

INDIANA JUNIOR ACADEMY OF SCIENCE

Report for 2009
Submitted November 13, 2009

Approximately 101 students and teachers representing eight schools attended the annual fall meeting of the Indiana Junior Academy of Science held at Indiana University Bloomington on November 9, 2009.

Dr. Jonathan Karty, IU Chemistry Department gave a keynote address titled "Mass Spectrometry: The Science of Weighing Molecules" at the Opening Ceremony. Six competitions and tours filled out the remainder of the day followed by the awards ceremony. A brief description and a list of winners for each are outlined below.

1. *The Problem Solving Exam*

This exam provides students with a fun and meaningful exercise in scientific knowledge and problem-solving skills. Two students from each school who are selected by their sponsoring teacher take the exam. Plaques are awarded to the top two individual winners. We then combine the scores and the school with the top combined score receives recognition in the form of certificates for their students.

This year's winners were:

Individual Students

1st Place – Grant Manon, East Noble High School

2nd Place – Samuel Leung, Marian High School

3rd Place – Rob Wilson, North Daviess High School

4th Place – Michael Newman, Noblesville High School

5th Place – Kelly Wood, Marian High School

Top Schools – From each school, their two students' scores are combined and the top school is recognized.

1st Place – 115 Points: Marian High School

2nd Place Tie – 111 Points: East Noble High School AND Noblesville High School

3rd Place – 103 Points: North Daviess High School

2. *The Issues Presentation Competition*

This competition encourages students to learn about the political, social, and scientific issues surrounding the selected topic. This year, the topic was "***Lisa Jackson, the Obama Administration's newly appointed EPA director, has listed reform of chemical regulation as one of her top five priorities. Should chemical companies be allowed to play a major role in updating the laws pertaining to chemical regulations?***"

Each competitor gives a five minute presentation on the topic without the use of visual aids. The students are judged by a panel of peers, and the finalists are then judged by a panel of undergraduate students. A plaque is awarded to the top two students, all finalists receive a certificate.

This year's finalists were: Shannon Sacksteder, Eastern High School
Nicholas Heshelman, North Daviess High School
Gretchen Catron, Northwestern High School

This year's Issues winner: Gretchen Catron, Northwestern High School

3. Science Olympiad Competition

This year we held one Science Olympiad competition called "Mystery Architecture." Team members took a bag of miscellaneous materials and were instructed to build the tallest tower that could hold a tennis ball at the top.

Winners were:

- 1st Place –Indiana Academy**
- 2nd Place – Northwestern High School
- 3rd Place – Marian High School
- 4th Place – North Daviess High School

4. The Research Paper Competition

This competition allows students who have carried out an original scientific investigation the opportunity to present their work publicly. Students who wish to compete in this event submit an abstract of their work to the IJAS Director in early October. Twenty-four abstracts were submitted for review and the top twelve finalists were selected by a panel of impartial abstract judges from IU Bloomington and IU Northwest. At the IJAS meeting, the finalists give a 10-minute poster presentation to a panel of judges who evaluate them on originality, research procedures, and presentation skill. The second and third place winners receive a plaque. The first place winner receives a plaque and a \$1,000 scholarship from the Hoosier Association of Science Teachers to attend any Indiana College or University.

This year's winners were:

- 1st Place – 253 points: Brianna Morris, Eastern High School**
- 2nd Place – 230 points: Shannon Sacksteder, Eastern High School
- 3rd Place – 224.5 points: Kathryn Merkling, East Noble High School
- 4th Place – 220.75 points: Tyler Barnes, Northwestern High School
- 5th Place – 220.0 points: Nicholas Heshelman, North Daviess High School
- 6th Place – 219.50 points: Yashas Gowda, West Lafayette High School
- 7th Place – 219.25 points: Paige Kirkland, Eastern High School
- 8th Place – 213.5 points: Micaela Crites, Northwestern High School
- 9th Place – 209.5 points: Emily Lohr, Marian High School
- 10th Place – 205 points: Alex Fruth, Northwestern High School
- 11th Place – 193.5 points: Andrew Koustenis, Noblesville High School
- 12th Place – 177 points: Erika Ocampo, Noblesville High School

5. The Outstanding School Award

The Outstanding School Award is given to the school with the most participation points. To calculate this score, credit is given for every abstract submitted, more credit for those abstracts accepted for the Research and for Outstanding Junior Scientist competitions, and finally for rank scores for the top presentations. Each school received credit for entering students in the Issues Competition, for having a judge at the Issues presentations, and for entering students in the Problem Solving Exam and Science Olympiad Competition. More credit was given to the winners.

The top three schools and the teachers representing them today are:

- 1st Place – 49 points: Eastern High School**
- 2nd Place – 42 points: Northwestern High School

3rd Place – 29 points: Marian High School

6. *The Outstanding Junior Scientist Competition*

This event recognizes those students who are exemplary in overall scholarship as well as scientific ability and achievement. Each school may nominate two students for this competition. The top ten nominees are then selected to compete at the IJAS meeting, where they are interviewed by a panel of judges. The Outstanding Junior Scientist is selected based upon his/her academic record, involvement in original research and extracurricular scientific activities, and the interview. The second and third place winners receive plaques and the Most Outstanding Junior Scientist receives a plaque and a \$1,000 scholarship from the Indiana Academy of Science to attend any Indiana College or University. This year we had eight nominees.

This year's winners were:

1st Place – 193.53 points: Brianna Morris, Eastern High School

2nd Place – 185.64 points: Shannon Sacksteder, Eastern High School

3rd Place – 170.63 points: Stephen Chou, Northwestern High School

4th Place – 158.20 points: Jonathan Nance, Noblesville High School

5th Place – 157.79 points: Tyler Barnes, Northwestern High School

6th Place – 152.79 points: Aaron Bulger, Marian High School

7th Place – 144.49 points: Robert Wilson, North Daviess High School

8th Place – 136.84 points: Claire Sieradzki, Marian High School

7. *Educational Tours*

Educational tours were offered in the morning and afternoon to give all students attending an opportunity to get an up-close and personal look at some of the great research and other opportunities the IU Bloomington campus has to offer. Tours included:

- *IU Cyclotron Facility and Midwest Proton Radiotherapy Institute*
- *Chemistry Research Labs, Mass Spectrometry, & Glass Blowing*
- *Geological Sciences Seismology Station*
- *Speech and Hearing Sciences Research Programs and Laboratories*
- *IU School of Optometry Clinical Research Laboratories*