

MARGARET A. TOLBERT

Distinguished Professor

Department of Chemistry and Biochemistry and CIRES

University of Colorado, Boulder, CO 80309

<http://cires.colorado.edu/science/groups/tolbert/>

phone: (303)-492-3179

fax: (303)-492-1149

tolbert@colorado.edu

EDUCATION:

June 13, 1986	Ph.D. in Chemistry California Institute of Technology Pasadena, CA 91125
Dec. 17, 1985	M.S. in Chemistry University of California Berkeley, CA 94720
May 22, 1979	A.B. with Honors in Chemistry Grinnell College Grinnell, IA 50112

RESEARCH EXPERIENCE:

2010 – present	Distinguished Professor, Dept. of Chemistry and Biochemistry
1998 - present	Professor, Dept. of Chemistry and Biochemistry, Univ. Colorado
1991 - 1998	Associate Professor, Dept. of Chemistry and Biochemistry, CU
1990 - 1991	Leader, Atmospheric Chemistry Group, SRI International
1986 - 1991	Staff Scientist in the Chemistry Laboratory, SRI International
1983 - 1986	Research Assistant with Prof. J.L. Beauchamp at the California Institute of Technology.
1979 - 1983	Research Assistant with Prof. J.H. Clark at the University of California, Berkeley.

TEACHING EXPERIENCE AND COMMUNITY SERVICE:

1992-present	Atmospheric Chemistry, graduate level
1992-present	Environmental Chemistry I and II, for non-science majors
2005	Atmospheric Aerosol Discussions
June 1991, 93, 99	Lecturer, Summer Colloquia for students in the atmospheric sciences, ACD/Advanced Study Program, NCAR.
1988 - present	Presented 118 lectures at universities and conferences.
1986 - 1987	Consulting Assistant Professor, Stanford University

CURRENT RESEARCH GROUP AT THE UNIVERSITY OF COLORADO

Kelly Baustian, 5th year Ph.D. student
Reae Lessard, 4th year MS student
Kyle Zarzana, 4th year PhD student
Carly Robinson, 4th year PhD student
Greg Schill, 3rd year PhD student
Danielle Nuding, 2nd year PhD student
Dr. Heidi Yoon, Postdoctoral Associate
Dr. Sarah Horst, Postdoctoral Associate
Christy Long, Undergraduate Research Assistant

PAST RESEARCH GROUP MEMBERS

Ann M. Middlebrook, Ph.D. 1994, now Research Scientist at NOAA Aeronomy
Sharon E. Anthony, Ph.D. 1995, now Associate Prof., Northland College
Brian S. Berland, Ph.D., 1996, now Research scientist, ITN Energy Systems
Laura T. Iraci, Ph.D., 1997, now Research Scientist, NASA Ames
Robert T. Tisdale, Ph.D., 1998, now Scientist at Midwest Research Institute
Krishna Foster, Ph.D., 1998, now Associate Prof., Cal. State University LA
Timothy Onasch, Ph.D., 1999, now Research Scientist, Aerodyne
Lori DelNegro, Ph.D., 1999, now Assistant Prof., Lake Forest College
Mark Zondlo, Ph.D., 2000, now Assistant Professor, Princeton University
Anthony Prenni, Ph.D., 2000, now Research Scientist, CSU
Paula Hudson, Ph.D. 2001, now Assistant Professor, California State Fullerton
David Glandorf, Ph.D. 2001, now in law school, Harvard University
Tara Fortin, Ph.D. 2002, now postdoctoral associate, NOAA Aeronomy Lab
Sarah Brooks, Ph.D. 2002, now Assistant Professor, Texas A&M
Megan Northway, Ph.D. 2004, now postdoctoral associate, Aerodyne Research
Matthew Wise, Ph.D. 2004, now Assoc. Prof., Concordia University
Beth Frinak, Ph.D. 2004, now Postdoctoral Associate, Westpoint
Dan Curtis, Ph.D. 2004, now Assistant Prof., Cal State University Northridge
John Shilling, Ph.D. 2005, now Research Scientist, DOE PNNL
Melissa Trainer, Ph.D. 2006, now researcher Scientist, NASA Goddard
Rebecca Garland, Ph.D. 2006, now Senior Researcher, CSIR Pretoria South Africa
Courtney Mashburn, Ph.D. 2007, now Assistant Prof., Hendrix College
Melinda Beaver, Ph.D. 2008, now Postdoctoral Associate, Caltech
Langley DeWitt, Ph.D. 2009, now Postdoctoral Associate, NOAA PMEL
Brandon Connelly, Ph.D. 2009, now Postdoctoral Associate, Penn State University
Raina Gough, Ph.D. 2010, now Postdoctoral Associate NIST
Christa Hasenkopf, Ph.D. 2011, now Fulbright Fellow
Dr. Birgit G. Koehler, postdoctoral associate, now at Bonneville power station
Dr. Robert Disselkamp, postdoctoral associate, now Research Scientist at PNNL
Dr. Marin Robinson, postdoctoral associate, now Associate Prof. at N. Arizona Univ.
Dr. Steven Barone, postdoctoral associate, now patent attorney, Boulder CO
Dr. Ron Siefert, postdoctoral associate, now Assistant Prof. at University of Maryland
Dr. Bhavani Rajaram, postdoctoral associate, now Research Scientist, Purdue
Dr. Miriam Freedman, postdoctoral associate, now Assis. Prof., Penn State Univ

HONORS AND AWARDS:

Harold S Johnston Lecturer, UC Berkeley (2011)
Distinguished Professor, University of Colorado (2010)
Carnegie Capital Science Evening Lecturer (2009)
ACS National Award for Creative Advances in Environmental Science (2009)
Frontiers in Science Lecturer, University of Iowa (2008)
Winter Commencement Speaker, University of Colorado (2007)
Doctor of Science *honoris causa*, Grinnell College (2007)
Hazel Barnes Prize, University of Colorado (2007)
Guggenheim Fellowship (2005)
Elected to the National Academy of Sciences (2004)
NASA Group Achievement Award, Crystal-Face Science Team (2003)
NASA Group Achievement Award, SOLVE Experiment (2001)
BFA Award for Excellence in Research, Scholarly and Creative Work (2001)
Camille Dreyfus Teacher-Scholar (1994)
James B. Macelwane Medal, American Geophysical Union (1993)
Fellow, American Geophysical Union (1993)
National Science Foundation Young Investigator (1992)
NSF Panelist, "Middle Atmosphere Science Initiative" (1992)
GRL Editor's Citation for Excellence in Refereeing (1991)
Fellow, Cooperative Institute for Research in Environmental Sciences (1991)
AAAS Newcomb Cleveland Award (1987 - 1988)
NSF Panelist, "Chemistry and the Environment" (1988)
Graduate Teaching Award, Caltech (1985)
Shell Companies Foundation Fellowship (1983)
Chancellor's Patent Fund Award, U.C. Berkeley (1979 - 1980)
Award to Outstanding Chemistry Graduate, Grinnell College (1979)
Phi Beta Kappa, Grinnell College (1978)
National Science Foundation Summer Fellowship, Ohio State University (1978)

PROFESSIONAL ACTIVITIES:

AGU Atmospheric Sciences Fellows Committee 2008 - 2011
Geosciences Initiative Steering Committee, CU, 2009 - 2010
PNAS, direct submission editor, 2009 - present
Hazel Barnes Selection Committee, 2008 - present
Co-Associate Director, CIRES Environmental Chemistry, 2008 - present
NSF, Committee of Visitors, 2007
National Academy Committee, Climate Change Science Program SAP 2.4, 2007
Associate Editor, Atmospheric Environment, 1999-2008
AGU Atmospheric Sciences Nominations Committee 2004-present
UCAR Board of Trustees, 1998-2001
Associate Editor, J. Geophys. Res. Atmospheres, 1997-2001
Awards Committee, Atmospheric Sciences, AGU, 1995-2000 (chair 99/00)
International Organizing Committee, Nucleation and Atmospheric Aerosols 2000
James B. Macelwane Medal Committee, AGU, 1996-1998

Evaluation Committee, GIT, School of Earth and Atmospheric Sciences, 1996
NRC Committee on Atmospheric Chemistry, 1994-1997
Review Panel, UNEP/WMO Scientific Assessment of Ozone Depletion 1994
Steering Committee, NASA Subsonic Assessment: Climate Effects, 1994
Advisory Board, C&E News, 1993-1995
Meetings Committee, Atmospheric Sciences, AGU, 1993-1995
AMS Committee on Middle Atmosphere, 1993-1995
Co-Author, Ch. 4, UNEP/WMO Assessment of Stratospheric O₃: WMO Report 37, 1994
Reviewer, Ch. 12, UNEP/WMO Assessment of Stratospheric O₃, WMO Report 37, 1994
Co-Author, Ch.5, HSRP/AESA Interim Assessment, NASA Ref Publication 1333, 1993
Co-Author, Ch.3, Scientific Assessment of Ozone Depletion: WMO Report 25, 1991
American Chemical Society
American Geophysical Union
American Meteorological Society
Sigma Xi

AWARDS TO GRADUATE STUDENTS UNDER DIRECTION OF PROF. TOLBERT:

Best Paper Awards:

Best Student Poster Award: "FTIR studies of model polar stratospheric cloud surfaces," **Ann Middlebrook**, 13th Surface/Interface Research Meeting of the Northern California Chapter of the American Vacuum Society, SRI International, Menlo Park, CA, June, 1990.

Outstanding Student Paper Award: "Spectroscopic Studies of the Formation of Model Polar Stratospheric Clouds on Thin Sulfuric Acid Films," **Ann Middlebrook**, Fall AGU Meeting, San Francisco, CA, Dec., 1993.

Outstanding Student Paper Award: "Nitric Acid Condensation on Thin Sulfuric Acid Films Under Stratospheric Conditions," **Laura T. Iraci**, Fall AGU Meeting, San Francisco, CA, Dec., 1994.

Outstanding Student Paper Award: "Surface Sensitive Studies of ClONO₂ Hydrolysis on Ice," **B. S. Berland**, Fall AGU, San Francisco, Dec. 1996.

Outstanding Student Paper Award: "Vapor Pressure Studies of α -Nitric Acid Trihydrate," **Laura T. Iraci**, Fall AGU Meeting, San Francisco, Dec. 1997.

Outstanding Student Paper Award: "In-Situ Measurements of NO₂ in POLARIS: Changes within the Reactive Nitrogen Reservoir," **Lori DelNegro**, Fall AGU Meeting, San Francisco, Dec. 1997.

Outstanding Student Paper Award: "Interaction of Acetone, Acetaldehyde and Acetic Acid with Ice," **Paula Hudson**, Spring AGU Meeting, Boston, May 1999.

Outstanding Student Paper Award: “Infrared spectroscopic studies of the low-temperature phase behavior of ammonium sulfate,” **T. J. Fortin**, Spring AGU meeting, Washington DC, May 2000.

Outstanding Student Paper Award: “Composition of Polar Stratospheric Clouds Using Infrared Extinction Measurements,” **D. L. Glandorf**, Spring AGU meeting, Washington DC, May 2000.

Outstanding Student Paper Award: “Constraining polar stratospheric cloud particle sizes and number concentrations required to denitrify the 1999-2000 Arctic vortex,” **Megan J. Northway**, Fall AGU meeting, San Francisco, December 2001.

Outstanding Presentation, Response of aerosol light extinction to changes in relative humidity, **Rebecca Garland**, APS Four Corners Meeting, Boulder, CO Oct. 2005.

Outstanding Student Paper Award: “Nitric acid trihydrate formation on Na-Montmorillonite clay,” **Courtney Mashburn**, Fall AGU meeting, San Francisco, December 2005.

Outstanding Student Paper Award: “Effects of palmitic acid on water uptake and ice nucleation properties of ammonium sulfate particles,” **Kelly Baustian**, Fall AGU meeting, San Francisco Dec, 2009.

Student Fellowships:

NASA Graduate Student Fellowship in Global Change Research, **Ann M. Middlebrook**, “Heterogeneous Chemistry of Model Stratospheric Aerosol Films”, 1992-1994.

NASA Graduate Student Researchers Fellowship, **Sharon E. Anthony**, “Experimental Studies of Model PSC Particles in a Laminar Flow System,” 93-95.

NASA Graduate Student Researchers Fellowship, **Brian S. Berland**, “Surface Kinetics of ClONO₂ Chemistry on Model Polar Stratospheric Clouds”, 1993-1996.

NASA Graduate Student Researchers Fellowship, **Laura T. Iraci**, Infrared studies of sulfuric acid and its impact on polar and global ozone”, 1994-1997.

NASA Graduate Student Researchers Fellowship, **Timothy B. Onasch**, “Mechanism of heterogeneous atmospheric reactions on model polar stratospheric clouds”, 1995-1998.

NASA Graduate Student Fellowship in Global Change Research, **Mark A. Zondlo**, “Surface Properties and Chemistry of Model Polar Stratospheric Clouds,” 1995-1998.

US EPA Graduate Student Fellowship, **Anthony Prenni**, 1999-2000.

NASA Earth System Science Fellowship, **David Glandorf**, “Determination of Optical Constants for the Remote Detection of Clouds and Aerosols,” 1997-2000.

NASA Earth System Science Fellowship, **Tara Fortin**, “Laboratory Studies of Cirrus Cloud Formation Mechanisms,” 1998-2001.

NASA Graduate Student Researchers Fellowship, **Daniel Curtis**, “Hydrocarbon Nucleation on Tholins: Application to Tholins”, 2000-2003.

NASA Earth System Science Fellowship, **Matthew Wise**, “Laboratory Studies of Ice Nucleation from Internally Mixed Sulfuric Acid/Mineral Aerosol Particles”, 2000-2003.

NASA Earth System Science Fellowship, **John Shilling**, "Heterogeneous N_2O_5 hydrolysis on mixed films representative of tropospheric aerosol particles, 2001-2004.

NASA Graduate Student Researchers Program, **Melissa Trainer**, “Production and Analysis of Early Earth Tholins,” 2002-2005.

CIRES Graduate student Fellowship, **Courtney Mashburn**, 2005-2006.

EPA Fellowship, **Melinda Beaver**, 2005-2008.

NASA Graduate Student Researcher program, **Langley DeWitt**, “Hydrogen’s role in production of organic hazes on early Earth and the outer planets,” 2005-2008.

NASA Earth System Science Fellowship, **Brandon Connelly**, Uptake of organics by thin sulfuric acid/ammonium sulfate films, 2007-2009.

CIRES Graduate Student Fellowship, **Christa Hasenkopf**, summer 2007

NSF Graduate Student Fellowship, **Christa Hasenkopf**, 2007-2009

CIRES Graduate Student Fellowship, **Kelly Baustian**, summer 2008

NASA Earth System Science Fellowship, **Kelly Baustian**, 2008-2011

NASA Earth System Science Fellowship, **Raea Lessard**, 2010-2013