

INDIANA JUNIOR ACADEMY OF SCIENCE

Report for 2014

Approximately 100 students, teachers, and parents representing eight schools attended the annual fall meeting of the Indiana Junior Academy of Science held at Indiana University Bloomington on November 7, 2014.

Both the Outstanding Junior Scientist and Research Presentation competitions were judged by research faculty, senior scientists, post docs and graduate students. I wish to acknowledge them here, they were:

Abstract judges:

Dr. Jonathan Karty, IU Department of Chemistry
Saleha B Vuyyuri, IU Department of Molecular & Biochemistry
Dr. Jonathan Tullis, IU Department of Psychological & Brain Sciences

OJS Judges:

Dr. Fred Luehring, IU Department of Physics
Jolene Ramsey, IU Microbiology Doctoral Program
Dr. Scott Gens, IU Department of Physics
Dr. Paul State, IU Department of Geological Sciences
Maria Sterrett, IU Department of Biology

Research Presentation Judges:

Dr. Tempanta Fossett, IU Department of Speech & Hearing Sciences
Dr. Ryan Mitchell, IU Department of Physics
Dr. Julia van Kessel, IU Department of Biochemistry
Dr. Megan Thielges, IU Department of Chemistry
Alex Hurlburt, IU Department of Biology

Ms. Radhika Agarwal, IU STARS Scholar gave a keynote address titled **“Swim or Stick? – The Story of How Bacteria Sense Surfaces”** that was very well received by the students and teachers. Five competitions and tours of Chemistry, Kirkwood Observatory, and Jordan Hall Greenhouse 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. Top three students were recognized with certificates and top two students received plaques.

This year's winners were:

1st Place – Laan Yeung, West Lafayette High School

2nd Place – Stephanie Price, New Albany High School

3rd Place – Kun Lin, New Albany 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 **“Are Wind Farms Damaging Health?”** Each competitor gave a five minute presentation on the topic without the use of visual aids. The students were judged by a panel of peers in the morning session and judged

by a panel of undergraduate students from the IU Science, Technology, and Research Scholars Program in the afternoon. Plaques were awarded to the top two students, all finalists received a certificate.

This year's finalists were:

Dinuka Cooray, Marian High School
Stephanie Price, New Albany High School
Jenna Meadows, North Daviess High School
Elizabeth Bolyard, Northwestern High School
Laan Yeung, West Lafayette High School

1st Place – Elizabeth Bolyard, Northwestern High School

2nd Place – Stephanie Price, New Albany High School

3. Science Olympiad Competition

This year we held one Science Olympiad competition called “Code Busters.” Up to three students from each school were allowed to participate. Students tested their knowledge of cryptanalysis to decode encrypted messages. Certificates were given to the top two schools plaques were awarded to the top scoring school.

This year's winners are:

1st Place – Andrew Bostock, Kunal Bhanushali, Stephanie Price, New Albany High school

2nd Place - Laan Yeung, West Lafayette High School

3rd Place – Alex Stuffle, North Daviess High School

4th Place – Shelby Wright, Brenton Strahla, and Matthew Baughman, Beech Grove 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 to a panel of judges. Students who wish to compete in this event submit an abstract of their work to the IJAS Director in early October. Twenty-nine abstracts were submitted for review and the top twelve finalists were selected by a panel of impartial abstract judges from IU Bloomington. The top twelve finalists all received a \$25 cash award from the Indiana Academy of Science. 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 received a plaque. The first place winner received a plaque and a \$1,000 scholarship from the Indiana Academy of Science to attend any Indiana College or University.

This year's winners are:

1st Place – 478.5 points: Iman Mahoui, Eman Schools

2nd Place – 472.5 points: Kamna Gupta, Carmel High School

3rd Place – 471.0 points: Asmaa Mahoui, Eman Schools

4th Place – 450.5 points: Amir Sankari, Eman Schools

5th Place – 445.0 points: Sharlene Lossing, Northwestern High School

6th Place – 441.0 points: Margaret Berta, Marian High School

7th Place – 434.0 points: Sreya Vemuri, Carmel High School

8th Place – 429.0 points: Victoria Combs, Northwestern High School

9th Place – 422.5 points: Nick Lohr, Marian High School

10th Place – 421.0 points: Shannon Hendricks, Marian High School

11th Place – 415.0 points: Carrie Winklepleck, North Daviess High School

12th Place – 398.5 points: Brooke Swartzentruber, North Daviess 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 top five winners.

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

- 1st Place – 40 points: New Albany High School, Mr. Jason Cox**
- 2nd Place – 39 points: Northwestern High School, Mrs. Linda Wilson
- 3rd Place – 38 points: Marian School, Mr. Ken Andrzejewski

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, abstract scores and the interview. The top ten finalists received a \$25 cash award from the Indiana Academy of Science. The second and third place winners received plaques and the Most Outstanding Junior Scientist received a plaque and a \$1,000 scholarship from the Indiana Academy of Science to attend any Indiana College or University.

This year's winners are:

- 1st Place – 246.05 points: Iman Mahoui, Eman Schools**
- 2nd Place – 217.40 points: Kamna Gupta, Carmel High School
- 3rd Place – 214.52 points: Gabriella Lucchese, Marian High School
- 4th Place – 207.60 points: Shannon Hendricks, Marian High School
- 5th Place – 206.50 points: Rachel Johns, Northwestern High School
- 6th Place – 202.15 points: Laan Yeung, West Lafayette High School
- 7th Place – 195.20 points: Nathan Chou, Northwestern High School
- 8th Place – 192.00 points: Kunal Bhanushali, New Albany High School
- 9th Place – 172.96 points: Brooke Swartzentruber, North Daviess High School
- 10th Place – 150.90 points: Andrew Bostock, New Albany High School