



Technology notes:

Today, we're set up as a virtual meeting, with camera and sound from all participants.

By default, you'll be joining live.

Say hello, then please mute your microphone. Thanks!

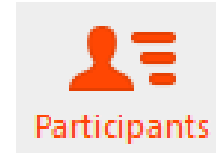
AEOP JSHS Webinar

Tuesday, June 19th

We will begin at 1:05 p.m.

Webex directions

- Please click the Participants button to see the video stream.



- The video stream will begin five minutes before the scheduled start of the webcast.

- Once the video stream begins, mouse-over the video image and click the double-arrow button to change to full-screen view.



- Use the WebEx Chat feature to submit your questions during the event



Welcome

Mission and Purpose: Battelle

Our mission: To translate scientific discovery and technology advances into societal benefits

- Nonprofit, charitable trust formed in 1925
- Profits reinvested in science & technology and in charitable causes, making the world better for generations to come
- Knowledge, talents and resources applied to help our customers achieve their most important goals



Mission and Purpose: AEOP

- The AEOP portfolio of STEM initiatives from K through Undergraduate
- Address the Nation's need of a diverse, agile and highly competent science, technology, engineering, and math (STEM) literate talent pool.
- The AEOP collaborates to advance Army and DoD sponsored STEM education and outreach programs across the world.

AEOP Goals

- STEM Literate Citizenry
- STEM Savvy Educators
- Sustainable Infrastructure

AEOP Program Portfolio

- Portfolio of Army-sponsored STEM programs that:
 - effectively engage, inspire, and attract the next generation of STEM talent from K through Undergraduate
 - expose them to Department of Defense (DoD) STEM careers.
- Comprised of STEM programs in the form of summer enrichment activities, competitions, and research apprenticeships for students and teachers.
- JSHS is one of three competitions under AEOP
 - Recognized as a high caliber scientific symposia
 - Facilitates students' ability to communicate their research and defend it

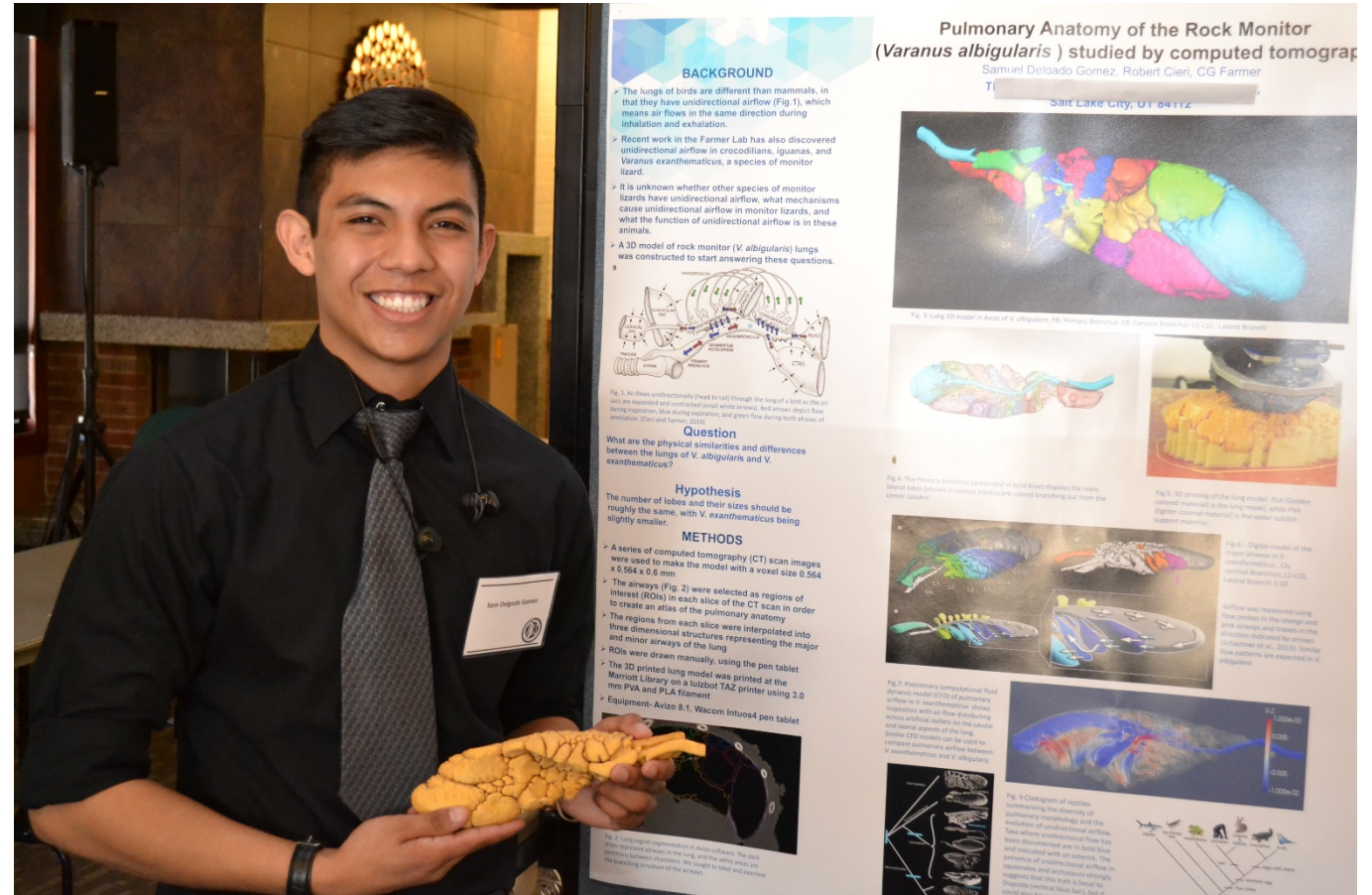
Gains in the Education of Mathematics and Science (GEMS) and Camp Invention (CI)	Unite
Junior Solar Sprint (JSS)	Apprenticeships
eCybermission (eCM)	RESET
Junior Science and Humanities Symposium (JSHS)	

Current AEOP Consortium

- Battelle is the lead organization for the Consortium that was formed by the AEOP cooperative agreement. Consortium members include:
 - Academy of Applied Science (AAS)
 - National Science Teachers Association (NSTA)
 - Technology Student Association (TSA)
 - Tennessee Technological University (TTU)
 - Widmeyer Communications
 - Purdue University
 - MetriKs Amerique.

JSHS – Junior Science and Humanities Symposium

- Seeking an experienced partner and provider in the world of high caliber scientific symposia to execute the Tri-Service (Army, Navy, and Air Force), high school STEM research competition.



Pulmonary Anatomy of the Rock Monitor (*Varanus albigularis*) studied by computed tomography
Samuel Delgado Gomez, Robert Cien, CG Farmer
Triton High School, Salt Lake City, UT 84112

BACKGROUND

- The lungs of birds are different than mammals, in that they have unidirectional airflow (Fig. 1), which means air flows in the same direction during inhalation and exhalation.
- Recent work in the Farmer Lab has also discovered unidirectional airflow in crocodilians, iguanas, and *Varanus exanthematicus*, a species of monitor lizard.
- It is unknown whether other species of monitor lizards have unidirectional airflow, what mechanisms cause unidirectional airflow in monitor lizards, and what the function of unidirectional airflow is in these animals.
- A 3D model of rock monitor (*V. albigularis*) lungs was constructed to start answering these questions.

Question
What are the physical similarities and differences between the lungs of *V. albigularis* and *V. exanthematicus*?

Hypothesis
The number of lobes and their sizes should be roughly the same, with *V. exanthematicus* being slightly smaller.

METHODS

- A series of computed tomography (CT) scan images were used to make the model with a voxel size 0.564 x 0.564 x 0.6 mm.
- The airways (Fig. 2) were selected as regions of interest (ROIs) in each slice of the CT scan in order to create an atlas of the pulmonary anatomy.
- The regions from each slice were interpolated into a three dimensional structure representing the major and minor airways of the lung.
- ROIs were drawn manually, using the pen tablet Marriott Library on a laptop TAZ printer using 3.0 mm PLA and PLA filament.
- Equipment-Avizo 9.1, Wacom Intuos4 pen tablet

RESULTS

- Fig. 3. Lung digital reconstruction in Avizo software. The color shows the major airways in the lung, and the white area are the branching structure of the airways.
- Fig. 4. The primary bronchus (colored in solid blue) displays the main lateral lobes (shown in various transparent colors) branching out from the center lobe.
- Fig. 5. 3D printing of the lung model. PLA (Gibbs) (lighter colored material) is the lung model, while PLA (darker colored material) is the water soluble support material.
- Fig. 6. Digital model of the major airways in *V. exanthematicus*. CTs (Central Bronchus, LCL, Lateral Branch 1-3D).
- Fig. 7. Preliminary computational fluid dynamic model (CFD) of pulmonary airflow in *V. exanthematicus* shows airflow and airway curves on the caudal and lateral aspects of the lung. Similar CFD models can be used to compare pulmonary airflow between *V. exanthematicus* and *V. albigularis*.
- Fig. 8. Color map of velocity (Uz) of pulmonary airflow in the major airways and travels in the airway (indicated by the arrows). (Tucker et al., 2013). Similar flow patterns are expected in *V. albigularis*.
- Fig. 9. Classification of reptiles summarizing the diversity of pulmonary morphology and the evolution of unidirectional airflow. The arrow indicates unidirectional flow has been discovered in a blue box and indicated with an asterisk. The unidirectional and unidirectional airflow in regions that this level is based to chordates (vertebrate base level), but it could also have been lost, but it

Purpose of JSHS RFP

- Award a single recipient to manage the JSHS program
- Meet the requirements of the JSHS program and collaborate with the Consortium of partners
- Work on behalf of the U.S. Department of Defense and the U.S. Department of the Army.

Underserved (U2) Students

- All initiatives are intended to increase participation in programs within the AEOP portfolio by underserved (U2) students and/or military dependents.
- The U2 populations are defined as any **two** of the following:
 - low-income students (FARMS)
 - students with English as a second language (ELLs)
 - students belonging to race and ethnic minorities that are historically underrepresented in STEM (HUR) (i.e., Alaska Natives, Native Americans, Blacks or African Americans, Hispanics, Native Hawaiians and other Pacific Islanders)
 - first-generation college students (1stGEN)
 - students in rural, frontier, or other Federal targeted outreach schools (GEO)
 - students with disabilities (ADA)
 - females in certain STEM fields (Gender) (e.g., physical science, computer science, mathematics, or engineering)

JUNIOR SCIENCE AND HUMANITIES SYMPOSIUM

JSHS Background

- Established by the U.S. Army in 1958
- Students must be U.S. Citizens or U.S. Permanent Legal Residents.
- 1962: First National JSHS was held
- 1995/1996: U.S. Navy and U.S. Air Force joined with the U.S. Army to expand the program
- Collaboration between:
 - research arm of the Department of Defense (DoD) and
 - colleges and universities across the U.S.

JSHS Today

- JSHS aims to meet the following objectives:
 - Promote research and experimentation;
 - Recognize the significance of research including humane and ethical principles
 - Search out talented youth and teachers, recognize them, and encourage continued interest;
 - Recognize innovative and independent research projects of youth
 - Expose students to academic and career opportunities;
 - Expose students to STEM careers in the Army and/or DoD laboratories;
 - Increase the future pool of talent capable of contributing to the national's scientific and technological workforce.

STEM Categories

- JSHS annually recognizes eight STEM categories:
 - Biomedical Sciences
 - Chemistry (including geochemistry, energy-alternative fuels, material science)
 - Engineering and Technology
 - Environmental Science
 - Life Sciences
 - Medicine & Health / Behavioral Sciences
 - Mathematics & Computer Science, Computer Engineering
 - Physical Sciences, including Physics, Astronomy

JSHS Regional Symposiums

- Currently, **forty-seven** regional symposia are conducted each year
- Administered by a university or another approved educational institution.
 - From **January through April** of each program cycle.
 - Teachers, university researchers, and military personnel attend as mentors, judges, and guest speakers.
- **Five students from each region** are selected as finalists to compete at the National Competition

JSHS National Symposium

- Typically held during last week of April or first week of May for 4-5 days
- The Services (Army, Navy or Air Force) as a committee select locations/venues for the national competition.
- Five students and one Director/designated representative from each region are selected to attend National JSHS.
- Approximately 300 attendees
- National symposia include two formal scholarship competitions:
 - Oral presentations
 - Research poster
- The recipient will coordinate with Service representatives to successfully plan and execute the national symposia

RFP

JSHS Application

- The Program requirements, tasks and deliverables are listed in the RFP

BATTELLE

June 12, 2018

Request for Proposal (RFP) No.: Under Prime Contract No. W911SR-15-2-0001
Title: AEOP Program Announcement: Junior Science and Humanities Symposium (JSHS)

1. Battelle Memorial Institute (Battelle) hereby requests written proposal submissions based on the Statement of Work located at Attachment No. 1.

2. **Type of Agreement.** A Subcontract agreement on a Cost Reimbursement basis is anticipated.

2a. If Offeror intends to propose Lower-Tier Subcontractors which shall receive a compensation form under any type of flexibly priced Subcontract term such as Cost-Reimbursement (Including such types as Cost Plus Fixed Fee, Cost Plus Incentive Fee, Cost Plus Award, Time and Materials, or Fixed Price Redetermination), Subcontractor shall provide the following as a part of their proposal:

Name of Subcontractor	Type of Subcontract
1) _____	_____
2) _____	_____
3) _____	_____

3. **Period of Performance.**

The anticipated award of the subcontract is September 10, 2018 with an anticipated period of performance beginning October 1, 2018 with the potential to extend through September 30, 2023. The award is anticipated to be an award of one Base year, plus 4 Option years.

4. **Award.** Any effort expended and any costs or expenses incurred by the Offeror as a result of this RFP shall be the sole responsibility of the Offeror. There is no obligation for Battelle to cover any Offeror costs incurred as a result of this RFP.

Evaluation Criteria and Award and Basis of Award: The subcontract resulting from this RFP will be awarded to the responsible offeror(s) whose offer conforms to this solicitation and is most advantageous to Battelle and its client, cost or other factors considered.

The following evaluation factors and sub-factors and respective weightings shall be used to determine the "best value" to Battelle and its client.

- a) Technical Evaluation (70%)
 - i. Technical Approach
 - ii. Management Approach
 - iii. Credentials
 - iv. Past Performance

1

Accounting Details

- Type of Agreement
 - Subcontract agreement on a Cost Reimbursement basis is anticipated.
- Period of Performance
 - The anticipated award of the subcontract is September 10, 2018
 - Period of performance beginning October 1, 2018 with the potential to extend through September 30, 2023.
 - The award is anticipated to be an award of one Base year, plus 4 Option years.

Evaluation Criteria

- Evaluation Criteria and Award and Basis of Award:
 - a) Technical Evaluation (70%)
 - i. Technical Approach
 - ii. Management Approach
 - iii. Credentials
 - iv. Past Performance
 - b) Cost Evaluation (30%)
 - a. Please reference Attachment 1 Section IX

Submission Requirements

- All documents must be:
 - Single spaced
 - Times New Roman
 - 12 pt. font
 - 1 inch margins.

Cover Letter

- **Attach a one page cover letter in PDF.**
- Please include signature(s) of the Principal Partners(s) of the Lead Applicant and the signature of the Institutional Representative of the Fiscal Agent(s) who has the authority to accept and expend grant monies. The cover letter should describe the commitment being made by the partner(s) and should not exceed 1 page.

Technical Component

- The pages included in the Technical Component are to be numbered
- **Must not exceed 7 pages**, utilizing one side of the page
- The application must include a discussion of the strategy and the implementation plan to be employed to advance the Army's STEM mission in support of AEOP priorities and core objectives.

Technical Component

- Address the requirements in each of the AEOP fundamental elements on this RFA and how efforts pertaining to JSHS will lend to achieving AEOP's core objectives.
- Propose detailed activities to address 5-year projected benchmarks and reference which AEOP priority (may be more than one) and core objectives are being addressed; provide evidence that the proposed activities are likely to result in advancing Army's STEM programs and in meeting/exceeding projected benchmarks.
- Highlight the Consortium's network and propose innovative activities to leverage the Consortium's reach in promoting AEOP opportunities to students especially those from U2 populations.

Collaboration Plan

- **Not to exceed 2 single-sided pages**
- Describe how the applicant will collaborate with the Consortium within each fundamental element of this PA and across all of the AEOP.
- Describe the strategy for collaborating with Cooperative Agreement Managers (CAMs), Service representatives, and Lead Organization (LO) to ensure the program is efficiently executed.
- Demonstrate flexibility in adjusting proposed activities to address any changes to the Army, DoD and/or Federal STEM Strategic Plans.

Cost Component

- The pages included in the Cost Component will be numbered and the chapter does not have a page limitation.
- Cost Proposal must include a budget for the entire period of performance (one year).
- The applicant must provide an annual budget breakdown by each fundamental element on this PA.
- The cost portion of the application will contain cost estimates sufficiently detailed for meaningful evaluation.
- Budget justification should also be attached in this chapter.
- For budget purposes, assume a performance start date of 1 October 2018.

Biographical Sketches

- Biographical sketches are to be limited to two (2) pages per individual, and only to key personnel.
- The application must include the names, biographies, and availability of key personnel who will be involved in overseeing the management of the program.
- The application should demonstrate how the aggregate skills/expertise provides required breadth and depth to effectively meet program requirements and advance Army's STEM education goals in AEOP.

Past Performance

- Not to exceed **2 single-sided pages**.
- This element will focus on previous or current efforts performed by the applicant that demonstrates the ability to successfully perform requirements similar to those outlined in the PA.
- The applicant must have demonstrated experience providing STEM outreach to U2 populations.
- The applicant shall include contact information (agency/company name, point of contact, telephone and facsimile numbers, e-mail address, etc.) as well as the project/contract/grant/agreement name and number of three (3) references that can verify and validate its ability to successfully perform the requirements in the PA.

Past Performance (continued)

- The applicant shall provide a brief description of its ongoing and previous Government Agreements/contracts during the past three (3) years, which are relevant to the effort required in this PA. Identify in specific detail for each contract/grant/agreement listed why or how the effort is relevant or similar to the effort required in this PA. Applicants shall discuss in detail corporate experience solving challenging problems similar to those that may arise with this program.
- Additionally, the past performance shall clearly demonstrate that it has successfully performed in the area(s) where they will have administrative management control. Applicants are encouraged to include information on performance problems encountered on identified contracts/grants/agreements and the corrective actions taken.

COMPLETING RFP ONLINE

Online submission

- Must be submitted online at: www.usaeop.com/JSHSRFP
- Be prepared to submit/upload all documents as you will not be able to save your work and return at a later time.
- Documents must be uploaded as PDF.
- Single-sided, Times New Roman, 12 pt font, 1 inch margins (unless otherwise indicated).
- Adhere to page limit.
- Failure to adhere to requirements could disqualify your proposal.

Basics

- Organization
- Organization street address
- Organization city
- Organization state
- Zip code
- Organization phone number
- Contact first name
- Contact last name
- Contact email address
- Contact phone number

Uploads

- Cover Letter
- Technical component
- Collaboration plan
- Budget
- Budget justification
- Biographical sketches
- Past performance
- Bibliography and references

Questions



Next Steps

- Proposals Due August 3, 2018 – 5:00 pm (EST)
- Notification of Award September 10, 2018

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It can be done