

Susquehanna Valley Section American Chemical Society

Annual Education Awards Banquet



**Kehr Union Building, Room 408
Bloomsburg University
Bloomsburg, Pennsylvania**

7 May 2008

5:30 p.m.

PROGRAM

- I. Welcome and Introductions**.....*Dr. William Simpson*
- II. 50/60-Year ACS Members**.....*Dr. William Simpson*
DR. MAURICE HART
DR. JAMES K. HUMMER (60 years)
- III. Joseph Priestley Service Award**.....*Mr. Ronald Blatchley*
MR. RODERIC MOORE, Retired from Wise Food Co.
- IV. High School Teacher Award**.....*Mr. Ronald Blatchley*
DEBORAH SLATTERY, Danville High School
- V. David H. Frederick Memorial Awards in High School Chemistry**.....*Dr. Eric Hawrelak*

EXAM A WINNERS

BEN HOLLENBACH	Mifflinburg Area High School
KELSEY METZ	Williamsport Area High School
NICHOLAS MATONE	Scranton Preparatory School
MATT GARBIN	Abington Heights High School
RICHA PURSANI	Pittston Area High School
LEWIS BEVANS	MMI Preparatory School

EXAM A RUNNERS-UP

JONATHAN BASTIAN	Mifflinburg Area High School
MAJA OSTOJIC	Hughesville High School
BRANDON GARDNER	Jersey Shore High School
TAYLOR DAVIS	Old Forge High School
ALEXANDRA BURGE	Holy Cross High School
RICHARD TRAVIS	Western Wayne High School
LAUREN PARA	Pittston Area High School

JULIA DAVIS Bloomsburg High School

JANELLE STINE Danville High School

EXAM B WINNERS

LAUREN PENNACHIO Abington Heights

ADAM BURT Wyoming Area High School

LANCE MILLER Mifflinburg Area High School

VI. College Award Winners*Dr. Therese Wignot*

EVAN THURSBY Bloomsburg University

ADAM CATHERMAN Bucknell University

AMANDA MARCHICA King's College

BRIAN KONZMAN Scranton University

JAMES THOMAS Wilkes University

ASHLEE ZELINSKY Susquehanna University

VII. "Greenhouse Cooling?: Using Earth's Upper Atmosphere to Track Climate Change", Dr. Karen Castle, Bucknell University

Most people are familiar with the warming trend that results from increased concentrations of greenhouse gases in the troposphere (the 20 km layer of the atmosphere in contact with Earth's surface.) Until fairly recently the effects of increased greenhouse gases on the upper atmosphere have received little attention. There is now clear evidence that the mesosphere and lower thermosphere (MLT) between 75-125 km altitudes have cooled significantly over the past 30 years due to cooling mechanisms of the trace species CO₂ and NO. In general, the temperature and density structure of the MLT is incredibly sensitive to small changes in chemical and dynamical processes occurring at lower altitudes. Closely monitoring the MLT could be one of the most sensitive indicators of global, long-term variations in climate. Since modeling this region of the atmosphere is far from simple, experiments that help reduce uncertainty in key kinetic parameters are crucial. My research group works to better understand and quantify some of the most important cooling and heating mechanisms in the MLT, such as vibrational energy transfer in CO₂-O and O₃-O collisions.

BIOGRAPHY

Dr. Karen J. Castle received her BS in chemistry from the University of California at Irvine in 1996. Her graduate work was done at Oregon State University where she completed her Ph.D. in physical chemistry in 2000. As Dr. Wei Kong's first doctoral student, she studied the photochemistry of molecules oriented with a strong uniform electric field. Dr. Castle went on to receive a National Research Council Postdoctoral Associateship at the Air Force Research Laboratory, Space Vehicles Directorate at Hanscom Air Force Base in Bedford, MA where she studied hydrocarbon - atomic oxygen interactions in the lab of Dr. James Dodd. She began her current tenure-track appointment at Bucknell University in 2002. Dr. Castle's current research interests are in using laser spectroscopy to measure the kinetics of important cooling and heating mechanisms in Earth's upper atmosphere. The Castle research group is part of the support team for NASA's ongoing SABER/TIMED mission.

2008 ACS SUSQUEHANNA VALLEY SECTION OFFICERS

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The American Chemical Society is a nonprofit scientific and educational association of professional chemists and chemical engineers. Although the Society is primarily an American organization, virtually every nation is represented among its nearly 160,000 members.

The programs of the Society include meetings, publications, education, awards, and public service activities, including National Chemistry Week. 1500 ACS meetings are held each year at the local, regional, national, and divisional levels. Over twenty ACS journals are the leading resources in the chemical field. Educational activities include services to high school and college chemistry students and continuing education programs for its members. The Society presents numerous awards for outstanding achievement in various fields of chemistry through national, regional, divisional, and local channels. Fellowships and research grants for basic research are administered by the society.

The Susquehanna Valley Section of the ACS includes members from eight counties in central to northeastern Pennsylvania.