To foster curiosity, discovery, innovation, and problem-solving skills in Ohio

The Ohio Academy of Science is the leading organization in Ohio advancing the understanding and practice of science, engineering, and technology.

Objectives

- Encourage and assure the discovery, understanding, dissemination and practice of education, science, mathematics, engineering, technology and their applications.
- Facilitate continuing professional development and training.
- Promote interdisciplinary interaction and collaboration.
- Provide advice to local, state and federal governments.
- Promote innovation and adoption of new technologies.
- Monitor, report on, and advocate funding opportunities for research and development, and education.
- Widen public understanding and appreciation of science to help create an informed citizenry.
- Publish and otherwise disseminate peer reviewed, original contributions to education, science, engineering, technology, and their applications, and distribute other information.
- Award individual, team, and employer performance.
Dear Members, Volunteers, and Supporters,

As The Ohio Academy of Science enters its 125th year, we are excited to look ahead to 2016; however, first we would like to reflect on everything that was accomplished in 2015. The past year has seen a growth in OAS programming which equates to more opportunities for Ohio students to conduct hands-on science and professionals to present their work. Early in 2015, Invention Convention was integrated into the Academy enhancing our K-8 programming. With the addition of Invention Convention, OAS now has a STEM-pipeline of programing for students from K-12. In addition, Believe in Ohio has entered its second full year as it continues to grow on the success of the 2014-2015 school year. Finally, in 2016, State Science Day will enter its 68th year as one of the largest student-research days in the country.

The Ohio Journal of Science is thriving with more than a 300 percent increase in submissions in 2015. In addition, the Journal improved the review process by transitioning to the Ohio State University’s Open Journal System. Research dissemination in Ohio took center stage at the 2015 Annual Meeting at Capital University through the participation of scientists and students.

Thank you to everyone who made these programs possible in 2015, it would not be possible without our members and participants!

We hope whether you are already in science, or simply support science education in Ohio, that you will join us in 2016 as we continue to strive for our mission of: Fostering curiosity, discover, innovation, and problem-solving skills in Ohio.

Please contact us any time if you would like to be more involved with The Ohio Academy of Science.

Sincerely,

Stephen J. McConoughey, PhD
CEO
<table>
<thead>
<tr>
<th>Program</th>
<th>Grades</th>
<th>Skills Gained</th>
</tr>
</thead>
</table>
| Junior Academy | Grades K–8 | • Identifying Problems  
                             • Testing Solutions  
                             • Presentation Skills |
|               | Grades 5–12| • Data Collection  
                             • Technical Writing |
|               | Grades 9–12| • Mastering the STEM Commercialization or STEM Business Plan Process |
| Senior Academy | college students – retired professionals | • Presenting and Publishing Scientific Research  
                             • Mentoring the Next Generation of Scientists |
The Invention Convention began in 1993 in Sandusky, Ohio and today is a statewide program available to all Ohio school districts and students at no charge. For more than 20 years Invention Convention has been a platform for engaging students in fun ways to enhance critical thinking skills.

To date, more than $650,000 in scholarships has been awarded through regional Invention Convention competitions in Cleveland, Columbus, and Cincinnati. In addition, participants have been rewarded through invaluable increases in self-esteem and creativity.

Student Research Opportunities

The Academy continues to champion student research opportunities for pre-college students across Ohio. In 2015, OAS added two new student programs (Invention Convention and Believe in Ohio) in addition to the programs already available (State Science Day and the OAS Annual Meeting). In total, there were over 12,000 K-12 students in Ohio that participated in an OAS program last year.

Building Excitement for Science

The Invention Convention began in 1993 in Sandusky, Ohio and today is a statewide program available to all Ohio school districts and students at no charge. For more than 20 years Invention Convention has been a platform for engaging students in fun ways to enhance critical thinking skills.

In 2015, over 6,600 students participated in local Invention Convention competitions from over 103 schools across Ohio. From these students, approximately 750 students went on to compete at the Regional Level. These K-8 students invented creative solutions to problems such as safe drinking water and lessening our impact on the environment.
In 2015 the Academy held the 67th State Science Day at The Ohio State University. More than 1,100 students qualified from the District Science Days and competed for close to $1 million in sponsored awards and scholarships. Close to 1,000 professional judges identified more than 200 award winners that were provided by 75 sponsors.
There were 6 title sponsors of State Science Day: Boehringer Ingelheim Roxane Labs, the Ohio EPA, Ethicon, AEP Ohio, and

Thank You... Ohio an opportunity to do hands-on scientific research

Skills – Hypothesis formation, experimental planning, data

winners that were provided by 75 sponsors.

scholarships. Close to 1,000 professional
to $1 million in sponsored awards and

District Science Days and competed for close

More than 1,100 students qualified from the

In 2015 the Academy held the 67th State

at The Ohio State University67th

grades 5-12

[Image 43x26 to 640x822]

Mitigation of Urban Heat Island

Hudson High School  —

Mr. Keenan M Fraylick,

High Impact Sensing

Tri-Village High School  —

Ms. Anne E Fletcher,

Piqua High School  —

Orrville High School  —

OHIO Roadmap to Future Jobs & Prosperity

Prepare For Your Journey

Mr. Joseph G Gaynor

Problem Statement

What is Your

Solution?

Concepts and

Advantage?

Customers and

Your Target

Streams Do

What Revenue

Incur?

Do You Expect to

Make Commercial Sense?

Assessment of

Mileposts 1-8

Start Again at

Solution Makes

Summarize The STEM

Solutions

Underlying Your

Concepts and Principles

(500 words or fewer.

Based on Milepost 3)

Write Your Plan

By Following

(BELIEVE IN

OHIO

SCIENCE)

With more than 2,700 students participating in the

Believe in Ohio in its first year, OAS is committed to
developing the next generation of innovators and
entrepreneurs in Ohio. Believe in Ohio was funded by the
i30th Ohio General Assembly, and through this program
over 1 million dollars were awarded in scholarships and
awards to high school students across Ohio for the best
STEM-commercialization plans and STEM-business
plans. In addition to the plan competition, Believe in
Ohio hosted STEM forums across the state that
highlighted the technology that is being developed and
implemented right here in Ohio.
This year all students from Ohio had the opportunity to compete to attend the Intel ISEF which was held in Pittsburgh, PA from May 10 - 15, 2015. Previously, almost half of the counties in Ohio could not qualify for this fair, but in 2015 these students were able to qualify for the Intel ISEF through the Buckeye Science and Engineering Fair that was sponsored by Ethicon. From this fair, OAS was able to send 4 students to participate in the Intel ISEF and 3 to observe.

In an effort to aid science teachers in Ohio, several members of The Ohio Academy of Science Junior Academy Council held professional development days for teachers. Teachers were involved in discussions about integrating student research into their curriculum as well as the components of successful student research projects. Best practices for coordinating and participating in local science days was also a topic of these sessions.
Ohio EPA Scholarships for College Undergraduates

For the past 15 years, the Ohio EPA has sponsored merit based, nonrenewable, scholarships that are awarded to undergraduate students admitted to Ohio state or private colleges and universities who can demonstrate their knowledge and commitment to careers in environmental sciences or environmental engineering. **Students must be in the final year of the program by the autumn term.** Awardees are selected by an Academy appointed panel using a blind review process. Scholarships may be used for tuition, fees, books, personal protection equipment, tools, instruments and field equipment but not housing.

Scholarship awardees are selected on: 1) Academic record with an overall GPA of at least 3.0; 2) education, employment, and/or internships, honors/awards, professional memberships, publications, presentations given and professional meetings attended, and community service; 3) reasons for choosing a career in environmental science or environmental engineering and how the scholarship will help; 4) original research, scholarship, employment, and/or internships, or other unique contributions to environmental science or engineering; 5) extracurricular activities and participation in organizations that demonstrate leadership, interpersonal skills and social responsibilities; and 6) letters of recommendation from education or environmental professionals.

Thomas Edison Awards for Excellence in STEM Education and Student Research

First established under Gov. Celeste’s Administration in 1985, the Thomas Edison Awards for Excellence in Student Research and STEM Education, recognizes schools and teachers who stimulate student scientific research and technological design and extend STEM education opportunities beyond traditional classroom activities.

Additionally, teachers may request student award certificates for local science days.

For the 2014-2015 school year, 44 schools and 401 teachers have received the Thomas Edison Awards for Excellence in STEM Education and Student Research.

This award is sponsored by The Ohio Third Frontier, within the Ohio Development Services Agency.

What is STEM Education?

STEM Education is both the mastery and integration of science, technology, engineering and mathematics for all PK-12 students. It incorporates scientific inquiry and technological design through student-focused, project-based curricula to develop skills of communication, teamwork/collaboration, creativity/innovation, critical thinking, and problem solving.
The OAS Annual Meeting brings together students and professionals to discuss science through posters and podium presentations in a professional setting. The 2015 Annual Meeting was hosted by Capital University on April 11th, and was attended by over 250 professionals and students. The 2016 Annual Meeting will be held at Ohio University on April 16, 2016.
In addition to our work with pre-college students, the Senior Academy stays committed to providing opportunities for college students and professionals as well. This year over 90 college students presented their research in podium and poster presentations during the OAS Annual Meeting.

Furthermore, The Ohio Journal of Science (OJS) has two new editors (Jeffrey McKee, The Ohio State University and Michele Morrone, Ohio University), who have lowered the average time to print on submission to OJS, and in 2015 there were 9 manuscripts published. This is up over 300% from 2014, and we expect this rise in publications to continue into 2016. In addition, new content has been added to OJS which includes Letter to a Young Scientist, Year in Review, and the State of the Academy. To review OJS content, or to submit a manuscript, visit the OJS website at http://www.library.osu.edu/ojs/index.php/ojs.
Volunteer/Mentoring Opportunities

Students carrying out individual research projects, often would benefit from the expertise of a professional. In an effort to partner students and professionals, the Academy has begun working with the Sigma Xi chapter at The Ohio State University to put “Scientists in the Classroom.” This program began in 2015 and already numerous scientists have been paired with educators across central Ohio. Once in the classroom the scientist can describe their work and answer any questions the students may have regarding their scientific research. This scientist becomes a “class advisor,” and is an invaluable resource to both the teacher and students.

In 2015, there were over a thousand professionals who volunteered a day to judge a local, district, or state science day. By providing valuable feedback to students, these volunteers keep students excited about science and scientific research. We thank all of these supporters.
The Ohio Academy of Science is a membership-based, volunteer-driven, not-for-profit organization. The Academy is the leading organization in Ohio to foster curiosity, discovery, innovation, and problem-solving skills in Ohio. The Academy conducts an annual meeting and science days, and publishes an international, multidisciplinary, scientific journal, The Ohio Journal of Science. Your membership to The Ohio Academy of Science supports science and science education in Ohio.

**Membership**

**INDIVIDUAL MEMBERSHIPS**

Our traditional memberships that are available for individual scientists, teachers, retired scientists, and students. Find out more information at https://oas.memberclicks.net/individual-memberships

Benefits of an Individual Membership:

- Discount ticket to COSI - https://oas.memberclicks.net/member-discounts
- Submitting manuscripts to The Ohio Journal of Science with no page charges
- Access to the Academy's online network
- Reduced price on OAS merchandise

**INSTITUTIONAL MEMBERSHIP**

A new level of membership that allows Universities, Colleges, and Businesses to join as an Institution. All students, faculty, or employees from Institutional Members are able to join the Academy at no cost in addition to the Institution receiving additional benefits. Find out more information at http://oas.memberclicks.net/institutional-membership

Benefits of an Institutional Membership:

- No page charges to publish in The Ohio Journal of Science
- Advertising on our Members' page (scrolling logos for Institutional Members)
- Exhibit table at State Science Day
- Deeply discounted ads in OAS publications (OJS, AM program, SSD program)
- Individuals (students, faculty, or employees) at those Institutions will receive a free membership to The Ohio Academy of Science.

Thank you to our Title Sponsors and Institutional Members!

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**Financial Report**

*As of December 1, 2015*

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<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015*</th>
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<td>Change in Total Net Assets</td>
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<td>$(48,747.39)</td>
<td>$42,459.08</td>
<td>$24,342.59</td>
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Online at The Columbus Foundation: http://tcfapp.org/Show/Ohio_Academy_of_Science
Online at The Ohio Academy of Science Website: http://www.ohiosci.org/donate
By mail to The Ohio Academy of Science, 1500 W. 3rd Ave, Suite 228, Columbus, OH 43212

**WAYS TO GIVE**

**Webtraffic**

**The Ohio Academy of Science**

2014: 38,300 visitors
2015*: 48,516 visitors

**Believe in Ohio**

2015 (Aug 1 - Dec 1): 13,066 visitors

**Member Types**

- Retired: 4%
- Science Teacher: 2%
- Emeritus: 4%
- Life: 9%
- Pre-College Student: 11%
- College Student: 24%
- Professional: 46%

**Membership Totals by Year**

2013: 644
2014: 728
2015*: 1563

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sm| Annual Report 2015
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