**Believe in Ohio Roadmap to Future Jobs and Prosperity**

**Comprehensive Program Guide**

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**Part 1: What is Believe in Ohio?**

Believe in Ohio (BiO) is a free program of The Ohio Academy of Science. It was developed by The Ohio Academy of Science and Entrepreneurial Engagement Ohio with funding from the State of Ohio through Ohio Department of Higher Education. Believe in Ohio is a STEM (Science, Technology, Engineering, and Math) and entrepreneurship program designed to promote critical thinking and the development of an entrepreneurial mindset through experiential and project-based learning.

**Mission:** To impact and influence the economic, educational, and entrepreneurial future of the State of Ohio by providing opportunities for our children to integrate an understanding of STEM (Science, Technology, Engineering, and Math) concepts with the development of an entrepreneurial mindset to become the future innovators of our state.

**Purpose**:

* to create a “Culture of Innovation” in Ohio schools
* to incentivize high school students to continue their education by providing post-secondary scholarships to:
  + Ohio colleges
  + universities
  + career technology centers
* inspire students’ interest in STEM where jobs and careers of the future will be
* to develop problem solving, critical thinking, collaboration and the other 21st Century skills that students will need to be successful in the future

**Part 2: Why Should Students and Teachers Participate?**

**Students:**

Students have the opportunity to develop skills that will help them achieve their graduation goals and success in post-secondary educational pursuits as well as in their careers. Some of these skills include:

* critical thinking
* research
* analysis
* collaboration
* communication
* entrepreneurial
* innovation
* design thinking

This program not only allows them the opportunity to follow their interests and passions to develop an idea for a product or service, but also provides incentives such as cash awards and scholarships that they may earn.

**Teachers/Facilitators:**

Believe in Ohio

* offers free professional development, gifted hours, or reimbursed graduate credit for 7-12 grade teachers
* is aligned to state standards
* supports OTES 2.0
* offers program support grants

Believe in Ohio naturally differentiates among students by:

* allowing them to choose the topic to pursue,
* the depth of exploration (e.g., description, drawings, prototypes, experimental data, etc.),
* and level of competition (e.g., local only, proceed for qualifying or state competition, or pitch video contest only.)

**Part 3: Incentives for Students and Teachers**

**Student Incentives:**

***Middle School:*** Depending on the number of the participating teacher’s/facilitator’s students who participate, BiO will provide from $100 to $500 in $25 gift cards for student awards for either a written Plan or Pitch Video/Presentation of the Plan.

**Local Middle School Student $25 Gift Card Awards Grades 6-8**

**(Based on the total number of completed Plans)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Number of Plans | 5-14 | 15-24 | 25-34 | 35-44 | 45+ |
| Number of gift cards | 4 | 8 | 12 | 16 | 20 |
| Gift Card Total | $100 | $200 | $300 | $400 | $500 |

***High School****:* Depending on the number of student plans completed in each classroom or program, BiO will provide from $300 to $2,500 in funding for local awards. The maximum award that may be paid for any awardee plan is $500. The minimum award that may be awarded to any individual student recipient is $100. Plans must receive at least 24 points to receive any local cash award.

**Local Student Competition Cash Awards (Based on the total number of completed Plans)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Plans | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50+ |
| Award Amount | $300 | $500 | $750 | $1,000 | $1,250 | $1,500 | $1,750 | $2,000 | $2,250 | $2,500 |

***Scholarships:***

***Competition Path 1:*** *Written Plan*

*Qualifying Competition:* Up to one hundred of the highest scoring judged written plans and pitch videos from the Qualifying Competition will each receive a $1,000 scholarship to any Ohio college, university, or post-secondary technical center. These plans will also be entered into the BiO State Competition. All local high school plans may compete in a Qualifying competition.

*State Competition:* Academy judges apply the same rules and judging rubrics used at the local and Qualifying competition levels for written plans and pitch video/presentations. The State competition will offer $5,000 and $10,000 scholarship, for top scoring Plans, to any Ohio college, university, or postsecondary career technical center.

***Competition Path 2:*** *Pitch* *Video/presentation:* Students choosing this path will follow the Roadmap Worksheet and create a 1.5 - 2.0 minute pitch video/presentation of their STEM Plan which will be judged using the Pitch Video rubric.

*Qualifying Competition:* Up to one hundred of the highest scoring judged written plans and pitch videos from the Qualifying Competition will each receive a $1,000 scholarship to any Ohio college, university, or post-secondary technical center. These plans will also be entered into the BiO State Competition. All local high school plans may compete in a Qualifying competition.

*State Competition:* Academy judges apply the same rules and judging rubrics used at the local and Qualifying competition levels for written plans and pitch video/presentations. The State competition will offer $5,000 scholarship, for top scoring Pitches, to any Ohio college, university, or postsecondary career technical center.

***Non-Competition Path:*** *Statewide STEM Innovation and Entrepreneurship Scholarships:* The purpose of this scholarship program is to recognize students throughout Ohio for their contributions to STEM Innovation and Entrepreneurship. To ensure that students from all parts of Ohio receive recognition, Believe in Ohio provides at least one $1,000 scholarship to be awarded in each of Ohio’s ninety-nine State House of Representative districts, and thirty-three Ohio State Senate districts. Students **DO NOT** need to participate in the Believe in Ohio STEM Plan Competition to be eligible for this scholarship. Applications are available for qualifying students to complete by the stated deadline in the Timeline.

**Teacher/Facilitator Incentives**: Teachers can receive Program Support Grants between $300 - $500 for program supplies, misc. costs, and professional development time. The amount of the grant is based on the number of students completing Plans and will be paid in full after the State Competition has been completed.

**Teacher Support (Based on the number of students)**

For program supplies, misc. costs, and professional development time.

|  |  |  |  |
| --- | --- | --- | --- |
| Number of students | 5-20 | 21-50 | 50+ |
| Amount | $300 | $400 | $500 |

**Part 4: STEM Plan Paths (STEM Commercialization or Business) and Process**

BiO students may work as individuals or in teams of up to three (3) members. Each school year students may submit only one plan for competition. If a student is required to do a plan for two different classes, e.g., one commercialization, one business, they must choose one of the two for competition. Generally, students in a STEM class will develop a STEM Commercialization Plan, while students in a business, economics, marketing, or entrepreneurship class will develop a STEM Business Plan.

**A STEM Commercialization Plan** is a written document that describes how a new and/or an existing STEM concept, prototype, process, idea or technology (or a combination of multiple STEM concepts, processes, ideas or technologies) may be applied, or further developed to provide a solution to a marketplace or societal problem, need or opportunity. It will likely be the cross fertilization and application of concepts and research from the many new and evolving STEM disciplines where most new products, services, and other market opportunities (and jobs) will develop.

A STEM Commercialization Plan essentially provides a written “science & technology proof of concept” to support an innovative product or service concept or idea. A STEM Commercialization Plan includes both a persuasive science and technology assessment and plan and a discussion of the concept’s likely commercial feasibility and viability.

**A STEM Business Plan**

is a written document that describes how to apply a new or existing technology to create a new product or service or enhance an existing product or service with new features or capabilities that can be successfully developed into a real-world business opportunity and “taken to market.” Thus, a STEM Business Plan provides a written “business & financial proof of concept” to support an innovative product or service that may be taken to market.

STEM Business Plans will be judged by business people with an understanding of STEM fields, as opposed to STEM academics, researchers and practitioners. As such, judges will be most interested in the quality of the student’s plans for taking their product to market, and secondarily, although importantly, in the student’s assessment of the viability of the science and technology supporting the product or service idea.

**Process**: Students develop a STEM Commercialization or STEM Business Plan using the curriculum resources provided. Following the BiO Roadmap Worksheet based on the Lean Business Model Canvas, they identify a problem or pain point which they solve by creating a product or service based on STEM principles and research. The student develops the idea based on reviewed science and/or their research/design and assesses its commercial potential. Following the 8 Mileposts, the student/team picks, then develops, their idea through one of two pathways: a research paper describing either the scientific or business proof of the Plan or a pitch video/presentation of their STEM-based product/service idea and its commercial feasibility.

***Middle School:***

The middle school program has a lot of flexibility because competition terminates at the local level. This gives teachers and students a wide range of options and allows for greater differentiation among students.

*Written Plan:* Students can complete Mileposts 1-8 and provide a written summary of the mileposts and sources, or students can follow the entire process required for the written Plan at the high school level and complete Milepost 1- 10 as described in the high school section.

*Pitch Video/Presentation*: Students will present their product idea as a pitch in the form of a video or live presentation and submit a written summary of their idea and sources using the Pitch Video/Presentation template.

*Additional Possibilities*: Students could present their results using a PowerPoint or Slides presentation, a trifold board, a demonstration, etc. at the discretion of the teacher.

***High School*:**

*Written Plan*: After completing Mileposts 1-8, students/teams will continue developing and writing their STEM Commercialization Plans through Mileposts 9 - 10 before incorporating it into either the STEM Commercialization or STEM Business Plan Template to complete their written Plan.

*Pitch Video/Presentation*: Students will complete Mileposts 1 - 8 by filling in the Pitch Video Milepost Summary Sheet to develop their product/service idea then record a pitch of their product/service using the Pitch Video/Presentation Guidelines. They shall submit a written summary of their idea and sources using the Pitch Video/Presentation template.

**Part 5: BiO Registration and Plan Development Through ProjectBoard**

Teachers or Independent Students will register to participate in BiO by creating an account in the Believe in Ohio ProjectBoard social learning platform. Teachers will access and sign a Memorandum of Understanding (MOU) estimating the number of Plans and students expected to participate through a link in ProjectBoard.

**ALL** STEM Plans will be designed or uploaded into each student’s/team’s ProjectBoard personal research and design space. Teachers will be granted access to the BiO Plans throughout the process to give assistance and comment as requested. Students may invite other students to view and comment on their Plans in the ProjectBoard platform.

**Mentors:** OAS will arrange for STEM and Business volunteers to mentor students about their Plan ideas at each Milepost within ProjectBoard once students have opened their projects for review. Mentors will be trained in the BiO Roadmap process as well as the ProjectBoard platform prior to reviewing students’ Plans. Mentors will be granted access to the BiO Plans throughout the process to give assistance and comment as requested. Teachers may also provide mentors for their students and provide links to their student’s Plans within ProjectBoard after these mentors have undergone OAS mentor training.

**Part 6: Final STEM Plan Projects**

BiO provides both Google Docs and MS Word templates for STEM Commercialization Plan, STEM Business Plan, and the Pitch Video/Presentations. All written reports and Pitch summaries will be produced using the appropriate BiO template. The formatting instructions are included within the templates as well as instructions for the content points and discussion required in each section. Links for the templates are located in the BiO ProjectBoard Resources list and <https://www.ohiosci.org/bio-teacher/>.

**Written Plan Templates:**

STEM Commercialization Plan Template

STEM Business Plan Template

**Pitch Video/Presentation Template:**

Pitch Template

**Part 7: Competition Levels**

**Local:** Local ***middle school*** competitions will be organized and run by facilitators or teachers who will apply the appropriate BiO grading/judging rubric, a modified BiO grading/judging rubric, or their own rubric. Local judges will be recruited by the participating facilitator/teacher and given links to student Plans within the ProjectBoard platform for judging, or teachers may download the students’ Plans and share with their judges. Local competitions can include a presentation in addition to assessing any written documents if required by the facilitator/teacher. Middle school competitions terminate at the local level.

Local ***high school*** competitions will be run as described above, but must apply the BiO standards, rules, and grading/judging rubrics.

**Qualifying:** Up to one hundred of the highest scoring judged written plans and pitch video/presentation from the Qualifying Competition will each receive a $1,000 scholarship to any Ohio college, university, or post-secondary technical center. These plans will also be entered into the BiO State Competition.

All local high school plans may compete in a Qualifying competition even if they have not competed in a local competition. For local competitions held before the February 28th deadline, plans can be advanced by their teacher/facilitator to the Qualifying competition. Local competitions may be held after the February 28th deadline. Plan completed after the deadline may be submitted for consideration in the succeeding school year to the Qualifying Competition or they may complete their assignments early and submit their Plans by the submission deadline.

**State:** For the State competition, Academy judges apply the same rules and judging rubrics used at the local and Qualifying competition levels for written plans and pitch video/presentations.

***Written Plans:*** Students with top scoring plans compete for $5,000 and $10,000 scholarships to any Ohio college, university, or postsecondary career technical center.

***Pitch Video/Presentation:*** Students with top scoring pitches compete for $5,000 scholarships to any Ohio college, university, or postsecondary career technical center.

**Part 8: Timeline**

* **September 2022**: ProjectBoard will open for teachers to begin sharing student access codes and for students to begin their projects.
* **November 2022:** Mentors who have completed training sessions will be allowed to begin giving feedback on projects.
* **November 2022:** Judges who have been trained may begin judging completed local competitions.
* **January 17, 2023:** Believe in Ohio Statewide STEM Scholarship applications will go out to High School Counselors and students.
* **February 28, 2023:**

Memorandum of Understanding submission deadline

Student registration for the Believe in Ohio Qualifying Competition closes via ProjectBoard

* **March 1, 2023:** Believe in Ohio Statewide Scholarship applications will be due to the Ohio Academy of Science.
* **March 7-16, 2023:** Judging of State Qualifying Projects
* **March 24, 2023:** Students will be notified for selection of State Competition judging.
* **March 24-31, 2023**: Students permitted to make changes to final written plans and videos
* **April 3-April 12, 2023:** State competition judging via ProjectBoard; RSVP due
* **Saturday, April 29, 2023**: Believe in Ohio State Celebration and Pitch Competition to be held at Kent State University
* **June 1, 2023:** Local competitions completed, and all final paperwork submitted.

**Part 9: Judging Guidelines and Rubrics**

**Local Competition**

***Middle School:***

The teacher may evaluate their students using the official STEM Commercialization Plan rubric, the STEM Business Plan rubric, the Pitch Video rubric, or a modified rubric of their own. While the teacher has the option to ask outside judges to assess the Plans, awardees of the gift cards for Written Plans or Pitch Videos will be based on the assessment and judgment of the teacher. **There is only a local competition at the middle school level.**

***High School:***

***Written Plan:***

* The facilitator/teacher should first grade each student plan using the applicable (STEM Commercialization or STEM Business) BiO grading rubric and assign each plan a score of 0-40.
* Teachers will provide their own judges for local fairs. All plans should be judged locally by at least two judges (ideally three judges) who apply BiO’s judging rubric.
* OAS can provide the judges with the links to all the students’ Plans so they may read and score the Plans within the ProjectBoard platform, or teachers can download the Plans from ProjectBoard and distribute them to their judges.
* Judges must use the appropriate BiO judging rubric (STEM Commercialization Plan or STEM Business Plan.)
* The teacher must grade each plan but should not also be a competition judge.
* Judges may include other teachers or members of the local STEM professional and business community.
* Judges judging a STEM Commercialization Plan ideally should have a science, technology, engineering, or mathematics background.
* Judges judging a STEM Business Plan should ideally have a business background and at least a fundamental knowledge of STEM.
* It is also recommended that each judge be given no more than 6-8 plans to judge. Given that judges are volunteers we do not want to overload them, or they may not volunteer again.
* After all the Plans have been judged and scored, write the average of the judges’ scores on each Plan as its final score.
* Facilitators/teachers shall flag those Plans advancing to the Qualifying Competition by Flagging each Plan within the ProjectBoard platform.

***Pitch Video/Presentation:***

* The facilitator/teacher should first grade each student Pitch Video/Presentation and Written Pitch Summary using the BiO Pitch Video/Presentation grading rubric and assign each plan a score.
* Teachers will provide their own judges for local fairs. All plans should be judged locally by at least two judges (ideally three judges) who apply BiO’s judging rubric.
* OAS can provide the judges with the links to all the students’ Plans so they may read and score the Pitch Videos and Written Pitch Summary within the ProjectBoard platform, or teachers can download the Pitch Videos and/or Written Pitch Summaries from ProjectBoard and distribute them to their judges for either a live or virtual competition. Judges may include other teachers or members of the local STEM professional and business community.
* Judges may include other teachers or members of the local STEM professional and business community.
* After all the Pitch Video/Presentations and Written Pitch Summaries have been judged and scored, write the average of the judges’ scores on each Written Pitch Summary as its final score.
* Facilitators/teachers shall flag those Pitches advancing to the Qualifying Competition by Flagging each Pitch Project within the ProjectBoard platform.

**Qualifying/State Competition:**

**If a local competition has been held:** Teachers/facilitators must mark the Written Plans and/or Pitch Video/Presentations within the ProjectBoard platform by the Qualifying Competition submission deadline (see Timeline) to indicate the Plans are being advanced from the local competition.

**If a local competition has not been held:** Any students who have chosen to have their Written Plans and/or Pitch Video/Presentations judged for the Qualifying Competition who have not participated in a local competition must mark their plans within the ProjectBoard platform by the Qualifying Competition submission deadline (see Timeline) to indicate the Plan should be judged.

Plans marked by the submission deadline in ProjectBoard will automatically be judged for Qualifying Competition and those selected will move to the State Competition. Plans will be judged through the ProjectBoard platform. Sample judging rubrics can be found at <https://www.ohiosci.org/bio-teacher/>.

STEM Commercialization Plan Rubric

STEM Business Plan Rubric

Pitch Video/Presentation Rubric

**Part 10: Teachers/Facilitators – Final Report**

**Middle School:**

After judging is complete, the Teacher/Facilitator will be contacted by their STEM Advocate with a link to a Final Report *JotForm*. Fill out the Final Report *JotForm* with the requested information including the name, grade, plan title, and gift card amount for each of the awardees along with a PDF containing the final reports (written, link to video presentation, slide show, or pictures of trifold/demonstration) of **ALL completed projects**. This pdf is the proof of the number of completed Plans. The OAS will send the gift cards and certificates to theteacher/facilitatorto distribute to the students once the number of completed Plans is verified.

**High School:**

***Written Plan***

1. When the local competition is finished and Plans have been scored by judges, the teacher/facilitator will contact their STEM Advocate.
2. The Advocate will confirm with the teacher/facilitator the total amount of classroom cash awards for which they qualify based on the number of completed Plans and will supply a link to a Final Report *JotForm*.
3. The teacher/facilitator will decide the number, category, and amount of each award based on the Plan scores and the teacher’s judgment keeping in mind that no **one** student can receive less than $100 or more than $500.
4. Fill out the Final Report *JotForm* with the requested information including the name, home address, email, grade, plan title, award place and award amount. **Cover sheets of ALL completed Plans will need to be scanned into a pdf**. This pdf is the proof of the number of completed Plans. Checks will be sent directly to the students at their homes.
5. The OAS will email the teacher/facilitator a printable electronic file containing award certificates for each student awardee and the amount of their cash award for teacher/facilitator to print and distribute.

***Pitch Video:***

1. When the local competition is finished and Video Pitches have been scored by judges, teacher/facilitator will contact their STEM Advocate.
2. The Advocate will confirm with the teacher/facilitator the total amount of classroom cash awards for which they qualify based on the number of completed Pitches and will supply a link to a Final Report *Jotform*.
3. The teacher/facilitator will decide the number, category, and amount of each award based on the Plan scores and the teacher’s judgment keeping in mind that no **one** student can receive less than $100 or more than $500.
4. Fill out the Final Report *Jotform* with the requested information including the name, home address, email, grade, plan title, award place and award amount. The teacher/facilitator will also scan the Pitch Video Milepost Summary Sheets for each completed Pitch Video into a pdf and upload it into the *Jotform*. This pdf is the proof of the number of completed Pitch Videos. Checks will be sent directly to the students at their homes.
5. The OAS will email teacher/facilitator a printable electronic file containing award certificates for each student awardee and the amount of their cash award for teachers to print and distribute.

**Part 11: Additional Rules and Guidelines**

**Source Citations and Plagiarism:** Students must properly document and show attribution for ideas of others primarily by citing the sources of ideas or background statements within the text and listing the sources cited at the end of the report. Every source cited within the text must be included in the References Cited section in the Written Plans. All Plans will be checked for plagiarism via Turnitin.com.

Here is an excerpt from an actual student plan showing in-text and 1:1 concordance with full references.

*With the introduction of soft robotics, however, researchers can more closely mimic the qualities of the naturally occurring soft and adaptive biological systems and structures found in any number of organisms, including humans (Majidi, 2014). Soft robotics now enables researchers to create continuously distributed actuation in a manipulator, such as the continuous curvature found in nature as elephant trunks or octopus tentacles (Lipson, 2014).*

Lipson, H. (2014). Challenges and opportunities for design, simulation, and fabrication of soft robots. Soft Robotics, 1(1), 21-27. doi:10.1089/soro.2013.0007

Majidi, C. (2014). Soft robotics: A perspective--Current trends and prospects for the future. Soft Robotics, 1(1), 5-12. doi:10.1089/soro.2013.0001

**ISEF Forms for Experimentation:** If students/teams conduct experiments as part of their product development process they are required to follow appropriate research approval following the ISEF process. These forms are required before experimentation begins at the local level and will need to be provided for inclusion within their project in the ProjectBoard platform if the Plan is flagged to be considered for Qualifying and State Competitions.

Research plans and certain special protocols must be approved in advance if any experimentation, student research or engineering design projects involve one or more of the following: 1) Human subjects, 2) Non- human vertebrate animals including observation projects, 3) Potentially hazardous biological agents, including microorganisms, recombinant DNA technologies, or human or animal flesh tissues, blood or body fluids, 4) Controlled substances and alcohol and tobacco, and 5) Hazardous substances or devices including certain chemicals, equipment, firearms, radioactive substances and radiation.

**Patent, Intellectual Property and Publication:** When students submit a STEM Commercialization or STEM Business Plan for review, grading, or judging, they are making a public disclosure of their ideas, concepts, research, etc. and, therefore, they retain no proprietary interest in those ideas, concepts, research or results, etc. unless they have made an appropriate patent or intellectual property filing to protect their interests prior to submitting their plan for review. Students/parents interested in protecting their intellectual property rights should consult an attorney for advice.

Believe in Ohio participants should understand that all teachers, mentors, judges, and any other people in any way connected with the Believe in Ohio program, The Ohio Academy of Science, Entrepreneurial Engagement Ohio, the Ohio Department of Higher Education, or any other person involved with the Believe in Ohio program in any capacity are under no duty whatsoever to maintain the confidentiality of any concepts, ideas, or research included in any plan submitted for review and judging. Additionally, the student acknowledges that any plan that they submit may be published or publicized, in whole or in part, along with their name by the Believe in Ohio Program, The Ohio Academy of Science and related organizations, particularly if their plan is chosen as an awardee in the Believe in Ohio plan competitions.

**Basic rules for filing a provisional patent application from the US Patent & Trademark Office (USPTO):**

Inventors seeking protection for their ideas should consider filing a provisional patent application. The requirements for filing a provisional patent application are set forth in 35 U.S.C. 111(b) and 37 CFR 1.53(c). A non-provisional application must be filed within twelve months of the filing date of a provisional application in order for the inventor to claim the benefit of the provisional application under 35 U.S.C. 119(e)(3).

For more information on how to file a provisional patent application, please check the USPTO web site at <http://www.uspto.gov/patents/resources/types/provapp.jsp>

For information about the overall patent filing process, check out the USPTO website at: process: <http://www.uspto.gov/patents-getting-started/patent-process-overview>

**Believe in Ohio informational videos:**

**Patents & Intellectual Property 101 – Video Part 1 – "IP² = profits"**

In this first of three videos, Intellectual Property Attorney, Ms. Cindy Murphy discusses how many of Ohio's largest companies built their businesses by applying their patents in a video lecture titled "IP² = profits" (14 minutes) Click here to view the video:

https://www.youtube.com/watch?time\_continue=3&v=kf2xOhMSjLg&feature=emb\_logo

**Patents & Intellectual Property 101 –Video Part 2 – "The invention of the ice cream cone**”

In the second of three videos, Intellectual Property Attorney, Ms. Cindy Murphy uses the example of the invention of the ice cream cone to indicate what may or may not be patentable. (30 minutes) Click here to view the video:

https://www.youtube.com/watch?time\_continue=7&v=idd8vhMbbms&feature=emb\_logo

**Patents & Intellectual Property 101 – Video Part 3 – “The America Invents Act and its implications”**

In 2011 the US Congress passed legislation that fundamentally changed the country’s patent laws. Ms. Murphy explains how the new law works and the many benefits it provides to small inventors and entrepreneurs. (10 minutes) Click here to view the video:

https://www.youtube.com/watch?time\_continue=1&v=PfcfPZw94vA&feature=emb\_logo

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| **Ms. Cindy Murphy, Patent Attorney – Bio**  Ms. Murphy focuses on the preparation and prosecution of patents and trademarks before the U.S. Patent and Trademark Office. Her practice includes consulting with clients on international patent portfolio management and drafting and arguing patent appeals before the U.S. Board of Patent Appeals and Interferences.  Cindy's motto is a well-planned set of patent drawings is easily worth a trillion words of specification.  Education J.D., Cleveland State University, Cleveland-Marshall College of Law, 1988 B.S.M.E. Georgia Institute Technology, George W. Woodruff School of Mechanical Engineering, 1982.  Licenses & Certifications Attorney at Law Registered Patent Attorney Licensed Professional Mechanical Engineer, 1988 LEED Accredited Professional. Bar Admissions Ohio, 1988 U.S. Patent and Trademark Office, 1988 |

**Carryover Projects:** Although ideas may be spin-offs of previous work, Believe in Ohio competitions **Do Not Permit** carryover projects. New ideas must be generated in subsequent years. Students must briefly discuss the previous idea if the new idea is related to a previous project.