Investigators: Jack Fishman (PI) and Benjamin de Foy (Co-I)

Project duration: June 1, 2012 – May 31, 2013

Project #1 Title (de Foy, lead): Oversampling of OMI data to estimate point source emissions and atmospheric lifetimes of SO$_2$

Air Quality Management Partners: Lake Michigan Air Directors Consortium (Ladco)

Project duration: June 1, 2012 – May 31, 2013

Problem to be solved: Due to revisions in the national health standard for SO$_2$, there is a renewed interest in identifying impacts from large point sources and simulating SO$_2$ plume dispersion.

Project description: This project will use oversampling of high resolution swath data from OMI above point sources with large signals both in the US and abroad. Data will be mapped onto polar grids and aggregated into different wind transport groups using meteorological data. Numerical simulations will be performed with CAMx to compare the results. Curve fitting will be used to estimate the source strengths and atmospheric lifetimes for different locations.

Deliverables:
- Maps of OMI data
- CAMx simulations of point sources
- Publication on SO2 sources and lifetime

Project #2 Title (Fishman, lead): Ozone Garden Project and Coordination of Outreach Activities for AQAST

Education/Outreach Partners: Dr. Cindy Encarnacion, Saint Louis Science Center; Ms. Sheila Voss, Missouri Botanical Garden

Project duration: June 1, 2012 – May 31, 2013

Problem to be solved: It is strongly encouraged that the scientists making up AQAST be involved in Education/Public Outreach (E/PO) activities. As part of this project, Dr. Fishman will coordinate E/PO activities for the entire AQAST team.

Project description: The St. Louis Ozone Garden Project has been initiated as a collaborative effort led by Saint Louis University’s Center for Environmental Sciences (CES), in conjunction with the Missouri Botanical Garden and the Saint Louis Science Center. It is intended to be the prototype garden for NASA’s Air Quality Applications Science Team that will serve as a display that demonstrates the impact of degraded air quality on the planet’s living biota. In future years, it is envisioned that similar gardens will be planted at other locations around the country, with other members of the AQAST forming partnerships with their own local Science Centers and/or Botanical Gardens.

Deliverables:
- Quasi-monthly status reports published on the AQAST website
- Formal presentation of results from first season (summer 2012) at AQAST member meeting.
- Education/Public Outreach proposal submitted to NASA Headquarters

Milestones for Year 2 of Project #2

- May-Sept. 2012 Maintain garden and collect data quantifying foliar injury to plants.


- December 2012 Present findings to AQAST membership meeting;

- Jan. – Feb. 2013 Solicit partners for AQAST Education/Public Outreach proposal

- March 2013 Formulate E/PO proposal

- Submit E/PO proposal to NASA Headquarters