

# INDIANA JUNIOR ACADEMY OF SCIENCE

Report for 2001  
Submitted November 6, 2001

Over 160 students and teachers representing 14 schools attended the annual fall meeting of the Indiana Junior Academy of Science held at Indiana University Bloomington on November 2, 2001. In spite of the fact that this was my first year as director of the Junior Academy, the meeting proceeded quite smoothly.

The following six activities comprise the major portion of the Junior Academy meeting:

## 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. Certificates are awarded to the top three individual winners and to the top three schools with the highest combined scores.

This year's winners were:

### Individual Students

1 <sup>st</sup>	Mr. Ryan Cable	Indiana Academy
2 <sup>nd</sup> (tie)	Mr. Jason Brill	Carmel High School
2 <sup>nd</sup> (tie)	Mr. Joel Dart	North Daviess High School

### Top Schools

1 <sup>st</sup> (tie)	Indiana Academy
1 <sup>st</sup> (tie)	Carmel High school
2 <sup>nd</sup>	Northwestern High School
3 <sup>rd</sup>	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 "Federal Funding for Embryonic Stem Cell Research." 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 teachers. A plaque is awarded to the winning student.

This year's winners were:

1 <sup>st</sup>	Mr. Andrew Lynn	North Daviess High School
2 <sup>nd</sup>	Miss Emily Drabek	Eastern High School
3 <sup>rd</sup>	Miss Chrissie Thompson	Northwestern High School
4 <sup>th</sup>	Mr. Colin Ethier	Marian High School
5 <sup>th</sup>	Miss Jessica Wolfe	Graceland Christian School

### 3. **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. The abstracts are reviewed by a panel of impartial judges, and twelve student finalists are selected. At the IJAS meeting, these students give a 10-minute poster presentation to a panel of judges who evaluate them on originality, research procedures, and presentation skill. The first place winner receives a \$1,000 scholarship from the Hoosier Association of Science Teachers to attend any Indiana College or University.

This year's winners were:

3 <sup>rd</sup> place	Mr. David Matley "The Interaction Between Plant Growth Regulators and the Metabolism of <i>Daphnia magna</i> ."	Northwestern High School
2 <sup>nd</sup> place	Miss Chrissie Thompson "Implications of Phosphate Supplementation on a Typical Food Chain."	Northwestern High School
1 <sup>st</sup> place	Miss Sheena Hayes "Influence of Estradiol-17 $\beta$ and Several Estrogen Mimics on Yeast Cell Growth and Recombinant Estrogen Reception Properties."	Eastern High School

### 4. **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 one student for this competition. Seven of the 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 Outstanding Junior Scientist receives a \$1,000 scholarship from the Indiana Academy of Science to attend any Indiana College or University.

This year's winners were:

3 <sup>rd</sup> place	Miss Kathryn Serowka "Miracle Molecules or Potential Killers? Is there a correlation between a water source's <i>Escherichia Coli</i> level and the presence of certain antibiotics?"	Noblesville High School
2 <sup>nd</sup> place	Miss Carrie Bosley "Plasmid and Geonomic Deoxyribonucleic Acid Homology and Antibiotic Resistance in <i>Escherichia coli</i> , <i>Staphylococcus epidermidis</i> , And <i>Pseudomonas</i>	Paoli Jr-Sr High School

*aeruginosa* – The Causative Agents of Urinary Tract Infections.”

1 <sup>st</sup> place	Miss Sheena Hayes	Eastern High School
	“Influence of Estradiol-17 $\beta$ and Several Estrogen Mimics on Yeast Cell Growth and Recombinant Estrogen Reception Properties.”	

### 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. More credit was given to the winners.

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

3 <sup>rd</sup> place	Paoli Jr-Sr High School	Mrs. Angela Blevins
2 <sup>nd</sup> place	Northwestern High School	Mrs. Patricia Zeck
1 <sup>st</sup> place	Eastern High School	Ms. Sharon McElroy

### 6. *Educational Tours*

Educational tours were given twice during the day to give all students attending an opportunity to get an up-close and personal look at some of the great research opportunities the IU Bloomington campus has to offer. Sixty students chose to take the **Cyclotron tour** either in the morning session or the afternoon. Fifty students chose to take the **Chemistry tour** (including: **Molecular Structure Center, the NMR Lab, Dr. Heiftje's Laser Lab, and the Glass Shop**). Forty students took the **Greenhouse tour** and Eleven students enjoyed the **Scanning and Transmission Electron Microscopes tour** in Jordan Hall.