laurence Kalkstein (editor). 1990, **Global Comparisons of Selected GCM Control Runs and Observed Climate Data**, Report prepared for: United States EPA, Office of Policy Analysis, Climatic Change Division., April, Wash., D.C., 20024, 251 pp, Contract No. 68-W8-0113.

Anthony J. Brazel. 1991, Blowing Dust and Highways: The case of Arizona, USA chapter 7 in **Highway Meteorology**, (eds. A. Perry and L. Symons), Chapman and Hall, Publishers, 1991, 131-161.

Anthony J. Brazel and Melvin G. Marcus. 1991, July temperatures in mountainous Kashmir and Ladakh, India: comparisons of observations and general circulation model simulations, **Mountain Research and Development**, Vol. 11, No. 2, 75-86.

Anthony J. Brazel, John Arnfield, David Greenland, and Cort Willmott. 1991, Physical and boundary layer climatology, **Physical Geography**, Vol. 12, 3, 189-206.

Anthony J. Brazel and Ray Lougeay. 1991, Linking urban air temperatures to remotely-sensed surface temperatures, **Seventh Conference on Applied Climatology**, American Meteorological Society, Salt Lake City, Utah, 39-42.

Ray Lougeay and Anthony J. Brazel. 1991, Urban climate modification associated with changing land use, **Seventh Conference on Applied Climatology**, American Meteorological Society, Salt Lake City, Utah, J71-J74.

Anthony J. Brazel, Fred. B. Chambers, Laurence S. Kalkstein. 1991, Summer energy balance on West Gulkana Glacier, Alaska and linkages to a temporal synoptic index, **Annals of Geomorphology**, (Special Volume from International Geomorphology and Geoecological Meeting in Germany), Suppl.-Bd. 86, 15-34

Melvin G. Marcus, Fred B. Chambers, and Anthony Brazel. 1991, Ablation and climate, West Gulkana Glacier, Alaska: the dilemma of the representative station, **Annales of Geomorphology**, (special volume from International Geomorphology and Geoecological meeting in Germany).

Haida Taha and Anthony J. Brazel. 1992. Effects of heat islands. In **Handbook on Urban Heat Islands**, Chapter 2, Lawrence Berkeley Laboratory.

Anthony J. Brazel. 1992. **Comparisons of RAND Climatology and GCM Outputs for North and Central America**. report to EPA, Office of Policy Analysis, Wash, DC 38 pp, Contract No. 68-W8-0113.

Risa Palm and Anthony Brazel. 1992, Applications of geographic concepts and methods, Chp. 17 In **Geography's Inner World, Pervasive Themes in Contemporary American Geography**, (eds R. Abler, M. Marcus, and J. Olson), Association of American Geographers, Wash, D.C.. Chp. 16, 342-362.

Melvin G. Marcus and Anthony J. Brazel. 1992, Summer dust storms in the Arizona Desert, **Geographical Snapshots of North America**, IGC, International Geographical Union, 411-416.

Lougeay, R., A. J. Brazel, and M. G. Marcus, 1992, Cirque and city form effects on energy distribution in the landscape, **Geographical Snapshots of North America**, IGC, International Geographical Union, 163-167.

Matthew J. Stoll and Anthony J. Brazel. 1992, Surface/air temperature relationships in the urban environment, **Physical Geography**, Vol. 13, 2, 160-179.

Anthony J. Brazel and Robert A. Muller. 1992, Zonal comparisons of global circulation model temperature and precipitation data with historical climate for North America and Eurasia, In **Global Climate Change: Implications, Challenges, and Mitigation Measures**, (ed. S. K. Majumber, L. S. Kalkstein, B. Yarnel, E. W. Miller, and L. M. Rosenfeld), Penn. Academy of Science, Chp 15, 227-241.

Anthony J. Brazel and Tomas A. Miller. 1992, Meteorological and climatological uses of computers, In

Encyclopedia of Computers, MacMillan Pub. Co, N.Y..

Anthony J. Brazel, Gregory J. McCabe, and H. J. Verville. 1992, Incident solar radiation simulated by general circulation models for the Southwestern United States, **Climatic Research**, Vol. 2, 177-181.

Anthony J. Brazel, R. S. Cerveny, and B. L. Trapido. 1993, Localized climatic responses during the 11 July 1991 eclipse: Phoenix, AZ, **Climatic Change**, Vol. 23, 155-168.

Anthony J. Brazel, H. J. Verville, and R. Lougeay. 1993, Spatial-temporal controls on cooling degree hours: an energy demand parameter, **Theoretical and Applied Climatology**, Vol. 47, 81-92.

Anthony J. Brazel, M. Hubble, and R. Lougeay. 1993, Monitoring the climatic effects of urbanization at various spatial scales, **Eighth Conference on Applied Climatology**, Jan, 1993, Anaheim, CA 47-51.

Anthony J. Brazel, 1994, Synoptic climatology study of potentially offensive air quality conditions along the border region of the United States and Mexico, **FINAL REPORT, Southwest Center for Environmental Research and Policy** (under agreement between UTEP and ASU, EPA CR818296-01-0), 23pp with appendices.

Lougeay, R., Stoll, M., and Brazel, A., 1994, Surface emissivity calibration of Landsat thermal data: creating an urban surface temperature map, **Geographical Bulletin**, 32:(2)74-82.

Anthony J. Brazel, 1995, Urban climate, in **McGraw-Hill Yearbook of Science & Technology 1995**, McGraw-Hill, Inc. pp. 446-450.

Berman, N. S., D. L. Boyer, A. J. Brazel, S. W. Brazel, R. Chen, H. J. S. Fernando, and M. J. Fitch, 1995, Synoptic classification and physical model experiments to guide field studies in complex terrain, **Journal of Applied Meteorology**, Vol. 34, 719-730.

Anthony J. Brazel, 1996, Microclimate, in **Encyclopedia of Climate and Weather**, Oxford University Press, pp 504-507.

Bach, A. J., A. J. Brazel, N. Lancaster, 1996. Temporal and spatial aspects of blowing dust in the Mojave and Colorado deserts of Southern California, 1973-1994, **Physical Geography**, Vol. 17, No. 4, 329-353.

Melvin G. Marcus and Anthony J. Brazel 1996. Environmental effects on radiation fluxes during the pre-monsoon, 4,170-5,525 m, Annapurna Region, Nepal, **Mountain Research and Development**, Vol. 16, No. 3, 221-234

Lougeay, Ray; Brazel, Anthony; Hubble, Mark, 1996, Monitoring intra-urban temperature patterns and associated land cover in Phoenix, Arizona using Landsat thermal data, **Geocarto international**, Volume 11, Number 4, 79-90.

Brazel, A. J. and M. J. Fitch, 1997, Air pollution -- The U. S. - Mexico Border region, **McGraw-Hill Yearbook of Science & Technology 1997**, McGraw-Hill, Inc. pp 5-7.

S. I. Outcalt, K. M. Hinkel, E. Meyer, and A. J. Brazel, 1997. Application of hurst rescaling to geophysical serial data, **Geographical Analysis**, Vol. 29, No. 1, 72-87.

Brazel, A.J. 1998. **Surface Climate and Remote Sensing of Scottsdale, AZ**, Report submitted to City of Scottsdale, funded by Scottsdale and NASA, 13 pp +appendices.

Stanitski-Martin, D., M.G. Marcus, A.J. Brazel, N.J. Selover, and R.S. Cerveney, 1999. Climate at the bottom of the Grand Canyon, **Focus**, Vol. 45, No. 3, 1-8.

Brazel, A.J. 1999. Enhancing accountability of the university to serve the public, preprint paper, **Eighth Symposium on Education and Eleventh Conference on Applied Climatology**, American Meteorological Society, paper J1.3, Dallas-Forth Worth, TX.

Brazel, A.J., Anderson, S., and Selover, N. Microclimate and housing waves along the urban fringe, preprint paper in **Biometeorology and Urban Climatology at the Turn of the Millennium**, International Congress of Biometeorology & International Conference on Urban Climatology, 8-12 November, 1999, Sydney, Australia.

Brady, P.V., R.I. Dorn, A.J. Brazel, J. Clark, R.B. Moore, and T. Glidewell, 1999. Direct measurement of the combined effects of lichen, rainfall, and temperature on silicate weathering, **Geochimica et Cosmochimica Acta**, Vol. 63, N0. 19/20, 3293-3300.

Brazel, A.J., N. Selover, R. Vose, G. Heisler. 2000. The tale of two cities: Phoenix and Baltimore Urban LTERs, **Climate Research**. Vol 15, No 2. 123-135.

Martin, C., L. Stabler, A. J. Brazel. 2000. Summer and winter patterns of air temperature and humidity under calm conditions in relation to urban land use, **Third Symposium on the Urban Environment**, American Meteorological Society, Davis CA (in Preprint Volume)

Heisler, G. and A.J. Brazel. 2000. Some considerations in using climate data from existing weather stations or installing stations for research in Baltimore and Phoenix Urban LTER sites, **Third Symposium on the Urban Environment**, American Meteorological Society, Davis CA (in Preprint Volume)

A. J. Brazel and S. Anderson. 2000. A look at spatial and temporal climate change on the urban fringe, **Third Symposium on the Urban Environment**, American Meteorological Society, Davis CA (in Preprint Volume)

R. Tomalty and A. J. Brazel. 2000. Urban influences on solar radiation in CAPLTER, **Third Symposium on the Urban Environment**, American Meteorological Society, Davis CA (in Preprint Volume)

F. Chambers and A. J. Brazel. 2000. Heating and cooling in Colorado mining towns, **Third Symposium on the Urban Environment**, American Meteorological Society, Davis CA (in Preprint Volume)

Brazel, A. J. and N. Selover. 2001. The Phoenix evening transition: a climatic perspective, 2001. **Proceedings of the 3rd International Symposium on Environmental Hydraulics**, Tempe, AZ Dec 5-8,

6 pp (on CD ROM).

Graf, W. P. Gober, and A.J. Brazel. 2001. Melvin G. Marcus, 1929-1997. **Annals of the Association of American Geographers**, Vol. 91(4), 724-733.

Selover, N.J., D. Dorn, R. Dorn, and A. J. Brazel. 2003. Community partnership grant generates pre-service teacher and middle school student motivation for authentic science and mathematics, **School Science and Mathematics**, Vol. 103 (1), 1-11.

A.J. Brazel and K. Crewe. 2002. Preliminary test of a surface heat island model (SHIM) and implications for a desert urban environment, Phoenix, Arizona, **Journal of the Arizona-Nevada Academy of Science**, Vol. 34 (2) 98-105.

Brazel, A. J. 2003. The Changing Nature of Physical Geography (by Ken Gregory), 2001, Book Review, **Annals AAG**, Vol. 91(4).

L.A. Baker, A.J. Brazel, N. Selover, C. Martin, N. McIntyre, F. Steiner, A. Nelson, and L. Musacchio. 2002. Urbanization and warming of Phoenix (Arizona, USA): impacts, feedbacks, and mitigation, **Urban Ecosystems**, 6: 183-203.

I. Ozkeresteci, K. Crewe, A.J. Brazel, M. Bruse. 2003. Use and Evaluation of the ENVI-met model for environmental design and planning: an experiment on linear parks, Preprint Paper for the **International Cartographic Congress**, Durban, South Africa, August, 2003. 9pp.

S. Harlan, A. Brazel, W. Stefanov, L. Larsen, S. Grineski, N. Jones, J. Parker, and L. Prashad. 2003. Inequality for the twenty-first century: social class, ethnicity, and vulnerability to climate change, **Pacific Sociological Association Annual Meeting Preprint**, 2004 Meeting.

Brazel, A.J. 2003. **Future Climate in central Arizona – Heat and the Role of Rapid Urbanization**, Center for Environmental Studies, Consortium for the Study of Rapidly Urbanizing Regions, Vignette #2, 4 pp. Available on CSRUR homepage (www.ces.asu.edu/csur/research).

Brazel, A.J. and A.W. Ellis. 2003. The climate of central Arizona and Phoenix Long-Term Ecological Research site (CAP LTER) and links to ENSO,” In: Greenland, D., D. Goodwin, and R. Smith. (Eds.) **Climate variability and ecosystem response in long-term ecological research sites**. Oxford University Press.(Chapter 7 117-140).

Stefanov, W.L., L. Prashad, C. Eisinger, A. Brazel, S.L. Harlan, 2004. Investigation of human modifications of landscape and climate in the Phoenix, Arizona metropolitan area using Master data, **The International Archives of the Photogrammetry, Remote Sensing, and Spatial Information Sciences**, Vol. 35, B7, 1339-1347.

Timothy W. Hawkins, Anthony J. Brazel, William L. Stefanov, Wendy Bigler, and Erinanne M. Saffell, 2004. The Role of rural variability in urban heat island determination for Phoenix, Arizona, **Journal of Applied Meteorology**, Vol. 43, No. 3, 476–486.

- A.J. Brazel, H.J.S. Fernando, J.C.R. Hunt, N. Selover, B.C. Hedquist, E. Pardyjak. 2005. Evening transition observations in Phoenix, Arizona. **Journal of Applied Meteorology**, vol. 44, 99-112.
- Beeson, C., D. Blumberg, A. Brazel, L. Shashua-Bar. 2005. Combined methods of thermal remote sensing and mobile climate transects in Beer Sheva, Israel, **International Archives of Photogrammetry, Remote sensing and Spatial Information Sciences**, Vol XXXVI, Part 8/W27 (eds. M. Moeller, E. Wentz).
- L. Stabler, C. A. Martin, A. Brazel. 2005. Microclimates in a desert city were related to land use and vegetation index, **Urban Forestry & Urban Greening**, 137-147.
- A. J. Brazel and D. Quatrocchi. 2005. Urban Climatology. In **Encyclopedia of World Climatology**, 766-779. Springer Pubs.
- Harlan, S. H., A. J. Brazel, L. Prashad, W. L. Stefanov, and L. Larsen. 2006. Neighborhood microclimates and vulnerability to heat stress, **Social Science & Medicine**, 63, 2847-2863.
- Hedquist, B.C. and A.J. Brazel. 2006. Urban, residential, and rural climate comparisons from mobile transects and fixed stations: Phoenix, Arizona, **Journal of the Arizona-Nevada Academy of Science**, vol 38(2), 77-87.
- Hartz, D. A., A. J. Brazel, and G. M. Heisler. 2006. A case study in resort climatology of Phoenix, Arizona, USA, **International Journal of Biometeorology**, 51, 73-83.
- Hartz, D. A., L. Prashad, B. C. Hedquist, J. Golden, and A. J. Brazel. 2006. Linking satellite images and hand-held infrared thermography to observed neighborhood climate conditions, **Remote Sensing of the Environment**, 104, 190-200.
- J. Golden, A. Brazel, J. Salmond, and D. Laws. 2006. Energy and water sustainability: the role of urban climate change from metropolitan infrastructure, **Journal of Engineering for Sustainable Development**, Vol. 1, No. 1. 55-70.
- P. G. Warren, M. Katti, M. Ermanns, and A. Brazel. 2006. Urban bioacoustics: it's not just noise, **Animal Behavior**, Vol. 71, 491-502.
- Brazel, A. and J. Golden. 2006. Air Sheds, In **Planning and Urban Design Standards**, American Planning Association, Wiley & Sons, p. 103-104.
- Brazel, A., J. Golden, and J. Schwab, 2006. Air Quality, In **Planning and Urban Design Standards**, American Planning Association, Wiley & Sons, p. 101-102.
- W. Stefanov and A. J. Brazel 2007. Challenges in characterizing and mitigating urban heat islands – a role for integrated approaches including remote sensing. In **Applied Remote Sensing for Urban Planning, Governance and Sustainability**, (ed. Netzband, M, W.L. Stefanov, and C. Redman), Chapter 6, Springer-Verlag, Berlin Heidelberg, 117-135.
- Jenerette, G. D., S.L. Harlan, A. Brazel, N. Jones, L. Larsen, and W.L. Stefanov. 2007. Regional

relationships between surface temperature, vegetation, and human settlement in a rapidly urbanizing ecosystem, **Landscape Ecology**, Vol. 22, 353-365.

Brazel, A. and P. Gober. 2007. Urban-scale climate change: effects on water use, **Southwest Hydrology**, Vol. 6, No. 5, 10-11.

Pijawka, D, A. Brazel, E. Cook, J. Feller, S. Grossman-Clarke, S. Guhathakurta, and M. Roth. 2007. Land Use and Environmental Quality, In **Land Use Challenges and Choices for the 21st Century**, Ninety-First Arizona Town Hall, ed. P. Gober, Chapter 10, 136-161.

Brazel A., P. Gober, S-Jae Lee, S. Grossman-Clarke, J. Zehnder, B. Hedquist, E. Comparri, 2007. Determinants of Changes in the regional urban heat island (1990-2004) within Metropolitan Phoenix, Arizona, USA, **Climate Research**. Vol. 33, 171-182.

Brazel, A. 2007. City Report – Phoenix, Arizona U.S., In **International Association for Urban Climate Newsletter**, Issue No. 23, June 2007, 6-9.

Harlan, S.L. et al, 2007. **2006 Highlights Phoenix Area Social Survey**, CAP LTER Contribution No. 4, GIOS, 40 pages (I was on the Research Team).

Brazel, A. 2007. Urbanization and Climate, In **Climate Change and Variation A Primer for Teachers**, Vol. 1, ed. William A. Dando. Pp 181-188.

Harlan, S.L., A.J. Brazel, G. D. Jenerette, N.S. Jones, L. Larsen, L. Prashad, and W.L. Stefanov. 2008. In the shade of affluence: the inequitable distribution of the urban heat island, **Research in Social Problems and Public Policy**, Vol 15, 173-202.

Golden, J. S., D. Hartz, A. Brazel, G. Lubert, and P. Phelan. 2008. A biometeorology study of climate and heat-related morbidity in Phoenix from 2001-2006. **International Journal of Biometeorology**, 2008. 52, 471-480.

Brazel, A. J. and G. Heisler, 2009. Climatology at urban Long-Term Ecological Research Sites: Baltimore Ecosystem Study and Central Arizona–Phoenix **Geography Compass** 3/1 (2009): 22–44.

Sun, C.-Y., A. J. Brazel, W. T. L. Chow, B. C. Hedquist, and L. Prashad. 2009. Desert heat island study in winter by mobile transect and remote sensing techniques, **Theoretical and Applied Climatology**, 98, 323-335.

Gregory, K, J., I. G. Simmons, A. J. Brazel, J. W. Day, E. A. Keller, A. G. Sylvester, and A. Yanez-Arancibia, 2009. **Environmental Sciences: A Student Companion**, Sage Publ Ltd, London, ISBN 978-1-4129-4704-6 and 3, 441 pp.

Wentz, E. A., W. L. Stefanov, M. Netzband, M. S. Moller, and A. Brazel, 2009. The urban environmental monitoring/100 cities project: legacy of the first phase and next steps, In **Global Mapping of Human Settlement, Experiences, Datasets, and Prospects**, (ed. P. Gamba and M. Herold), CRC Press, Boca Raton, London, NY, pp 191-204 (Chapter 9).

S. L. Harlan, S. Yabiku, L. Larsen, and A. Brazel. 2009. Household water consumption in an Arid City: affluence, affordance, and attitudes. **Society and Natural Resources**. 22:691-701

Hedquist, B.C., A.J. Brazel, S. Di Sabatino, W. Carter, and H.J.S. Fernando, January 2009: Phoenix Urban Heat Island experiment: Micrometeorological aspects. **Proceedings of the Eighth Conference on the Urban Environment**, AMS 89th Annual meeting, Phoenix, Arizona

Hedquist, B.C., S. Di Sabatino, H.J.S. Fernando, L.S. Leo, and A.J. Brazel, June 2009: Results from the Phoenix Arizona Urban Heat Island experiment. **Proceedings of the Seventh International Conference on Urban Climate (ICUC-7)**, Yokohama, Japan.

Gober, P., A. J. Brazel, S. Myint, R. Quay, A. Miller, S. Rossi, and S. Grossman-Clarke. 2010. Using watered landscapes to manipulate urban heat island effects: how much water will it take to cool Phoenix? **Journal of the American Planning Association**. 76: 109-121.

Svoma, B. M. and A. Brazel, 2010. Urban effects on the diurnal temperature cycle in Phoenix, Arizona, **Climate Research**. Vol 41, No 1, 21-29.

Heisler, G. M. and A. J. Brazel, 2010. The urban physical environment: temperature and urban heat islands, book chapter **Urban Ecosystem Ecology** (editor J. Aitkenhead-Peterson and A. Volder), Pub. Agronomy Society of America. 29-56.

Soe W. Myint, Anthony Brazel, Gregory Okin, Alexander Buyantuyev. 2010 Combined Effects of Impervious Surface and Vegetation Cover on Air Temperature Variations in a Rapidly Expanding Desert City, **GIScience & Remote Sensing**, 47, 301-320.

Donna A. Hartz & Jay S. Golden & Chona Sister & Wen-Ching Chuang & Anthony J. Brazel. 2011. Climate and heat-related emergencies in Chicago, Illinois (2003–2006). **International Journal Biometeorology**, vol. 56:71–83.

Winston T. L. Chow & Ronald L. Pope & Chris A. Martin & Anthony J. Brazel. 2011. Observing and modeling the nocturnal park cool island of an arid city: horizontal and vertical impacts, **Theoretical & Applied Climatology**, vol 103,197–211

Soe W. Myint, Patricia Gober, Anthony Brazel, Susanne Grossman-Clarke, Qihao Weng. 2011, Per-pixel vs. object-based classification of urban land cover extraction using high spatial resolution imagery, **Remote Sensing of Environment**, vol. 115, 1145-1161.

Ariane Middel, Anthony Brazel, Bjoern Hagen & Soe Myint 2011. Land cover modification scenarios and their effects on daytime heating in the inner core residential neighborhoods of Phoenix, Arizona, **Journal of Urban Technology**, vol. 18, No. 4, 61-79

Ariane Middel, Anthony J. Brazel, Patricia Gober, Soe W. Myint, Heejun Chang, and Jiunn-Der Duh, 2012. Land cover, climate, and the summer surface energy balance in Phoenix, AZ and Portland, OR, **International Journal of Climatology**, vol. 32, 2020-2032.

Ariane Middel, Anthony J. Brazel, Shai Kaplan, Soe W. Myint. 2012. Daytime cooling efficiency and diurnal energy balance in Phoenix, Arizona, USA, **Climate Research**, vol. 54, 21–34.

Patricia Gober, Ariane Middel, Anthony Brazel, Soe Myint, Heejun Chang, Jiunn-Der Duh, and Lily House-Peters. 2012. Tradeoffs between water conservation and temperature amelioration in Phoenix and Portland: implications for urban sustainability, **Urban Geography**, vol. 33, 1030-1054.

Winston T.L. Chow, and Anthony J. Brazel. 2012. Assessing xeriscaping as a sustainable heat island mitigation approach for a desert city, **Building and Environment**, vol. 47, 170-181.

Winston T. L. Chow, Dean Brennan, and Anthony J. Brazel. 2012. Urban heat island research in Phoenix, Arizona – theoretical contributions and policy applications. *Bulletin of the American Meteorological Society*. Vol. 93, No. 4, 517-529.

Anthony J. Brazel, 2013. Scales of Climate in Designing with the Desert. In: **Design With The Desert**, Conservation and Sustainable Development (eds. R. Malloy, J. Brock, A. Floyd, M. Livingston, and R. H. Webb), CRC Press, pp. 59-72.

D. Ruddell, D. Hoffman, O. Ahmad, and A. Brazel. 2013. Historical threshold temperatures for Phoenix (urban) and Gila Bend (desert), central Arizona, USA. **Climate Research**, vol. 55, 201-215.

Donna A. Hartz, Anthony J. Brazel and Jay S. Golden. 2013. A comparative climate analysis of heat-related emergency 911 dispatches: Chicago, Illinois and Phoenix, Arizona USA 2003 to 2006, **International Journal of Biometeorology**, 10.1007/s00484-012-0593-z

SW Myint, EA Wentz, AJ Brazel, DA Quattrochi. 2013. The impact of distinct anthropogenic and vegetation features on urban warming. **Landscape Ecology** 28 (5), 959-978.

J Declet-Barreto, AJ Brazel, CA Martin, WTL Chow, SL Harlan. 2013. Creating the park cool island in an inner-city neighborhood: heat mitigation strategy for Phoenix, AZ. **Urban Ecosystems** 16 (3), 617-635.

A Middel, K Hüb, AJ Brazel, CA Martin, S Guhathakurta. 2014. Impact of urban form and design on mid-afternoon microclimate in Phoenix Local Climate Zones. **Landscape and Urban Planning** 122, 16-28.

BC Hedquist, AJ Brazel. 2014. Seasonal variability of temperatures and outdoor human comfort in Phoenix, Arizona, USA. **Building and Environment** 72, 377-388.

AJ Brazel, M Georgescu 2014. Hot Times in the City. Heat Islands, In **Sustain, Journal of Environmental and Sustainability Issues**. Issue 29 Fall/Winter 2014 The Kentucky Institute for the Environment and Sustainable Development.

- SW Myint, B Zheng, E Talen, C Fan, S Kaplan, A Middel, M Smith. 2015. Does the spatial arrangement of urban landscape matter? Examples of urban warming and cooling in Phoenix and Las Vegas. **Ecosystem Health and Sustainability** 1 (4), 1-15
- X Li, Y Kamarianakis, Y Ouyang, BL Turner II, A Brazel. 2015. On the association between land system architecture and land surface temperatures: Evidence from a Desert Metropolis—Phoenix, Arizona, USA **Landscape and Urban Planning** 163, 107-120.
- X Li, W Li, A Middel, SL Harlan, AJ Brazel, BL Turner II. 2016. Remote sensing of the surface urban heat island and land architecture in Phoenix, Arizona: Combined effects of land composition and configuration and cadastral–demographic. **Remote Sensing of Environment**. 174, 233-243
- K Crewe, A Brazel, A Middel. 2016. Desert New Urbanism: testing for comfort in downtown Tempe, Arizona **Journal of Urban Design** 21 (6), 746-763
- M Georgescu, WTL Chow, ZH Wang, A Brazel, B Trapido-Lurie, M Roth. 2015. Prioritizing urban sustainability solutions: coordinated approaches must incorporate scale-dependent built environment induced effects. **Environmental Research Letters** 10 (6), 061001
- C Fan, SW Myint, S Kaplan, A Middel, B Zheng, A Rahman, HP Huang. Understanding the impact of urbanization on surface urban heat islands—A longitudinal analysis of the oasis effect in subtropical desert cities. **Remote Sensing** 9 (7), 672
- S Kaplan, SW Myint, C Fan, AJ Brazel. 2017. Quantifying outdoor water consumption of urban land use/land cover: sensitivity to drought. **Environmental Management** 53 (4), 855-864
- AJ Brazel. 2017. Urban climate and physical geography: A response to Ashmore and Dodson **The Canadian Geographer/Le Géographe canadien** 61 (1), 112-116
- C Wang, A Middel, SW Myint, S Kaplan, AJ Brazel, J Lukasczyk. 2018. Assessing local climate zones in arid cities: The case of Phoenix, Arizona and Las Vegas, Nevada. **ISPRS Journal of Photogrammetry and Remote Sensing** 141, 59-71
- Y Kamarianakis, X Li, BL Turner, AJ Brazel. 2019. On the effects of landscape configuration on summer diurnal temperatures in urban residential areas: application in Phoenix, AZ **Frontiers of Earth Science** 13 (3), 445-463
- GM Heisler, A Brazel, ML Cadenasso. 2019. Urban Influences on the Atmospheres of Baltimore, Maryland, and Phoenix, Arizona. **Science for the Sustainable City: Empirical Insights from the Baltimore**.
- Brazel, A., 2020. June temperature trends in the Southwest Deserts of the USA (1950-2018) and implications for our urban areas. **Atmosphere**. v. 11, 1-13.
- AJ Brazel. 2019. **Urban Meteorology and Climatology**. Oxford University Press. Online.
- GM Heisler, AJ Brazel. The climate system, 2019. In **Understanding Urban Ecology**, 137-173

V. Ruiz-Aviles, A Brazel, JM Davis, D Pijawka. 2020. Mitigation of Urban Heat Island Effects through “Green Infrastructure”: Integrated Design of Constructed Wetlands and Neighborhood Development **Urban Science** 4 (4), 78

A Brazel. 2020. June Temperature Trends in the Southwest Deserts of the USA (1950–2018) and Implications for Our Urban Areas. **Atmosphere** 10 (12), 800

S AlKhaled, P Coseo, A Brazel, C Cheng, D Sailor. 2020. Between aspiration and actuality: A systematic review of morphological heat mitigation strategies in hot urban deserts **Urban Climate** 31, 100570

PJ Crank, A Middel, M Wagner, D Hoots, M Smith, A Brazel. 2020. Validation of seasonal mean radiant temperature simulations in hot arid urban climates. **Science of The Total Environment** 749, 141392

PRESENTATIONS – SOME RECENT:

Brazel, A. Panel Member, 2010 AAG Annual Meeting, Wash DC, Urban Climate Change.

Brazel, A. Heat Islands and global change, *National Council on Geographic Education*, October, 2007.

Brazel, et al, Shaping of Neighborhood Microclimates, *Ecological Society of America*, annual meeting, Sept 2007. San Jose, CA.

Brazel, A. 2007. Phoenix Heat Islands, *Association of American Geographers*, annual meeting, San Francisco.

D. Hartz, A. Brazel, J. Golden, B. Hedquist, K. Kaloush. 2008. Case study of thermographic observations of surface materials’ cooling rates and neighborhood design in suburban Phoenix, Arizona, *Sixth Symposium on the Urban Environment*, American Meteorological Society, New Orleans, Jan, 2008.

Anthony Brazel, 2008. Enhancing the Connectivity between research and applications for the benefit of society - *Board on the Urban Environment*, *American Meteorological Society* national meeting Plenary Session, New Orleans.

Anthony Brazel, urban climatology research, National Science Foundation Decision Center for a Desert City, Phoenix, Sept, 2008 (review visit)

Anthony Brazel, 2008. Benefits to Society of Urban Climate Research, *Annual Meeting Association of American Geographers*, Boston, MA.

Ariane Middel, Bjorn, A. Brazel, S. Myint, 2009. Simulation of possible scenarios for local scale energy balances in residential neighborhoods in Phoenix, AZ USA, *International Urban Planning and Environment Association*, <http://www.upe8.uni-kl.de> .

Brazel, A. J., P. Gober, S. Myint, R. Quay, A. Miller, S. Rossi, and S. Grossman-Clarke. 2009. Mitigating

Urban Heat Island Effects with Water- and Energy-Sensitive Urban Designs, Joint Session 7 Sustainable Urban Design (Joint between the Special Symposium on Aerosol–Cloud–Climate Interactions, the 11th Conference on Atmospheric Chemistry, the Fourth Symposium on Policy and Socio—Economic Research, the Eighth Symposium on the Urban Environment, and the Fourth Conference on the Meteorological Applications of Lightning Data) , *National Meeting American Meteorological Society*, Phoenix, AZ.

Hedquist, B. C. A. J. Brazel, S. Di Sabatino, W. Carter, and H. J. S. Fernando. 2009. Phoenix Urban Heat Island experiment: Micrometeorological aspects , Joint Session 12 Urban Heat Islands (Joint between the Eighth Symposium on the Urban Environment and the Timothy R. Oke Symposium) , *National Meeting American Meteorological Society*, Phoenix, AZ.

Prior presentations have been given at meetings such as the American Association of Geographers, American Meteorological Society (plus local chapter), Association of Applied Geographers, American Association for the Advancement of Science, East Lakes Regional Geographers, Middle States Geographers, Pacific Coast Geographers, Arizona-Nevada Academy of Science, New York Academy of Science, International Geographical and Geomorphological Unions, Canadian Association of Geographers, American Council of Engineering and Scientific Associations, International Arid Lands Research and Development Conference, Annual Binghamton Geomorphology Symposium, NATO, NSF Conference on Dust, Arizona Town Hall, 3rd Interagency Airborne Geoscience Workshop, 12th Canadian Symposium on Remote Sensing, International Association of Urban Climatology, Board of Urban Climatology, American meteorological Society, Pacific Coast Geographers.

PROFESSIONAL AFFILIATIONS:

American Geographical Society
Association of American Geographers, Editorial Board, 2010
American Meteorological Society,
American Association for the Advancement of Science, Fellow
Royal Meteorological Society
Sigma Xi, ASU Chapter Secretary
International Mountain Society
Arizona-Nevada Academy of Science
International Association on Urban Climate

EDITORIAL/ REVIEWER SERVICE:

Reviewer for:
Annals of the Association of American Geographers,
Habitat International
Journal of Urbanism
Professional Geographer,
The Geographical Bulletin
Geographical Review,
Physical Geography,
Science,
Nature,

Arctic and Alpine Research,
Advances in Meteorology
Bulletin of the American Meteorological Society
International Journal of Climatology,
Theoretical and Applied Climatology,
Water Resources Research,
Boundary Layer Meteorology,
Urban Ecosystems
Climate Research
Journal of Climate
Journal of Applied Meteorology,
Arizona Nevada Academy of Science,
Journal of Arid Land Environments.

Proposal Reviewer for:
National Science Foundation,
NASA, NOAA,
Research Council of Canada,
U.S. Dept of Agriculture,
U.S. Dept. of Energy,
U.S. Geological Survey.

Site Visitor:

review the PhD Program in Climatology, University of Delaware (1988, and March, 2000)
review the Department of Geography, Ben Gurion University, March, 2000, University of Indiana
Geography Program, Department of Geography, University of Western Ontario 2008, University of
Colorado Geography Dept, 2009, NCAR UCAR visit to review Lamont Doherty and International
Research Institute for Climate and Society, Columbia University.

RECENT PROFESSIONAL SERVICE:

2000 Board of Aerobiology and Biometeorology,
2000 UCAR Membership Committee
2002/5, 2005/8 Member Board on Urban Environments, American Meteorological Society,
2006 ARCUS National Science Foundation representative for ASU
2007 Scholarship Committee, International Association of Urban Climate
2007 AZ Water Institute Committee - evaluation of proposals
2009 Editor, Journal of the Arizona-Nevada Academy of Science, currently

PROFESSIONAL SERVICE at ASU

1976 Solar Energy Committee, ASU
1976 Committee on Educational Objectives, CLAS
1979 Member, Social Sciences Faculty Grant-in-Aid Committee
1980, 1995-6 Member, Advisory Board of Center for Environmental Studies
1981 Chair, Natural Sciences Faculty Grant-in-Aid Committee

1982 Member, Academic Standards Committee
 1982 Member, Faculty Advisory Council to Center SW Studies
 1985-86 Liberal Arts & Sciences College Curriculum Committee, CLAS
 1986-89 University Affirmative Action Review Board
 1991-93 Undergraduate Quality of Education Committee, CLAS
 1992 Course Organization/Teaching Effort Measurement Committee, ad hoc, CLAS
 1994 Core member, formation of Envir. Fluid Dynamics Program in Engineering ASU
 1995 ASU representative to Board of Oceans and Atmospheres, National Association of State Universities and Land-Grant Colleges
 1993-96 Core member, Provost Multiple Initiative Award on GIS at ASU
 1995- 1996 Faculty Member in Ecology Concentration
 1995-96 Freshman Discovery Tour Team Participant
 1996- 1999 Secretary, Sigma Xi National Honor Society, AZ Chapter
 1996 – 1997 Faculty Representative, Center for Latin American Studies, ASU
 1996-97 Member, University Task Force on Evaluation and Recognition of Service, ASU
 1997- 1998 Member, Environmental Resources Faculty, School of Planning and Landscape Architecture.
 2000 University Corporation for Atmospheric Research, Membership Committee, ASU
 2002 Board of Center for Environmental Studies
 2003 elected Senator-at-Large, College of Liberal Arts & Sciences Senate
 2005-2006 Convener, College of Liberal Arts & Sciences Senate
 2009-10 Member College of Liberal Arts & Sciences Senate

SCHOOL OF GEOGRAPHICAL SCIENCES & URBAN PLANNING SERVICE:

2007-8 Associate Director, School of Geographical Sciences
 2006-7 Acting Director, School of Geographical Sciences (former Dept. of Geography)
 1991-92 Chair, Department of Geography,
 Chair of the following committees: Personnel, Graduate, PhD Program
 Chair and Member of several faculty searches
 Member of Publications, Executive, Colloquium, Library, MA Program, Undergraduate Committees

COURSES TAUGHT:

Topoclimatology – upper division undergraduate/graduate
 Climate Change – graduate level
 Introduction to Physical Geography - undergraduate
 Quantitative Methods – upper division undergraduate
 Research Methods in Geography – upper division undergraduate
 Advanced Research Methods in Geography – graduate required course
 Introduction to Meteorology I and II - undergraduate
 Boundary Layer Climatology and Urban Environments Seminars - graduate
 Arctic/Alpine Environments – upper division undergraduate
 Snow and Ice Environments - graduate
 Field Methods in Geography – upper division undergraduate required course
 Urban Climate Seminar - graduate

Ecological Climatology – graduate/with Ecology Dept.
Global Change – undergraduate science & society requirement
ASU 101 – freshman orientation course
Cool Cities – graduate seminar of heat island mitigation and urban vulnerability

STUDENT MENTORING

MASTERS

ANDERSON, MICHAEL G. 1988. “Aquatic Macrophytes’ Evaporative Reduction Potential on Artificial Lakes and Stock Tanks in Arizona,” (Anthony Brazel).

EVANS, KENNETH E. 1988 “Distribution of Hourly Rainfall Intensities in the Southwest United States Summer Monsoon.” (Anthony Brazel).

GEORGE, MICHAEL H. 1989. “The Climatic Impact of Contrasting Vegetative Covers Due to Overgrazing in a Semiarid Grassland.” (Anthony Brazel).

HARTZ, DONNA. 2005. “Case Study of Suburban Development and Microclimate Variability in a Desert Urbanized Environment.” (Anthony Brazel).

HEDQUIST, BRENT. 2002. “Spatio-temporal Variation in the Phoenix East Valley Urban Heat Island.” (Anthony Brazel).

HUBBLE, MARK D. 1993. “Monitoring and Assessing Surface and Near Surface Urban Climate with Landsat Satellite Imagery: Phoenix, Arizona.” (Anthony Brazel).

PAUL INIGUEZ. 2009. “An Assessment of Anthropogenic Effects on Precipitation across the Phoenix Metropolitan Area” (Anthony Brazel)

KEON, THEODORE L. 1982. “Recurrent Nocturnal Temperature Rises, Salt River Valley, Arizona.” (Anthony Brazel).

MILLER, TOMAS A. 1987. “Analysis and Simulation of Summer Radiation Balance Components: West Gulkana Glacier, Alaska.” (Anthony Brazel).

PUPACKO ALEX. Non-thesis

SHARPE, JULIE. 1985. “The Effects of Edaphic Factors on Vegetation Communities of the Colorado Plateau, Arizona.” (Anthony Brazel).

STOLL, MATTHEW J. 1990. “Analysis of Land Use Effects on Surface to Air Temperature Relationships in an Urban Environment.” (Anthony Brazel and Robert Balling).

TOMALTY, ROGER non-thesis

WESER, PAUL. 1985. “Ocean-Atmosphere Interaction in the Southwest United States Summer Monsoon.” (Andrew Carleton and Anthony Brazel).

WINSLOW PEGGY non-thesis

ZIMMERMAN, STEPHEN F. 1977. “Effects of Variance in Microtopography and View Direction on

Remotely Sensed Temperature of Tilled Soils.” (Anthony Brazel).

PHDs

ABU-ZAID, MOHAMMED. 1986. “Potential Evapotranspiration in Arid Environments: Case Studies in Phoenix, Arizona, and Taif, Saudi Arabia.” (Anthony Brazel).

BACH, ANDREW J. 1995. “Climatic Controls on Aeolian Activity in the Mojave and Colorado Deserts, California.” (Anthony Brazel).

BARNETT, ALBERT P. 1980. “Residential Flood Irrigation and Microclimate in Phoenix, Arizona.” (Anthony Brazel and Melvin Marcus).

BLUMBERG, DAN G. 1993. “Prediction of Aeolian Processes by Remote Sensing and Models.” (Anthony Brazel).

NASRALLAH, HASAN A. 1988. “Analysis of Kuwait Temperature Records: Test of Heat Island Existence in Kuwait City Arid Environment.” (Anthony Brazel).

OROUD, IBRAHIM M. 1988. “Experimental and Numerical Investigation of Counter Radiation Variations in an Arid Urban Environment: Phoenix, Arizona.” (Anthony Brazel).

James Miller. 2007 “Heat Island Analysis of Las Vegas, Nevada” (Anthony Brazel).

Currently, Brent Hedquist MICROSCALE EVALUATION OF THE URBAN HEAT ISLAND IN PHOENIX, ARIZONA, draft PhD

Winston Chow

Donna Hartz

SERVICE ON MA COMMITTEES

Samantha Arundel, Bandana Banerjee, Kathleen Bergman, Peter Combs, Taly Drezner, Sage Grossi, Bruce Gwilliam, Tim Hawkins, John Hetrick, Dan Johnson, Adam Kalkstein, Stephen Kidder, Kristine Kosnik, Michael Lacy, Scott Lecce, Ted Lehman, Paul Manera, Donald Moon, Molly Pohl, Gregory Pope, Emily Prud’homme, Erienne Saffell, Randolph Sedlacek, Nancy Selover, Diane Smith, Mariela Soto, Diane Stanitski, Thomas Swoveland, Jonathan Triggs, Herbery Verville, Brandon Vogt

SERVICE ON PHD COMMITTEES

Sharolyn Anderson, Michael Applegarth, Samantha Arundel, Patricia Beyer, Virginia Hinchman, Karl Birkeland, Fred Chambers, Anne Chin, Peter Combs, Caroline Davis, Grady Dixon, Diane Douglas, Taly Drezner, Richard Earl, Donald Friend, Daniel Gilwitch, Bruce Gwilliam, Timothy Hawkins, Mark Hildebrandt, Sheng Hsu, Albert Hyers, Craig Idso, Daniel Johnson, Jeffrey Lee, Sharon Lite, Paul Manera, Linda O’Hirok, Thomas Paradise, Molly Pohl, Gregory Pope, Gary Powell, Joyce Quinn, Bruce Rhoads, James Rice, Shouaseni Roy, Erinanne Saffell, John Shaffer, David Stahle, Diane Stanitski, Lorenzo Vasquez-Salem, Russell Vose, Thad Wasklewicz, Harris Williams,

FORENSIC CONSULTING

2003-4: DP64, LLC, et al vs. City of Phoenix, weather-related activity.

1999: Analysis of Microburst wind event in Mesa AZ on “Outdoor Innovations, Ltd v. Chilton Business

Center, et al.” No. CV 96-23480. For Mohr, Hackett, Pederson, Blakley & Randolph, P.C.

1981: Analysis Central AZ Flooding on “Jerry Vittori, et ux., et al. And Michael Barnes, et al. Vs. Maricopa County Municipal Water Conservation District No. 1 C 390135, for O’Connor, Cavanagh, Anderson, Westover, Killingsworth & Beshears.

1981: Analysis of Chevron Chemical Spray on Agriculture Field in Phoenix on William Hubbard, Jr. and Thomas M. Hubbard vs. Chevron Chemical Company and Valley Sprayer and Duster Service, Inc.for Jennings, Strouss & Salmon.

Many activities providing legal consulting and verifying climate data as part of my duties as former State Climatologist for AZ.