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# Alaska Science & Engineering Fair

# ASEF!

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Take a Quantum Leap, Do Science!



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# Why the Alaska Science & Engineering Fair?



**2005 ASEF 1<sup>st</sup> Place Finalist  
Elise Sorum – Valdez High School**

- An Intel Affiliated Fair
- Further Academic Competition
- For All Alaskan Students
- Inquiry Based Science
- Based on Scientific Method
- Thinking “Out of the Box”
- Holistic Skills Integration
- Supports Alaska State Education Performance Standards

# ASEF is an Intel Affiliated Science Fair



**2005 ASEF 2<sup>nd</sup> Place Finalist  
Nicole Jeffery – Barrow High School**

- Finalists Qualify to Compete at the Intel International Science & Engineering Fair (ISEF)
- ISEF 2006 is in Indianapolis
- The Best Young Science Meet and Share Ideas
- \$3 Million in Awards and Scholarships Awarded
- Judged by World Class Scientists and Engineers

# Opportunity for Further Competitions



**1st Place Finalist 2004 ASEF &  
2005 ASEF Mathematics Category Winner  
Anna Peterlin – Monroe High School (Fairbanks)**

- Stockholm Junior Water Prize
- Stockholm International Youth Science Seminar
- European Union Contest for Young Scientists
- MILSET Expo-Science Europe
- Intel Science Talent Search
- Discovery Channel Young Scientist
- Alaska Science Symposium

# A Fair for All of Alaska!

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## Students Compete from Across the State

- ❑ Ketchikan
- ❑ Sitka
- ❑ Juneau
- ❑ Valdez
- ❑ Anchorage
- ❑ Barrow
- ❑ Kotzebue
- ❑ Cordova
- ❑ Bethel
- ❑ Fairbanks
- ❑ Galena
- ❑ Dillingham

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To Name a Few - A Truly Statewide Program

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# Science Fair is Inquiry Based and Founded in Scientific Method

- Problem – What is the idea you wish to test?
  - Hypothesis – Describe your predictions.
  - Procedure – How do you prove your idea? What are the variables?
  - Materials – What will you need for the project?
  - Observations/Data – What happened?
  - Conclusion – Did you prove your hypothesis? If not, why not?
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# What are the Benefits of Participating in a Science Fair Project?

- Promotes scientific literacy and self-esteem
  - Builds independent research skills
  - Promotes work across the entire academic curriculum: reading, technical writing, mathematics, statistics, graphic art, and public speaking
  - Completing a long-term project
  - Learn to defend and explain experimental results
  - Excellent effort can be rewarded with the chance of competing at the Intel-ISEF
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# Science Fair is Aligned with Alaska Educational Performance Standards

- SA1 - Students develop an understanding of the processes of science used to investigate problems, design and conduct repeatable scientific investigations, and defend scientific arguments

# Alaska Educational Performance Standard

## SA1



**A Busy 2005 ASEF Held at East High School in Anchorage, Alaska**

- Science Fair projects by their very nature are inquiry based
- Competitive projects must have a sound foundation in scientific method
- Students design their own projects and must conduct independent research

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# Science Fair is *Aligned* with Alaska Educational Performance Standards

- SA2 - Students develop an understanding that the processes of science require integrity, logical reasoning, skepticism, openness, communication, and peer review

# Alaska Educational Performance Standard

## SA2



**2005 ASEF Team Category Winners  
Keira Abrams & Lena Hensley - Galena**

- Students must defend their results and be evaluated by highly qualified scientists from research and industry
- Students must effectively display and communicate their results
- The institutional review process reinforces a high standard of ethics and safety

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# Science Fair is Aligned with Alaska Educational Performance Standards

- SA3 – Students develop an understanding that culture, local knowledge, history, and interaction with the environment contribute to the development of scientific knowledge, and that local applications provide opportunity for understanding scientific concepts and global issues

# Alaska Educational Performance Standard

## SA3



2005 ASEF Zoology Category Winner  
Jordan Jeffery - Barrow High School

- Projects center on community concerns:
  - *Do Salmon Genes Wear Out on the Farm?*
  - *To Build a Better Harbor*
  - *Hot Bowheads*
  - *The Medicinal Uses of Spruce and Birch*
- Students deal with local problems and then relate them to a greater global environment

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ASEF Participants are  
Tomorrow's Scientists and  
Engineers

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And Your Future Employees!

Take a Quantum Leap, Do Science!