



Mirror Development
Technology Days 2011
In the
Government

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Welcome

Old Business

Presentations from 2010 have been posted to Air Force website

New Business

Tech Days 2011 will likely be near GSFC as long as JWST is at GSFC
NASA HQ is creating Tech Day meetings for other Technologies:

Lasers/LIDAR, Detectors, etc.

We may be asked to consolidate

Important Information

Coffee Breaks, Lunch and Receptions

Photograph today before lunch (I think)

Announcements

ITAR Sessions

Public Release Approvals and Cancellations

Schedule Changes

GSFC Tour

Exhibitors

Sponsors



Purpose of Tech Days

Mirror Technology is critical for NASA & DoD missions.

Topics discussed enable missions for next 10 to 20 yrs.

Tech Days has two Goals:

How are we Spending the Taxpayer's money

1. Is the Government Investing the Taxpayer's money wisely
Are we funding 5 good ideas or 1 good idea 5 times?
2. Are we getting good value for our investment?
3. How can we coordinate our activities to maximize the efficacy of our investments.

Provide a networking opportunity for Vendors and Government.



Thank You and Acknowledgements

Organizing Committee

Dr. Petar Arsenovic, NASA
Goddard Space Flight Center

Lt. Col. Travis Blake, DARPA

Hans-Peter Dumm, US Air Force
Research Lab, Space Vehicles
Directorate

Dan Harris, Navy China Lake

Dr. Carol R. Lewis, Jet Propulsion
Laboratory

Dr. Larry Matson, U.S. Air Force
Research Laboratory, Material
Directorate

Dr. H. Philip Stahl, NASA
Marshall Space Flight Center

National Capital Section of OSA

Dr. Joe Howard

Dr. Petar Arsenovic

Peter Blake

Anita Thompson

SPIE

Marilyn Gorsuch

Linda Warren

AFRL

Hans-Peter Dumm



Technology Days 2010





Tech Day Surplus Fund

Tech Days meeting typically generates a surplus.

In 2011, we awarded \$1300 in prizes at the North Alabama Regional and Alabama State Science Fair

Additionally, in 2010, we awarded \$1300 to a student under the NAOAP (next chart).

And, in 2011, we plan to award \$5200 to 4 NAOAP students



North Alabama Optics Apprenticeship Program

Using Tech Day surplus funds, Huntsville Electro-Optical Society added a new outreach to its existing activities:

North Alabama Optics Apprenticeship Program (NAOAP)

Alabama State Science & Engineering Fair

North Alabama Regional Science & Engineering Fair

Alabama Math Science Technology Initiative: Hands on Optics

Graduate Student Research Poster Contest

NAOAP offers high school and college students the opportunity to work at real-world optics companies and laboratories to gain invaluable experience and to encourage them to pursue a career in optical science and engineering.



NAOAP 2010

Molly Mahan

Graduating Senior from Brewer High School (Lacy Springs, AL)

Class Salutatorian (4.0 or 4.5 weighted)

Highest Class Average in : Physics, Calculus, Gov, A.P. English

12 Semester hours at Wallace State Community College

Attending University of Alabama Huntsville in Fall 2010 majoring in
Optical Engineering

Location: K-Science

Mentor: Val Korman & Dr. Don Gregory (UAH)

Tasks: Built IR Source, LabView, Laser Profilometer

Amount: \$1,350



NAOAP 2010 Feedback

Comments:

Great program, allowed me to get work experience in an optics field.
I not only learned more about Optical engineering but other engineering fields as well.

What Learned:

Be flexible to make adjustments and improvements during a project .
Fibers are very delicate
It is good to work in teams
Get advice and insight from other people
Brainstorm together



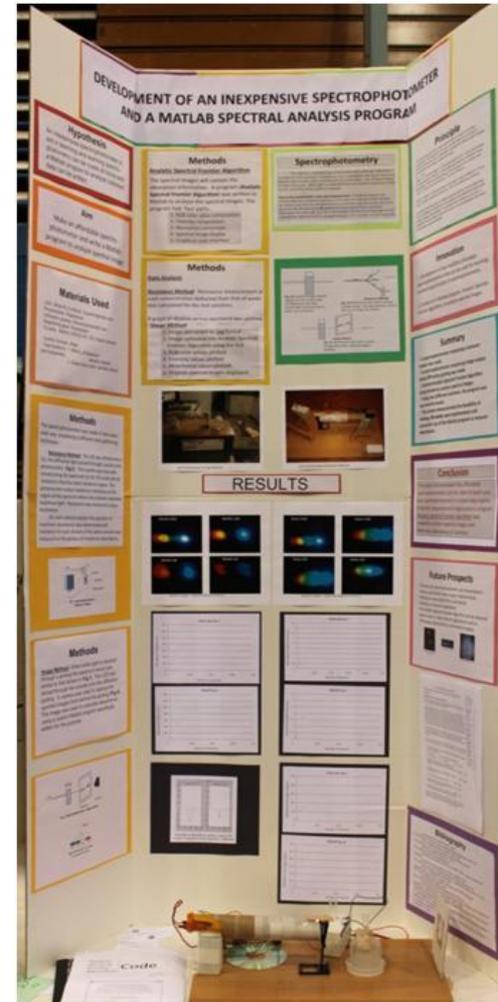
2011 Alabama State Science Fair Senior Division First Award \$125

Lakshmi Raju

Alabama School of Fine Arts

“Spectral Analysis”.

Lakshmi built a grating slit spectrometer and studied the spectra of different light sources. She also studied diffractive dispersion.





2011 Alabama State Science Fair Senior Division Second Award \$75

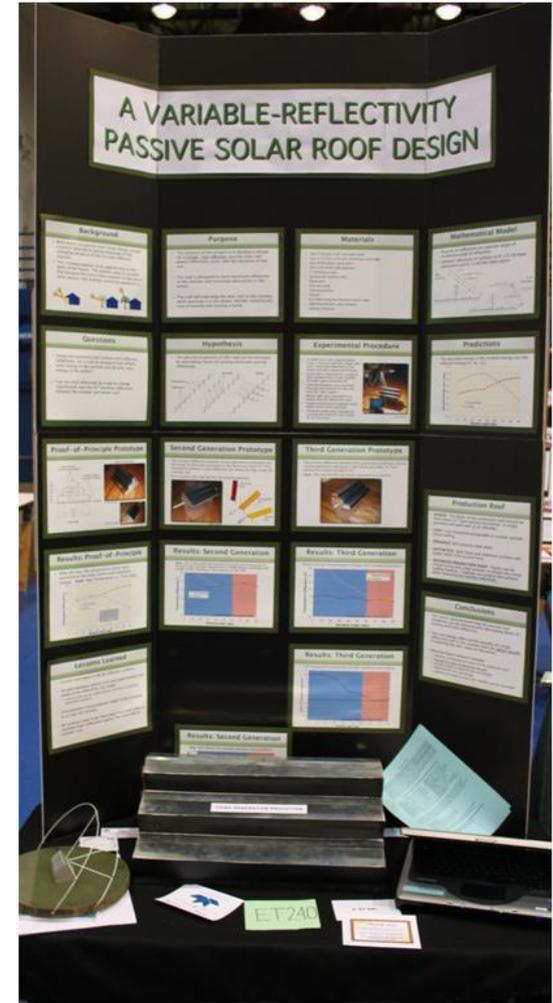
Matthew Ashburn

Covenant Christian Academy

“Variable-Reflectivity Passive Solar Roof”

Matthew showed that roof with horizontal reflective surfaces and vertical black surfaces preferentially rejects heat at high sun angles and absorbs heat at low sun angles.

Matthew also received the Senior Division \$100 First Award at the North Alabama Regional Science Fair





2011 Alabama State Science Fair Senior Division Second Award \$75

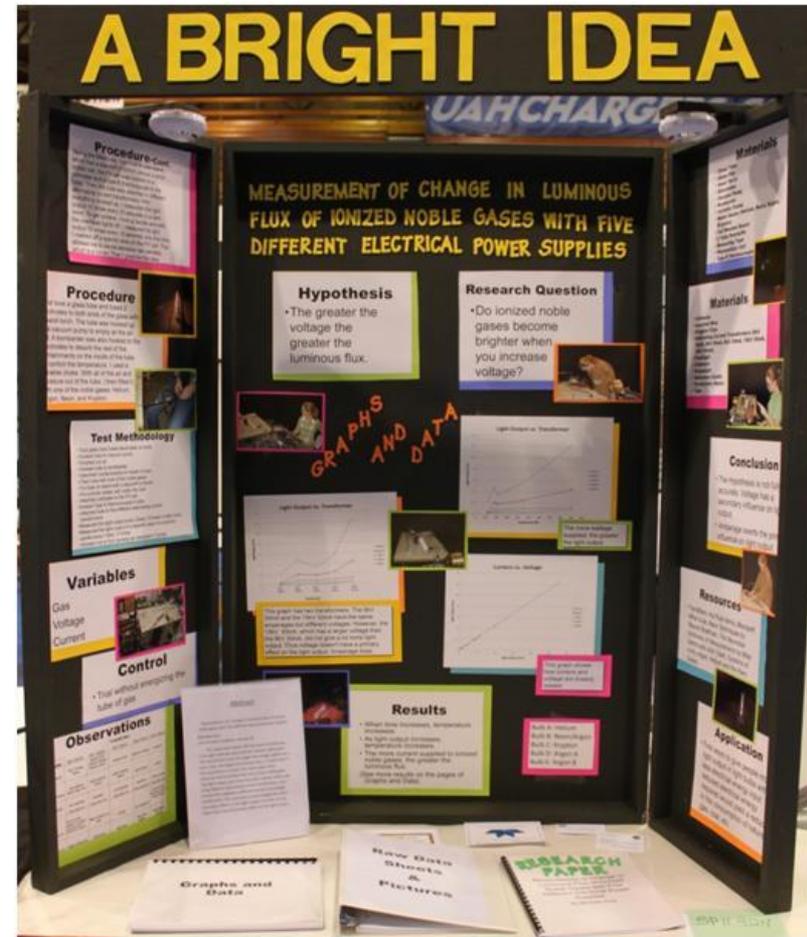
Michelle Rule

Life Christian Academy

“Measuring the Change in Light Output of Ionized Noble Gases with Different Electrical Power Supplies”.

Michelle fabricated plasma discharge tubes with different noble gases and studied their photometric output as a function of voltage and amperage.

Michelle also received the Senior Division \$50 Second Award at the North Alabama Regional Science Fair





2011 Alabama State Science Fair Junior Division First Award \$125

Joseph Patrick Lee

8th Grader, St. Peter's Academy

“It's Light Part Two”

Joseph filled glass test tubes in a water bath with Argon & Neon; sealed them with a cork; and studied output light power as a function of volts & amps.

Joseph also received a \$100 First Award at the North Alabama Regional Science Fair





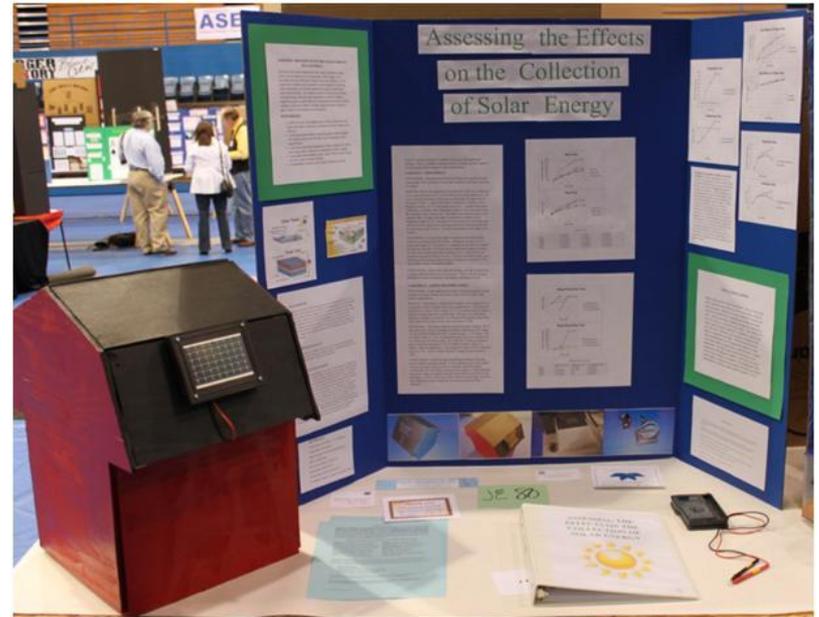
2011 Alabama State Science Fair Junior Division First Award \$125

Will Pannell

The Altamont School

“Assessing the effects on the collection of solar energy”.

Will showed that a roof with facets produces more electricity than either a flat or ‘A’ shape roof because it keeps the solar cell pointed at the sun for longer periods.





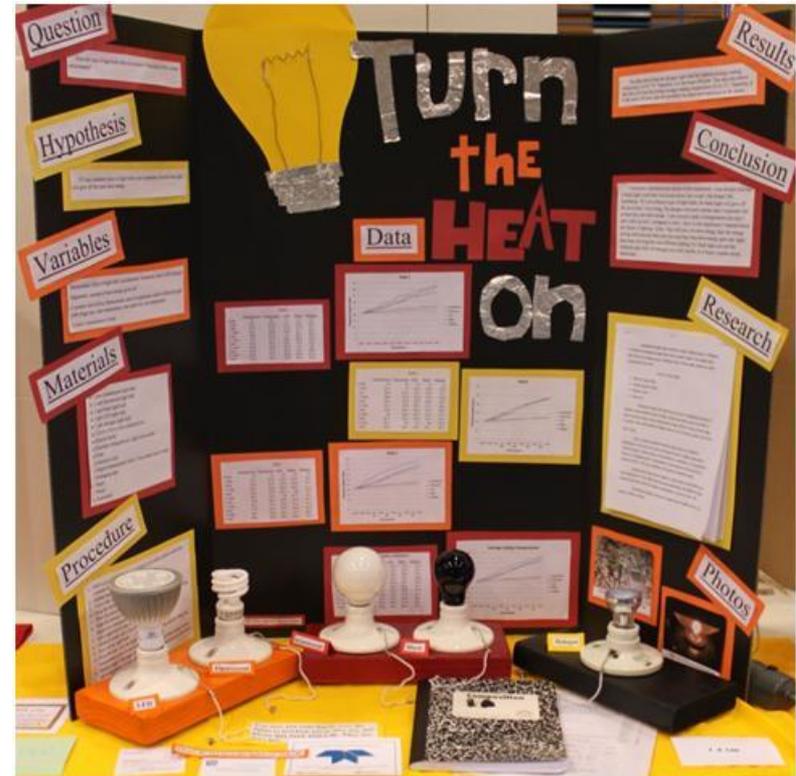
2011 Alabama State Science Fair Junior Division Second Award \$75

Sam McPheeters

Hampton Cove Middle School

“Turn the Heat On”

Sam showed that less efficient
light bulbs produced more heat &
less light



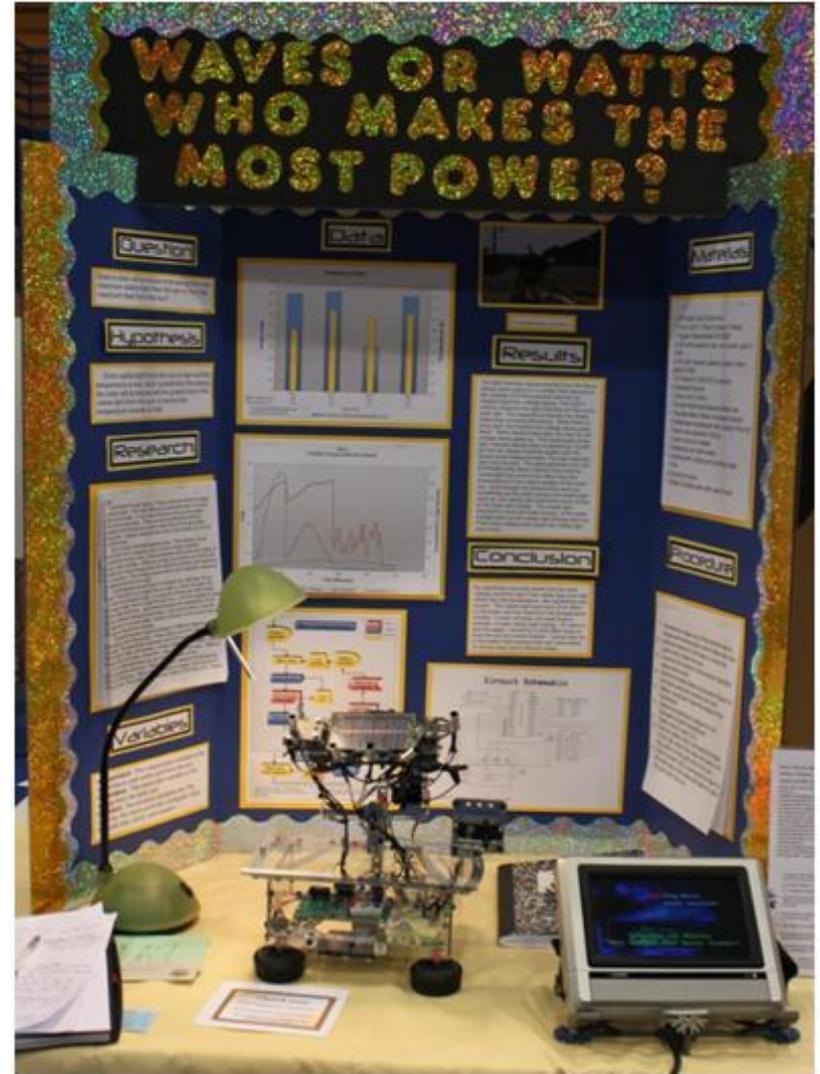


2011 North Alabama Regional Science Fair Junior Division First Award \$125

Matthew Castleberry
Hampton Cove Middle School

“Waves or Watts who makes the most power?”

Matthew built a robotic solar tracker to keep a solar cell pointed towards a light source.





Thank You