

Title: NASA Earth Science – International Polar Year Student Opportunities

Description: This session will highlight NASA education opportunities for teachers to use with their students for the International Polar Year. This session will provide overview of NASA's role in the International Polar Year, the resources and opportunities useful for involving students in IPY.

Presenter: Jim Fitzgerald, Aerospace Education Specialist  
Jim is the NASA AESP Representative in the NASA Glenn Research Center six-state region. Request AESP programs at: <http://csats.psu.edu/aesp.htm>

- 
- NASA Portal: <http://www.nasa.gov>
  - NASA & the International Polar Year: [http://www.nasa.gov/mission\\_pages/IPY/main/index.html](http://www.nasa.gov/mission_pages/IPY/main/index.html)
    - <http://www.us-ipy.gov/Default.aspx?tabid=104>
  - Antarctica Ice melt speeds up: [http://www.nasa.gov/mission\\_pages/IPY/main/index.html](http://www.nasa.gov/mission_pages/IPY/main/index.html)
  - Goddard Multimedia: <http://www.nasa.gov/centers/goddard/multimedia/>
    - Earth videos: <http://www.nasa.gov/centers/goddard/multimedia/catalogue.html#earth>
  - NASA involvement in IPY video: <http://www.youtube.com/watch?v=0iP1jYyGDZ4>
  - NASA IPY Teacher Resources: [http://www.nasa.gov/mission\\_pages/IPY/main/educators.html](http://www.nasa.gov/mission_pages/IPY/main/educators.html)
  - NASA Snow Data Helps Maintain Nation's Largest, Oldest Bison Herd: [http://www.nasa.gov/centers/goddard/news/topstory/2006/yellowstone\\_bison.html](http://www.nasa.gov/centers/goddard/news/topstory/2006/yellowstone_bison.html)
  - International Space Station Crew Images & IPY (Fact Sheet): [http://www.nasa.gov/mission\\_pages/station/science/experiments/CEO-IPY.html](http://www.nasa.gov/mission_pages/station/science/experiments/CEO-IPY.html)
  - NASA Polar Express (Images) <http://ipy.nasa.gov/>
  - JPL & IPY Observations: <http://www.jpl.nasa.gov/news/features.cfm?feature=1322>
  - JPL Video: <http://www.jpl.nasa.gov/videos/earth/ipy20070320/>
  - Gateway to NASA Earth Images from ISS & IPY: <http://eol.jsc.nasa.gov/IPY/>
  - My NASA Data – IPY Lesson Plans: [http://mynasadata.larc.nasa.gov/IPY\\_lessons.html](http://mynasadata.larc.nasa.gov/IPY_lessons.html)
  - NASA Exploring Space Challenges: <http://esc.nasa.gov/index.html>
  - GLOBE & IPY: <http://www.globe.gov/fsl/html/templ.cgi?ipy>
  - IPY Homepage: <http://classic.ipy.org/development/eoi/details.php?id=359>
  - IPY Proposal (Official): <http://classic.ipy.org/development/eoi/proposal-details.php?id=336>
  - Reindeer & Snowflakes: NASA Helps During IPY: <http://eobglossary.gsfc.nasa.gov/Newsroom/NasaNews/2007/2007032824632.html>
  - Formation and growth of sea ice: [http://www.gi.alaska.edu/~eicken/he\\_teach/GEOS615icenom/form/intro.html](http://www.gi.alaska.edu/~eicken/he_teach/GEOS615icenom/form/intro.html)
  - NASAExplorer @ youtube:
    - NASA: Daily Arctic Sea Ice 2005-2006 <http://www.youtube.com/watch?v=Elo5cqdv1kM>
    - NASA's Role in the IPY: <http://www.youtube.com/watch?v=0iP1jYyGDZ4>
  - NSTA Web Seminar on IPY: [http://learningcenter.nsta.org/products/symposia\\_seminars/fall07/IPY\\_Denver/webseminar.aspx](http://learningcenter.nsta.org/products/symposia_seminars/fall07/IPY_Denver/webseminar.aspx)
    - Related Seminars [http://www.nsta.org/store/search.aspx?action=similar&id=10.2505/9/WSPCH07\\_June12](http://www.nsta.org/store/search.aspx?action=similar&id=10.2505/9/WSPCH07_June12)
  - Astronaut Earth Images: <http://eol.jsc.nasa.gov/>
    - IPY Images: <http://eol.jsc.nasa.gov/scripts/sseop/PhotoldSets/PhotoldSets.pl?set=IPY>
    - <http://eol.jsc.nasa.gov/IPY/>
  - NASA Earth Observatory: <http://earthobservatory.nasa.gov/>
  - Phoenix & Mars Polar Plains [http://www.nasa.gov/mission\\_pages/phoenix/main/index.html](http://www.nasa.gov/mission_pages/phoenix/main/index.html)
  - IPY Alaska: [http://www.gi.alaska.edu/~eicken/he\\_teach/GEOS615icenom/form/intro.html](http://www.gi.alaska.edu/~eicken/he_teach/GEOS615icenom/form/intro.html)
  - Types of Ice: [http://www.gi.alaska.edu/~eicken/he\\_teach/GEOS615icenom/form/types.html](http://www.gi.alaska.edu/~eicken/he_teach/GEOS615icenom/form/types.html)
  - GLOBE & IPY: <http://www.globe.gov/fsl/html/templ.cgi?ipy>
  - EarthKam: <http://www.earthkam.ucsd.edu/>
  - NASA Earth Observatory: <http://earthobservatory.nasa.gov/>
  - NOAA & IPY: <http://www.ipy.noaa.gov/resources.html>
    - <http://www.gfdl.noaa.gov/~kd/KDwebpages/NHice.html#one>

**NASA Aerospace Educational Services Program (AESP)**  
**International Polar Year**  
[james.b.fitzgerald@nasa.gov](mailto:james.b.fitzgerald@nasa.gov)

**Other Links:**

- Exploration Systems Mission Directorate: <http://www.exploration.nasa.gov/>
- STS-118 Mission: <http://www.nasa.gov/sts118>
- Human Spaceflight: <http://spaceflight.nasa.gov>
- Space Operations Mission Directorate: <http://www.hq.nasa.gov/osf/>
- NASA Vision for Space Exploration:  
[http://www.nasa.gov/mission\\_pages/exploration/main/index.html](http://www.nasa.gov/mission_pages/exploration/main/index.html)
- Space Shuttle: [http://www.nasa.gov/mission\\_pages/shuttle/main/index.html](http://www.nasa.gov/mission_pages/shuttle/main/index.html)
- Astronaut Selection: <http://www.nasajobs.nasa.gov/astronauts/>
- Astronaut Biographical Sketch: <http://www.jsc.nasa.gov/Bios/>
- Humans in Space: <http://www.nasa.gov/vision/space/features/index.html>
- New Launch Vehicle: [http://www.nasa.gov/mission\\_pages/constellation/main/index.html](http://www.nasa.gov/mission_pages/constellation/main/index.html)
- Robotics <http://robotics.nasa.gov/home/home.php>
- Astronauts' Little Helpers: [http://www.nasaexplores.com/show2\\_article.php?id=01-046](http://www.nasaexplores.com/show2_article.php?id=01-046)
- ImagiBotics: <http://robotics.arc.nasa.gov/edu/6-8.htm>
- [http://digg.com/educational/New\\_NASA\\_video\\_astounding\\_arctic\\_sea\\_ice\\_melt](http://digg.com/educational/New_NASA_video_astounding_arctic_sea_ice_melt)
- <http://www.youtube.com/watch?v=Elo5cqdV1kM>

---

**Introduction to NASA Education**

**NASA Education :** <http://education.nasa.gov>

- STS-118 Student Challenges:  
<http://www.nasa.gov/audience/foreducators/stseducation/home/index.html>
- Education Resources  
[http://www.nasa.gov/audience/foreducators/topnav/schedule/extrathemes/F\\_Back\\_to\\_the\\_Moon\\_and\\_Mars\\_Extra.html](http://www.nasa.gov/audience/foreducators/topnav/schedule/extrathemes/F_Back_to_the_Moon_and_Mars_Extra.html)
- Student Opportunities: <http://www.nasa.gov/audience/forstudents/5-8/features/index.html> ,  
[http://www.nasa.gov/audience/forstudents/5-8/features/F\\_Vision\\_for\\_Space\\_Exploration.html](http://www.nasa.gov/audience/forstudents/5-8/features/F_Vision_for_Space_Exploration.html)
- NASA Connect: <http://connect.larc.nasa.gov/>
- NASA Connect – Student Sheet - Functions and Statistics – International Space Station – Up to Us: [http://connect.larc.nasa.gov/connect\\_bak/pdf/00\\_5.pdf](http://connect.larc.nasa.gov/connect_bak/pdf/00_5.pdf)
- NASA Explorer Schools <http://explorerschools.nasa.gov>
- Digital Learning Network: <http://nasadln.nmsu.edu/dln/>
- Central Operations of Resources for Educators (K-4 resources)  
<http://catalog.core.nasa.gov/core.nsf/CoreWtype?SearchView&SearchOrder=4&Query=K-4>
- Science @ NASA <http://science.hq.nasa.gov/index.html>
- Science @ NASA Educators page <http://science.hq.nasa.gov/education/index.html>
- Space Place <http://spaceplace.nasa.gov>
- Sci-Files <http://scifiles.larc.nasa.gov/treehouse.html>
- NASA Quest <http://quest.nasa.gov>
- NASA Explores: <http://www.nasaexplores.com>
- National Education Standards: <http://www.nasaexplores.com/standards/standards.php>
- Earth Moon System: [http://www.nasa.gov/audience/foreducators/k-4/features/A\\_Earth\\_Moon\\_Mars\\_Balloons.html](http://www.nasa.gov/audience/foreducators/k-4/features/A_Earth_Moon_Mars_Balloons.html)