



SLIC QUICK REFERENCE GUIDE

AND

STUDENT HANDOUTS

Version 2.0
October 26, 2016

OVERVIEW

The SLIC Quick Reference Guide and Student Handouts offers a simple, easy-to-use collection of important information that students and teachers will frequently reference during the Challenge. This guide is divided into 6 sections:

- *Section 1: Intellectual Property & Parental Consent*
- *Section 2: Challenge Detail Pages, including Judging Criteria*
- *Section 3: Application Questions & Suggested Deadlines*
- *Section 4: Rubrics, Templates & Checklists*
- *Section 5: SLIC Platform Highlights*
- *Section 6: Challenge Process, Events & Dates*

Downloadable PDF versions of the *SLIC Program Training Manual* and the *SLIC Quick Reference Guide and Student Handouts* can be accessed from the SLIC Platform and VDOE's website within the SLIC information section, along with a video recording of a SLIC Training Session.



Students: Prior to beginning the Challenge, please go to the *Student Pre-Questionnaire* at <https://www.surveymonkey.com/r/W7NG9WH>.



INTELLECTUAL PROPERTY & PARENTAL CONSENT

INTELLECTUAL PROPERTY

The 3 most common forms of Intellectual Property are copyrights, patents, and trademarks. The World Intellectual Property Office describes them as:

- **Copyright** is a legal term used to describe the rights that creators have over their literary and artistic works. Works covered by copyright range from books, music, paintings, sculpture and films, to computer programs, databases, advertisements, maps and technical drawings.
- A **patent** is an exclusive right granted for an invention. Generally speaking, a patent provides the patent owner with the right to decide how - or whether - the invention can be used by others. In exchange for this right, the patent owner makes technical information about the invention publicly available in the published patent document.
- A **trademark** is a sign capable of distinguishing the goods or services of one enterprise from those of other enterprises. Trademarks date back to ancient times when craftsmen used to put their signature or "mark" on their products.

SLIC recognizes the importance of Intellectual Property and its protection. For the most part, SLIC student solvers, or participants, will be creating potentially new ideas/concepts and reducing them to writing and/or diagrams; these are so-called expressions of ideas. Such expressions are automatically protected by Copyright Law. In light of this, please include the following in the footer of all submissions:

"Proprietary Information. © Copyright 2016 <insert team name>."

Teachers and parents should understand that all student team submissions uploaded to the SLIC Platform will be protected, and the teacher's role is to help ensure the privacy of their student teams' Ideas. Please do not send out a student team's application to a potentially competing team to protect their Intellectual Property.

If a student team engages the assistance of a mentor, they should insist that the mentor(s) sign non-disclosure agreements to ensure that the team's Intellectual Property is protected, while allowing the students to speak freely with the expert. For more information on non-disclosure agreements and to create one, see [NOLO's Sample NDA](#).

During the competition phase of SLIC, judges will also be required to sign a non-disclosure agreement, protecting student Ideas as they are evaluating their solutions. When student teams are discussing their Ideas during the public portion of the competition, they should not go into detail exposing any proprietary designs, code, etc. — instead only sharing concepts — on parts of the solution that are considered to be Intellectual Property. This includes both the information shared during the oral presentation and in the exposition hall at the team's table display.

For more general information on Intellectual Property Protection, read [10 Ways to Protect Your Intellectual Property](#) (Fitzsimmons, Kelly. "10 Ways to Protect Your Intellectual Property." www.inc.com/kelly-fitzsimmons/ten-ways-to-protect-your-intellectual-property.html. Accessed 15 October 2016).

If there are additional questions regarding Intellectual Property and SLIC guidelines regarding the matter, please contact SLIC Support at support@slc-solutions.com.

**Consent for Participation in the
Student-Led Ideation Challenge (SLIC) Program**

I hereby grant my child permission to participate in the Innovative Solutions Consortium (“ISC”) and Virginia Department of Education’s Student-Led Ideation Challenge (the “Challenge”).

I understand that by participating in the Challenge, my child will have the ability to submit ideas, code, information and other materials relating to his or her solutions to real world challenges via his or her teachers to _____ [insert school name] (the “School”),
_____ [insert division name] (the “Division”) and ISC.

I also understand the following:

- During the registration process, my child may be asked to provide certain information for notification and security purposes, including a parent or guardian’s email address, my child’s email address and my child’s first and last name. I hereby agree to the submittal of such information.
- Photographs of my child may be published by the School, Division, the Virginia Department of Education, ISC, or media outlets (including, without limitation, via print media, online, social media, and other media interested in or reporting on the Challenge). The photographs may include my child’s first and last name, and information concerning the School and Division he or she attends and his or her grade level.
- Neither my child nor I will be compensated by ISC, his or her School, or Division for my child’s participation in the Challenge or any solutions submitted by my child.
- ISC, my child’s School, and Division may publicly display my child’s solution. I understand that it is my responsibility to determine whether and how any intellectual property rights in my child’s solution should be protected. By signing below I am giving ISC and my child’s School and Division permission to upload, reproduce, edit and modify for display, permit others to access and otherwise publicly display my child’s solution.
- Individuals may, without ISC’s consent, copy and distribute portions (or all) of the photographs and solutions and I agree that I will not hold either ISC or my child’s School or Division responsible for these actions if they occur.
- The ISC, my child’s School and Division are not, and cannot, be held responsible for the release of all or any portion of the solution submitted by my child in participating in the Challenge. It is my responsibility to determine what my child should share in connection with the Challenge, and how to protect any proprietary information relating to any such solution.

By signing below, I authorize my child’s photographs and other personally-identifiable information, as well as any solutions my child submits to the Challenge to be displayed by ISC, the Division and School my child attends.

I understand that if I would like to have my child’s personal information deleted from ISC’s records, I may contact you at support@slc-solutions.com.

Name of Student: _____

AGREED TO AND ACCEPTED BY:

Signature of Parent/Guardian: _____

Printed Name and Relationship
to Student: _____

Date: _____



CHALLENGE QUESTIONS & JUDGING CRITERIA



Challenge #1: How to Improve the Way We Teach to Better Prepare Students for Life in the 21st Century

Overview and Background

In 1635 the first public school was opened in Boston, MA. Today there are almost 99,000 public schools in the United States of America, with 2,093 of those in the Commonwealth of Virginia. Since those early Colonial times, the public school system has changed in many dramatic ways, but the system has always strived to better prepare graduating students for life beyond school.

The 21st Century has created some new challenges for graduating students, so The Standards of Learning Innovation Committee, in its [October 29, 2015, report to the General Assembly](#) (PDF), recommended that the Board of Education develop a “Profile of a Virginia Graduate” and adjust Virginia’s diploma requirements to conform with the profile. The 2016 General Assembly approved, and the governor signed, [House Bill 895](#) and [Senate Bill 336](#), which directed the Board of Education to begin the process of:

1. Developing and implementing a “Profile of a Virginia Graduate,” identifying the knowledge and skills that students should attain during high school in order to be successful.
2. Developing what the profile should be, giving due consideration to the “5’Cs.”

Critical Thinking	
<p>Definition: Analyzing and evaluating information in order to make connections, draw conclusions, and/or solve complex problems.</p>	<p>Demonstration includes:</p> <ul style="list-style-type: none"> • Recognizing, analyzing, and solving problems that arise in completing assigned tasks • Identifying resources that may help solve a specific problem • Using a logical approach to make decisions and solve problems
Creative Thinking	
<p>Definition: Using a variety of techniques to generate innovative solutions and ideas.</p>	<p>Demonstration includes:</p> <ul style="list-style-type: none"> • Contributing new ideas (e.g., for improving products and procedures) • Displaying initiative readily, independently, and responsibly • Dealing skillfully and promptly with new situations and obstacles

Collaboration

Definition:

Working within teams towards a common goal in an effective, efficient, and respectful manner.

Demonstration includes:

- Contributing to the success of the team (e.g., brainstorming solutions, volunteering, performing in accordance with the assigned role)
- Assisting others (e.g., supporting team members and leaders, taking initiative)
- Requesting help when needed (e.g., asking questions after reading the materials and FAQs, knowing when to seek help from peers and teachers)

Communication

Definition:

Expressing thoughts and ideas to others using oral, written, and/or non-verbal forms; deciphering meaning from oral, written, and/or non-verbal forms.

Demonstration includes:

- Communicating effectively with peers, teachers, and others (e.g., avoiding the use of slang, being pleasant and helpful)
- Exhibiting public and group speaking skills
- Comprehending details and following directions
- Repeating directions or requests to ensure understanding (i.e., practicing active listening)

Citizenship

Definition:

Contributing to society using thoughtful, effective, and respectful behaviors that enhance local, nation, and global communities.

Demonstration includes:

- Identifying and abiding by government and school laws and policies
- Respecting the property of others
- Identifying how one's actions and behavior can have far-reaching effects (e.g., personal behavior affects others nearby; decisions can have global implications or impact the environment) exhibiting honesty and reliability

Note: The definitions of the 5C's have been developed by WHRO for the purposes of this Challenge. The "Demonstration Includes" section is from the Virginia Department of Education, Career and Technical Education, [Virginia's Workplace Readiness Skills](#).

3. Emphasizing the development of core skill sets in the early years of high school.
4. Establishing multiple paths toward college- and career-readiness for students to follow in the later years of high school, which could include opportunities for internships, externships, and credentialing.

In the execution of this initiative, the Board of Education has heard from students, families and educators that earning a diploma should be about more than passing a prescribed series of courses and tests. The Board also has heard from higher education, businesses and the military that graduates need skills and attributes such as critical thinking, creative thinking, communication, collaboration and citizenship, to be successful in life.

“The “Profile of a Virginia Graduate” describes the knowledge, skills, experiences, and attributes that students must attain to be successful in college and/or the work force and to be “life ready” in an economy and a world characterized by rapid change. The Board has determined that a life-ready Virginia graduate must:

- Achieve and apply appropriate academic and technical knowledge (content knowledge)
- Demonstrate productive workplace skills, qualities, and behaviors (career skills)
- Build connections and value interactions with others as a responsible and responsive citizen (community engagement and civic responsibility)
- Align knowledge, skills, and personal interests with career opportunities (career exploration)

The development of the “Profile of a Virginia Graduate” creates a framework for the Board of Education as it reviews the commonwealth’s diploma standards to ensure that high school graduates are prepared for a successful life after high school.” (*“Profile of a Virginia Graduate”*)

Problem Statement

The current curriculum and the Virginia Standards of Learning (SOL) tests do not fully test or prepare students for life in the 21st century. They focus more on memorization than critical thinking. Accountability Systems are used to assess only students’ memorization proficiencies. Advanced thinking processes are better assessed using Authentic Assessments, where students perform a real-world task that typically requires critical thinking and problem-solving skills to successfully address a challenge. This simulates tasks that would be done in a setting outside the classroom (a workplace or community, for example) (see *Appendix C of the General Assembly Report*).

Nevertheless, to ensure that students are prepared for the future, it is vital that they are taught the skills they will need upon graduation. Therefore, both curriculum and the tests to assess proficiencies of these skills need to be developed to teach students the 5C’s — starting in kindergarten — in a way that will be engaging, meaningful, and memorable for them.

Ideation Challenge

High school students need to be taught skills necessary for success after graduation. The goal of this challenge is to provide authentic learning experiences that will prepare students for college, career, and life.

Your challenge is to choose from one or more subject areas— science, math, English, music, art, computer science, etc.—and design a grade-level program, project-based activity, or other innovative opportunity that will enhance student learning in the chosen subject area(s) and develop the critical skills needed to become "life ready":

***Critical Thinkers
Creative Thinkers
Collaborators
Communicators
Citizens***

Make sure to address the following information in your submissions:

1. Create an Action Plan on how your Team's solution can be implemented.
2. Illustrate how your solution teaches the 5C's and helps prepare graduates for the workforce, college, and life; use the examples above to help guide you.
3. Provide details on how to measure the success of this new approach. You may include both tests given to the students, as well as how to measure the success of the school over a long period of time.

Judging Criteria

- How innovative in thinking is the idea to solve this problem? How novel is this approach?
- Is this technology/approach brand new or does it combine existing technologies/approaches in a novel way?
- Is the solution scalable across other schools and/or disciplines?
- How plausible is the solution? Can it be implemented? Will it meet the stakeholders' needs?
- How well does the solution teach Critical Thinking as defined in the Challenge?
- How well does the solution teach Creative Thinking as defined in the Challenge?
- How well does the solution teach Communication as defined in the Challenge?
- How well does the solution teach Collaboration as defined in the Challenge?
- How well does the solution teach Citizenship as defined in the Challenge?
- Overall, will the proposed technique(s) and approach(es) help students be better prepared for the workforce, college, and life?



Challenge #2: Develop a Small Light-Weight UAV/System with Autonomous Navigation

Overview and Background

Autonomy in unmanned aerial systems (UAVs), commonly known as drones, is a desirable and futuristic goal. It is also necessary to advance UAV technology.

UAVs are being used by hobbyists, in the military as well as commercial businesses, for a variety of applications. In the military, for example, UAVs are being deployed for Intelligence, Surveillance and Reconnaissance (ISR) missions. In commercial sectors, on the other hand, UAVs are being used for a wide range of functions, including transport monitoring, pipeline and border patrol surveillance, monitoring traffic congestion, assessing damages to buildings after a natural disaster, and delivering packages, just to name a few.

Autonomy can add a new paradigm towards intelligent unmanned systems and opens doors for new applications and tactics. Rapid progress in terms of autonomous flight has been demonstrated in large military UAVs, including advances in semi-autonomous and multi-functional capabilities; however, very limited progress has been made in small UAVs. This is primarily due to a lack of on-board power and payload capability. Given the Army's vision, in order to augment small military units or individual soldiers with small UAVs (weighing from a few tens of grams up to 5kg), advances in small UAV autonomous flight technology is essential.

One critical function that a UAV must possess is a "sense and avoid" capability. Large systems utilize a suite of sophisticated sensors such as radar, LIDAR, and Electro Optical/IR cameras, and also possess significant on-board computational power to analyze objects (i.e., terrain, trees, other environmental or urban elements) around them in real-time while in flight. These types of systems are currently prohibitive on small UAVs due to weight and space considerations.

Problem Statement

The purpose of this challenge is to find a solution that provides a "sense and avoid" capability for a small, light-weight UAV system.

The problem of navigating through uncharted natural and man-made environments without colliding with objects is challenging because one has to create a three-dimensional representation of the terrain/environment with respect to the UAV's instantaneous position while in flight.

For humans, the eyes (our optical sensors) are offset by a few inches, which creates so-called parallax, or a small offset/displacement of an object when viewed by the two different lines of sight (through each eye). The amount of offset/displacement — more for close objects and less for far away objects — can be used to gain a sense of distance to an object, and provide a three-dimensional representation of the landscape or object that is in front of the sensors (eyes). This is often referred to as depth perception.

Ideation Challenge

The objective of this challenge is to develop a small light-weight UAV/system that can autonomously navigate an obstacle course using only optical camera(s).

Select 1 of the 2 following options:

Option A: Using an existing small UAV/drone (no more than 5 lbs. in weight, 18 inches in width) with their on-board camera and standard equipment, how can autonomous flight with sense and avoid capabilities be incorporated into its functionality? Many advanced drones/UAV's can utilize accessories such as advanced flight and/or remote controllers with feature-packed software and open-source programming capabilities that allow you build-in/develop advanced-maneuver functionality. These types of accessories, or your own unique accessories, may be considered in your solution.

Option B: Design a new small UAV platform and flight/remote controller for autonomous flight with sense and avoid capabilities. This can be done by redesigning any aspect of the equipment including, but not limited to the platform, the robotics, the cameras, the controllers, the processors, etc. Be creative! The only restrictions are that the design must be under 5 lbs. in weight, and 18 inches in width.

In the design and response to this Challenge, you must:

4. Describe the systems hardware and/or unique software components (platform, camera(s), controllers, computers, unique software modules, batteries, etc.).
5. Describe how the system will see (sense) and understand objects (terrain, trees, solid obstructions, etc.). That is, how will you achieve things like parallax, size/depth perception, distance, etc., while in flight, or have you figured out other ways to “sense”?
6. Describe how and/or where the system will process the camera/optical/sensing data and object information? Also describe how much time this will take.
7. Describe how the system will take the optical data (described in 3. above) and feed it back to the flight controller(s) as necessary, to avoid objects in flight.
8. Describe how the system will achieve autonomous flight through an obstacle course — including how long it might take to complete — from one point to another (10 feet off the ground and 100 feet apart) considering the following obstacles in your path:
 - A solid stationary object that is roughly the same color as its background environment
 - A horizontal wire that is directly in its flight path
 - A flying object that is on a collision course with your UAV/drone system
 - And, as a bonus, assume your UAV/drone system approaches an extremely large wall that is too big/large to go around. Would it stop and hover? Would it be able to locate an open doorway/passageway in that wall and then fly through it? Describe how this will happen.
9. Include diagrams illustrating how your solution will look and function in your responses.

Whether you pick Option A or Option B, apply the following constraints:

10. The UAV/drone system cannot be more than 18 inches in width or 5 lbs. total weight (including any on-board accessories, batteries, etc. you use).
11. Use only optical camera(s) or device(s).
12. The UAV/drone will fly only in daylight hours.

Judging Criteria

- How innovative in thinking is the idea to solve this problem? How novel is this approach?
- Is this technology/approach brand new or does it combine existing technologies/approaches in a novel way?
- How plausible is the solution? Can it be implemented? Will it meet the stakeholders' needs?
- How complete is the description of the hardware and/or unique software components? Is there anything missing?
- How well does the solution sense things? How well does the solution interpret data to create parallax, size/depth perception, distance, etc., while in flight? Does the solution "sense" objects in other ways?
- How well and where does the solution process the data? How quickly?
- How well does the solution utilize the data while in flight to avoid colliding into obstacles?
- How clearly have you described how the solution will react to each of the obstacles? A solid stationary object that has a similar color as the surrounding environment? A thin wire? An object flying towards the UAV? A large object that the UAV cannot go around?
- Overall, do you believe that the solution will be capable of completing the obstacle course in a reasonable amount of time?



Challenge #3: Protecting our Forests and Monitoring our Land Use

Overview and Background

The Earth's soils are the foundation for humanity's future and are critical for producing healthy forests. Soil supports forests, urbanization, agriculture and many other land uses. It is critical for society as a whole to recognize that we need healthy forests and soil to support all of the land uses upon which humans rely.

We need to understand and define the state of health of our forested lands — such as what is living in it — and inventory what is growing in these areas.

Globally, tens of thousands of acres of soil each year become so degraded they can no longer sustain life. We continue to lose forested land acreage which is vital for overall planetary health. This Challenge aims to study Earth's forests and their dependence on a healthy soil system. By finding ways for citizen scientists to collaborate — throughout the country and around the world — on ideas about healthy forests, then, information about their ecosystems can be shared. This will ultimately raise awareness of their critical impact upon our Earth.

Problem Statement

The United States represents a combination of extremes — highly urbanized areas surrounded by much larger expanses of agricultural and forested open space. The Commonwealth of Virginia is just one example of this, with pockets of cities skirted with suburbs that are surrounded by the vast Appalachian Mountain Range and farmlands.

Humans rely upon healthy forest ecosystems for products like clothing, paper, lumber, and even water via our watershed systems. In fact, two out of three Americans get their drinking water from a forested watershed every day. Water, a commodity that we can't live without, is perhaps the most important "forest product."

Despite the degradation of our soil and the loss of lands that support our forests, the damage is reversible. In an era when climate change and the need to find ways to reduce carbon being released into the atmosphere is a dominant global issue — even in highly forested areas — collectively we can discover and enable new ways to find solutions to these very important problems. Potential areas for change could include finding new consumer uses for our forests (such as Torrefied wood) as a natural energy resource, and better monitoring of our forest ecosystems' health. Increased citizen participation and the exploration of new approaches to elevate effective land use and forest sustainability could be beneficial in actually lowering the Earth's temperature, while at the same time providing fresh water ecosystems.

Inventorying forests, even just to determine the size, species mix and condition of trees on a forested area, is expensive and time consuming. Most states have inventories that are conducted only every

7-10 years. The industry is always looking for ways to perform these surveys more frequently, efficiently, and cost-effectively to ensure that the data is as current as possible. This information will assist landowners, land managers, and wildlife biologists understand the entire forestry ecosystem, which will enable them to make well-informed decisions about what strategies are necessary to improve watersheds, increase forestry productivity, reverse the effects of global warming, and create overall healthy forestry ecosystems.

Solution Statement

In order to restore and protect our forest ecosystems, we need to know the following:

- What choices are people making about global land usage (i.e., when they build houses, clear the land for crops, leave the woods untouched, etc.)?
- What is the health of a tree or forest based on standardized criteria?
- What techniques, processes or methodologies can be implemented to create healthier forested lands?
- How can we utilize technology and new social paradigms, like crowdsourcing, to link citizen scientists at scale and better monitor forest conditions? What type of technology solution/system could be built to produce an interactive map of land use, including data regarding plants and animals living in these environments, as well as forest and soil conditions. Would anything need to change to make the implementation of your proposed solution possible?
- What types of plants and animals are growing and living in the trees and forested areas in your community?

These questions need to be answered with data from around the world, but first citizen scientists can begin by finding answers locally.

Ideation Challenge

What humans choose to do with the finite amount of land we have on our planet, and documenting how all areas are being used, is an important aspect to ensure that our forest ecosystems are preserved. This includes the critical interdependency between soils and forests, and the associated impact to our food and water supply. How are land areas being used near you and in your community (housing, business, crops, forests, agriculture, etc.)? What types of tree species are growing in or near your community?

Based on what you observe, what solutions would you implement to address these key forest ecosystem challenges to help support healthy forest ecosystems, and the byproducts they produce, to make a healthy planet?

Propose creative ideas on how to design and build an interactive map of tree, soil and forest health that can be used to monitor and assess land usage and forest ecosystems health. Based on what the data in this interactive map could highlight, please propose new methods to monetize forested lands that would allow landowners to keep forests as forests (i.e., using low-value timber as a fuel alternative, finding new commercial market uses for timber or watershed areas, etc.).

Please include the following information in your responses to the Application Questions:

1. Select an area of forested land, or land with at least some trees on it, encompassing a specific amount of space (e.g., 1 square meter, 1 square acre). Document the GPS location and photograph the area.
2. Describe the land use in detail, such as if it contains housing, what type (single family, apartment, etc.); if it contains crops, what is growing there (corn, potatoes, soy beans, etc.); if it is only forest, what type (deciduous, coniferous, mixed, etc.). Or is it a combination of uses (e.g., a house with a grassy yard or backing up to a forest)? Be observant, and as detailed and specific as possible.
3. Create a Forest/Tree Health Report Card to ensure consistency across citizen scientists. Provide an assessment on the Trees' health based on your "Report Card" criteria, explaining how your team is defining and measuring for healthy forest/tree life so this same technique can be replicated by others over the course of multiple growing seasons. A checklist of tree density, and good and bad plants (invasive species) divided up by region could be a helpful component.
4. What type of plant life is growing with the trees? Specifically identify the invasive plant species growing within the designated area (i.e., Japanese Honeysuckle, Cogon grass, Wavy leaf basket grass, Tree-of-Heaven). Take photographs of the trees and plants, document the date and time, and create a list of what you see. If you cannot identify the plant on your own, how can you figure out what it is?
5. Document any animal sightings (mammals, birds, insects, microorganisms, etc.) living in the soil, on the plants, or in the trees. Take photographs of the animals (or samples of the soil they are living in), document the date and time, and create a list of what you see. If you cannot identify the species on your own, how can you figure out what it is?
6. Describe how you would share this information across a global network. Describe how you would use this network to encourage other citizen scientists to repeat your approach for consistency in data collection and reporting, as documented in your Forest/Tree Report Card. Also include a strategy of when and how often assessments should be conducted. Include a description of how you will globally grow your citizen scientist network and encourage the exchange of information on how all types of forests directly impact our planet's health and all of its inhabitants. Be creative!

Judging Criteria

- How innovative in thinking is the idea to solve this problem? How novel is this approach?
- Is this technology/approach brand new or does the solution combine existing technologies/approaches in a novel way?
- How plausible is the solution? Can it be implemented? Will it meet the stakeholders' needs?
- How effective is the network approach to engaging and retaining citizen scientists over long term? Is it sustainable? For example, does the solution incentivize people to get involved and stay involved (e.g., make it a game, give points or prizes, make it fun, etc.) as citizen scientists, to collect data using your Report Card criteria, and to post their findings (e.g., how Waze uses crowdsourcing to identify traffic issues)?
- How well does the solution scale to a global citizen scientist network?
- How realistic and achievable is the proposed idea in helping monetize different attributes of the forest ecosystems?
- Overall, will the proposed technology/approach enable researchers to build an interactive, near real time "map" of the forests and trees, and the way land is being used with details of what will be found upon all surface areas of the Earth? Will the solution be able to provide forestry, landowners, land managers, biologists, and botanists to accumulate the data they need to help improve our forests?



APPLICATION QUESTIONS & SUGGESTED DEADLINES

PHASE I: *Brainstorm ideas with your team to design the best solution to the Challenge you selected. Review the Judging Criteria questions listed as part of your selected Challenge. Try to address the questions based on the information that you gather during Phase I.*

Question #1: Select the Challenge you want to solve, form a team, and decide upon team member roles needed for successful collaboration and complete the template provided.

Supplement: Team Roles
Estimated time for completion: Approx. 45 – 90 min
Suggested Deadline: Nov. 3

Question #2: What is your idea (solution) to solve this problem? Using communication and critical thinking skills, describe how will your solution help solve this problem in detail. Write a summary and include a visual representation of your idea as indicated on the assessment rubric.

Supplement: Summary and Visuals Checklist
Estimated time for completion: Approx. 90 – 180 min
Suggested Deadline: Nov. 11

Question #3: Who will benefit from your solution and why? Using the profile template, identify your audience and create a user profile(s) describing who will benefit from your solution by completing each required section. Create profiles for each type of person who will benefit from your solution.

Supplement: Profile Template
Estimated time for completion: Approx. 90 – 180 min
Suggested Deadline: Nov. 15

Question #4: In a 90-second video, PowerPoint presentation, or other creative work, present an explanation of your idea and how will it solve the problem as indicated on the checklist. Videos should be uploaded to YouTube and set to "private," while other presentation formats should be uploaded to the Platform.

**If you choose to do a video, upload it to YouTube in this format:
http://www.youtube.com/watch?v=_MVonyVSQoM?**

Supplement: Presentation Checklist
Estimated time for completion: Approx. 225 – 450 min
Suggested Deadline: Dec. 9

PHASE II: Divisional Winners - Respond to the following questions (#5-#10) in support of your idea, and relative to the Judging Criteria for your Challenge.

Question #5: How will you solve this Challenge? Develop an action plan using a flow chart, Gantt Chart, or list, etc. to illustrate the steps/processes needed to accomplish your proposed solution, in detail, following the checklist (what you are building and how you will perform these tasks w/milestones, major steps, & sub-steps).

Supplement: Action Plan Checklist
Estimated time for completion: Approx. 180 – 225 min
Suggested Deadline: Jan. 23

Question #6: What do you think the most difficult tasks will be in creating your solution and prototype/pilot program? Using your action plan, generate a list of tasks, itemizing all potential problems and related solutions, to create a Risk Assessment Report with the provided template.

Supplement: Risk Assessment Template
Estimated time for completion: Approx. 90 – 180 min
Suggested Deadline: Jan. 26

Question #7: Based on your research, did you find any other solutions similar to what you are proposing? Given your proposed solution, conduct research and compare existing solutions. Document your findings in a spreadsheet or comparative essay. Include visuals and citations. A template and rubric are provided.

Supplement: Competitive Analysis Template and Comparative Essay Rubric
Estimated time for completion: Approx. 225 – 450 min
Suggested Deadline: Feb. 3

Question #8: What resources (i.e.; equipment, people, money, physical space/environment, etc.) will you need to build your solution and prototype/pilot program? Given your proposed solution, make a list of required resources needed to build your prototype/pilot on the template.

Supplement: Required Resources Template
Estimated time for completion: Approx. 90 – 180 min
Suggested Deadline: Feb. 7

Question #9: How will your new solution's success be measured? Analyze the solution and design an assessment instrument (AKA a measurement tool or recording document) that allows for a collection of data to be recorded and used for measuring and proving your solution is better than other solutions as indicated on the checklist.

Supplement: Assessment Instrument Checklist
Estimated time for completion: Approx. 225 – 450 min
Suggested Deadline: Feb. 17

Question #10: Create a 10-minute presentation (video, PPT, etc.) that summarizes your solution. Describe why your solution should be chosen as the most impactful and innovative idea, and why it is better than other options based on the challenge criteria (use responses to #5-#9 to support this answer)? Upload file/insert link.



Note: This presentation will be given at the Regional Event.

Supplement: Presentation Checklist
Estimated time for completion: Approx. 225 – 450 min
Suggested Deadline: Feb. 24

PHASE III: State Winners - 1st and 2nd Place Winners will perform the following tasks:

- Build a solution into a working prototype with assistance from industry and/or academia experts.
- Present the prototype to the Challenge Area Stakeholders.



RUBRICS, TEMPLATES & CHECKLISTS

QUESTION #1: TEAM ROLES TEMPLATE

Using the template below, record your team’s selected Challenge (including the option if applicable), team name, the idea title, the list of team members by name, and the list of each team member’s designated role with a description of their responsibilities. Each section must represent the work of the entire team. This template will be assessed as “Complete” or “Incomplete.”

Challenge		
Team Name		
Idea Title		
List below each team member’s first and last name	List the role of the team member	Describe role responsibilities

QUESTION #2: SUMMARY AND VISUALS CHECKLIST

As you create the summary and visuals, keep the following points in mind:

- The subject tells what you are proposing as a solution.
- The position explains why your proposal is a valid solution. This cannot be merely fact. It has to be an opinion that you can prove, debate, and support.
- The topics include how you are proving your solution. These are the reasons for your opinion and the “because” answers to your problem.

Review the checklist below to ensure you have included all of the needed items to receive full credit for your work.

<i>*The summary and visuals should include all of the criteria listed below to receive full credit.</i>		
Included?	Item	Point Value
	The summary includes a topic sentence that describes the main idea.	10 Points
	The summary includes at least 3 sentences with details supporting the main idea.	10 Points
	The summary contains a concluding sentence that recaps the main idea.	10 Points
	The summary represents research conducted.	10 Points
	The summary contains clear details regarding how the proposed solution solves the problem.	10 Points
	The visuals clearly represent the proposed solution.	10 Points
	The visuals are attractive with good use of colors, design, and space.	10 Points
	The visuals are appropriately labeled.	10 Points
	The summary and visuals are free from any spelling or grammatical errors.	10 Points
	All outside resources are correctly cited.	10 Points

_____ / 100

QUESTION #3: PROFILE TEMPLATE

Using the template below, create a profile for each type of user that will benefit from your solution. Use a new template for each different type of user. Each block must be filled in completely. The template(s) will be assessed as “Complete” or “Incomplete.”

User Profile		
Image:	Word or phrase that summarizes user:	
	Age:	Gender:
	Profession:	
	Geographic location:	
Interests:		
Values:		
Needs:		
Concerns:		
How will your solution benefit this user?		

QUESTION #4: PRESENTATION CHECKLIST

As you create your presentation, please review the checklist below to ensure you have included all of the necessary items to receive full credit for your work.

If you create a video, it needs to be uploaded to YouTube™ and set to private. The private URL should be submitted to your teacher. Visit this link for directions regarding YouTube™ privacy settings:

<https://support.google.com/youtube/answer/157177?hl=en-uk>

<i>*The presentation should include all of the criteria listed below to receive full credit.</i>		
Included?	Item	Point Values
MECHANICS		
	The presentation should be 90-seconds long.	10 Points
	If it is a video, it has a private YouTube™URL submitted to the teacher.	
QUALITY		
	The presentation is visually clear and easy to see.	10 Points
	The presentation uses clear audio.	10 Points
CONTENT		
	All members of the group are represented in the presentation.	20 Points
	The presentation summarizes the student group solution.	15 Points
	The presentation emphasizes the solution's impact and innovation.	15 Points
	The presentation reflects creativity.	10 Points
	All outside resources are correctly cited.	10 Points

_____ / 100

QUESTION #5: ACTION PLAN CHECKLIST

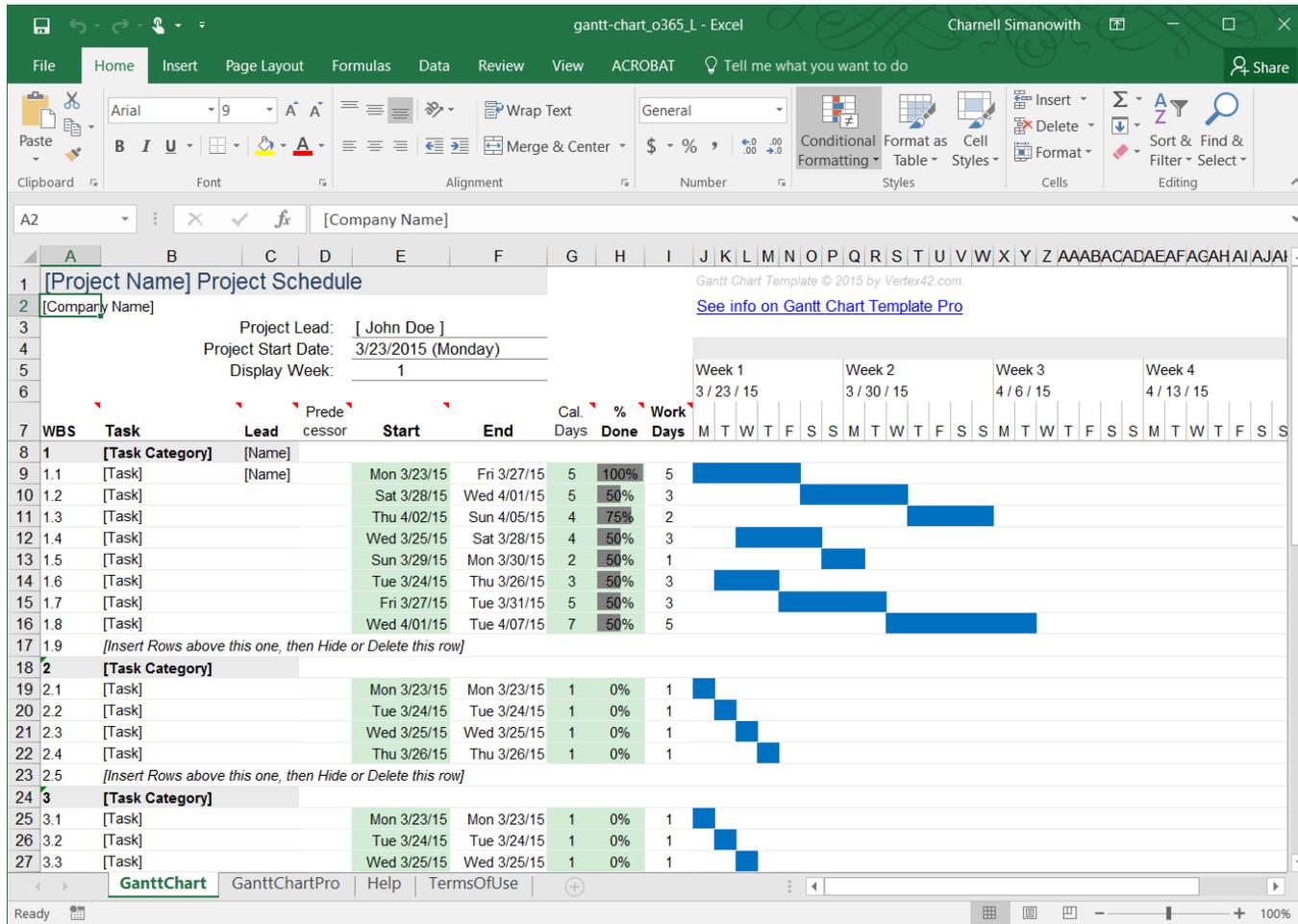
As you create your action plan, please review the checklist below to ensure you have included all of the needed items to receive full credit for your work. The information can be presented in a format of your choice (e.g., list, Gantt Chart, flow chart, etc.).

<i>*The action plan and visual should include all of the criteria listed below to receive full credit.</i>		
Included?	Item	Point Value
	The action plan describes the actions required to solve the problem.	20 Points
	The action plan describes who will carry out each step/action.	10 Points
	The action plan describes how long each step/action will take.	10 Points
	The action plan describes what resources are needed to carry out the plan.	10 Points
	The action plan lists all of the milestones.	10 Points
	The action plan lists all of the major steps.	10 Points
	The action plan lists all of the sub-steps.	10 Points
	The action plan is free from any spelling or grammatical errors.	10 Points
	All outside resources are correctly cited.	10 Points

_____ / 100

GANTT CHART TEMPLATE

Refer to <http://www.vertex42.com/ExcelTemplates/excel-gantt-chart.html> to download templates for several project schedule options. The templates support a variety of software apps so teachers can choose the one that best fits their classroom needs. For a simple template, click Gantt Chart in the top menu bar, then scroll midway down the page to download a sample. Although you may find other more robust templates, the simple Gantt Chart below only requires a basic knowledge of Excel.



QUESTION #7: COMPETITIVE ANALYSIS TEMPLATE

Use the following Competitive Analysis Template to compare your own solution to the features and functionality of other solutions currently available. You may present your data in a spreadsheet or a comparative essay. Include visuals and citations. Add or delete additional rows as needed. This template will be assessed as “Complete” or “Incomplete.”

If you choose to write an essay, use the rubric below to help you complete this assignment and understand how your work will be assessed. 100 bonus points may be added for choosing to write the essay.

Organization Name & URL	Solution Description	Differentiators	Notes

COMPARATIVE ESSAY RUBRIC

	20 Points	15 Points	10 Points	5 Points
Organization and Clarity	The comparative essay is organized and clear and effectively uses transitions. Meets or exceeds a minimum of 5 paragraphs.	The comparative essay is organized and clear and uses transitions. Meets or exceeds a minimum of 5 paragraphs.	The comparative essay lacks some organization and clarity. The use of transitions is limited. Meets a minimum of 5 paragraphs.	There is little evidence of organization or clarity with the comparative essay. Does not include the minimum of 5 paragraphs.
Comparative Content	Ample and accurate comparative details and evidence (statistics, facts, examples, expert testimony, analogies, definitions, and anecdotes) are provided and effectively used.	Comparative details and evidence (statistics, facts, examples, expert testimony, analogies, definitions, and anecdotes) are provided.	The comparative details and evidence (statistics, facts, examples, expert testimony, analogies, definitions, and anecdotes) contain misinterpreted information and lack development.	The comparative details and evidence (statistics, facts, examples, expert testimony, analogies, definitions, and anecdotes) contain misinterpreted information and are not developed.
Mechanics (Format, Works Cited, Grammar, and Spelling)	The formatting of quotes, paraphrased information, and source information adheres to the proper formatting guidelines. The text contains no errors in grammar that distract the reader from the content.	There are minor formatting (quoted and paraphrased material and source information) errors. Overall, the comparative writing adheres to the formatting guidelines. The text contains 1-2 errors in grammar or spelling that distract the reader from the content.	There are several formatting errors (issues with quoted and paraphrased material and source information). The text contains 3-4 errors in grammar or spelling that distract the reader from the content.	An attempt at formatting is made, but it does not follow the proper guidelines. The text contains more than 4 errors in grammar or spelling that distract the reader from the content.
Visual Content	The visuals contain a title and labels. The comparative content is organized and clearly represented.	The visuals contain a title and labels. The comparative content is adequately represented.	The visuals are poorly labeled. The comparative content is partially represented.	The visuals are not labeled. The comparative content is not represented.

	20 Points	15 Points	10 Points	5 Points
Visual Aesthetics	The visuals are original and effectively use color, design, and space and are attractive and visually appealing.	The visuals are original and use adequate color, design, and space.	The visuals poorly use color, design, and space.	The visuals do not use color, design, and space and are not visually appealing.

_____ / 100 Points

QUESTION #8: REQUIRED RESOURCES TEMPLATE

Resources can be anything that is needed to create the prototype/pilot (i.e. time, money, equipment, people, etc.). Using the template below, provide information about the needed resources for your proposed solution. In the first column, list all required resources. In the second column, describe how the resource will be used. In the third column, indicate where the resources can be found (i.e. URL, school item, etc.). See the example provided in the first row. Add or delete additional rows as needed. This template will be assessed as “Complete” or “Incomplete.”

Required Resource	Purpose (How will it be used?)	Location of Resource
3-D Printer	Building landing gear of UAV	https://www.makerbot.com/replicator-mini/

QUESTION #9: ASSESSMENT INSTRUMENT CHECKLIST

As you create your instrument, please review the checklist below to ensure you have included all of the needed items to receive full credit for your work.

<i>*The instrument should include all of the criteria listed below to receive full credit.</i>		
Included?	Item	Point Values
	The instrument allows for data to be collected.	10 Points
	The instrument clearly labels what data is to be collected, how to collect the data, and how often to collect the data.	10 Points
	The instrument effectively measures the proposed solution.	10 Points
	The instrument contains a narrative section that allows users to explain how the solution is successful as presented from the data and/or measurements collected.	10 Points
	The instrument could be replicated for other proposed solutions to the same problem in order for a comparison analysis to be conducted.	10 Points
	If implemented, the instrument would allow your team to create a report supporting the outcome(s) of the proposed solution.	10 Points
	The instrument is designed in a clear and organized manner and contains a title.	10 Points
	The instrument is cohesive and is easy to read.	10 Points
	The instrument is free from any spelling or grammatical errors.	10 Points
	All outside resources are correctly cited.	10 Points

_____ / 100

QUESTION #10: PRESENTATION CHECKLIST

As you create your presentation, please review the checklist below to ensure you have included all of the necessary items to receive full credit for your work. If you create a video, it needs to be uploaded to YouTube™ and set to private. The private URL should be submitted to your teacher. Visit this link for directions regarding YouTube™ privacy settings:

<https://support.google.com/youtube/answer/157177?hl=en-uk>

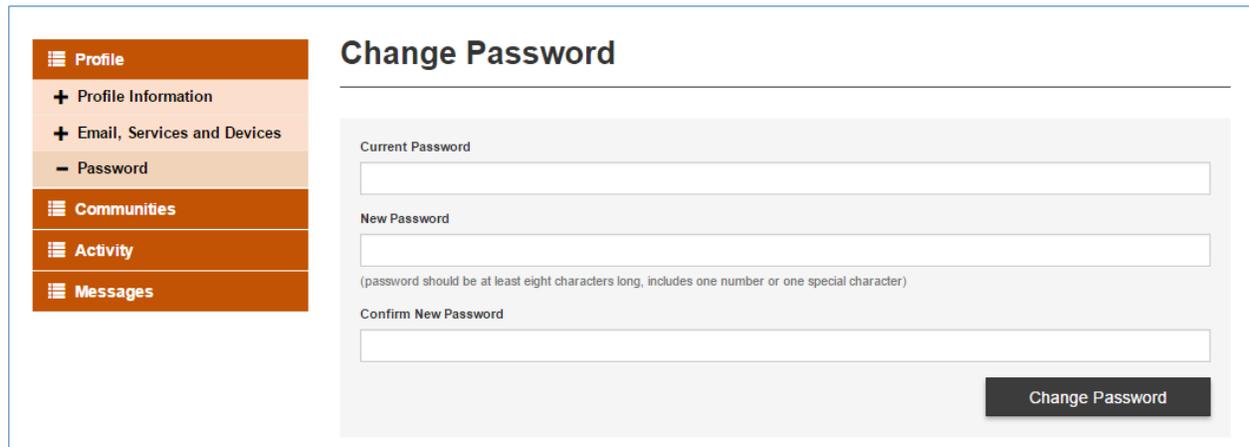
<i>*The presentation should include all of the criteria listed below to receive full credit.</i>		
Included?	Item	Point Values
MECHANICS		
	The presentation should be 10 minutes long.	10 Points
QUALITY		
	The presentation is visually clear and easy to see.	10 Points
	The presentation uses clear audio.	10 Points
CONTENT		
	All members of the group are represented in the presentation.	15 Points
	The presentation summarizes the student group solution.	10 Points
	The presentation emphasizes the solution's impact and innovation.	15 Points
	The presentation explains how the solution is better than other solutions.	10 Points
	The presentation reflects creativity.	10 Points
	All outside resources are correctly cited.	10 Points

_____ / 100



SLIC PLATFORM HIGHLIGHTS

RESETTING YOUR PASSWORD



The screenshot shows a user interface for changing a password. On the left is a navigation menu with the following items: Profile (expanded), Profile Information, Email, Services and Devices, Password, Communities, Activity, and Messages. The main content area is titled 'Change Password' and contains three input fields: 'Current Password', 'New Password', and 'Confirm New Password'. A note below the 'New Password' field states: '(password should be at least eight characters long, includes one number or one special character)'. A 'Change Password' button is located at the bottom right of the form.

1. Click the Member Settings icon (in Header Navigation)
2. When the menu expands, select Password (within the Profile menu)
3. Enter your current password for verification
4. Enter your new password
5. Confirm password by entering it again
6. Click “Change Password” button to save

THE CHALLENGES

There are 2 ways that a user can navigate to the Challenge Pages:

On the Main Landing Page, click any of the three Challenge Summaries.



Agriculture and Forestry

What solutions do we need to implement to address forest ecosystem challenges to help support healthy forest ecosystems, and the byproducts they produce, to make a healthy planet? How can citizen scientists around the world be engaged to collect data from their communities? [READ MORE >>](#)

On the My Ideas Page, click any of the three Challenge Areas in the right sidebar.

Challenges

All Ideas

-  **Education**
Expires on 01/31/2017
-  **Technology and Robotics**
Expires on 01/31/2017
-  **Agriculture and Global Warm...**
Expires on 01/31/2017

THE CHALLENGE PAGE

Student-Led Ideation Challenge (SLIC)
Agriculture and Forestry Ecosystems

WELCOME MY IDEAS

Submit New Idea

Agriculture and Forestry Ecosystems

What solutions do we need to implement to address forest ecosystem challenges to help support healthy forest ecosystems, and the byproducts they produce, to make a healthy planet? How can citizen scientists around the world be engaged to collect data from their communities?

Download the Forestry Ecosystems Challenge (PDF)

MORE DETAILS

Search Ideas

Challenge Activity

- 0 Ideas Posted
- 0 Comments
- 0 Votes

M Michelle Chance
Challenge Owner

CHALLENGE TEAM

Challenge Funnel

ALL STAGES 0 IDEAS

[SUBSCRIBE TO CAMPAIGN]

My Ideas ▾

There are several important areas on this page that will assist in navigating through the site:

1. Click on “Submit New Idea” to create a new student team Idea. (From this Challenge Page, the Submission Form that you see next will be pre-populated with this specific Challenge Question.)
2. Click “Download the Forestry Ecosystems Challenge (PDF)” to receive a PDF version that you may share with students, parents, etc. (other Challenges will be labelled similarly)
3. Click on “More Details” to read the complete Challenge (see image on following page, including a long description with Challenge-specific criteria. This link will not jump to a new page; instead, the current page will expand down below to include the additional Challenge details.)
4. Click on “My Ideas” to see a list of your student teams’ Ideas for the specific Challenge Area you are viewing. To see all of your student teams’ Ideas, click on “All Ideas” found in the right rail.

THE CHALLENGE BRIEF

CHALLENGE BRIEF

Protecting our Forests and Monitoring our Land Use

Overview and Background

The Earth's soils are the foundation for humanity's future and are critical for producing healthy forests. Soil supports forests, urbanization, agriculture and many other land uses. It is critical for society as a whole to recognize that we need healthy forests and soil to support all of the land uses upon which humans rely.

We need to understand and define the state of health of our forested lands — such as what is living in it — and inventory what is growing in these areas.

Globally, tens of thousands of acres of soil each year become so degraded they can no longer sustain life. We continue to lose forested land acreage which is vital for overall planetary health. This Challenge aims to study Earth's forests and their dependence on a healthy soil system. By finding ways for citizen scientists to collaborate — throughout the country and around the world — on ideas about healthy forests, then, information about their ecosystems can be shared. This will ultimately raise awareness of their critical impact upon our Earth.

Problem Statement

The United States represents a combination of extremes — highly urbanized areas surrounded by much larger expanses of agricultural and forested open space. The Commonwealth of Virginia is just one example of this, with pockets of cities skirted with suburbs that are surrounded by the vast Appalachian Mountain Range and farmlands.

Humans rely upon healthy forest ecosystems for products like clothing, paper, lumber, and even water via our watershed systems. In fact, two out of three Americans get their drinking water from a forested watershed every day. Water, a commodity that we can't live without, is perhaps the most important "forest product."

Despite the degradation of our soil and the loss of lands that support our forests, the damage is reversible. In an era when climate change and the need to find ways to reduce carbon being released into the atmosphere is a dominant global issue — even in highly forested areas — collectively we can discover and enable new ways to find solutions to these very important problems. Potential areas for change could include finding new consumer uses for our forests (such as Torrefied wood) as a natural energy resource, and better monitoring of our forest ecosystems' health. Increased citizen participation and the exploration of new approaches to elevate effective land use and forest sustainability could be beneficial in actually lowering the Earth's temperature, while at the same time providing fresh water ecosystems.

Challenges

All Ideas



Education

Expires on 01/31/2017



Technology and Robotics

Expires on 01/31/2017



Agriculture and Forestry Ecology

Expires on 01/31/2017

[Manage Campaigns]

NEED HELP?

Check the [FAQs](#)

or

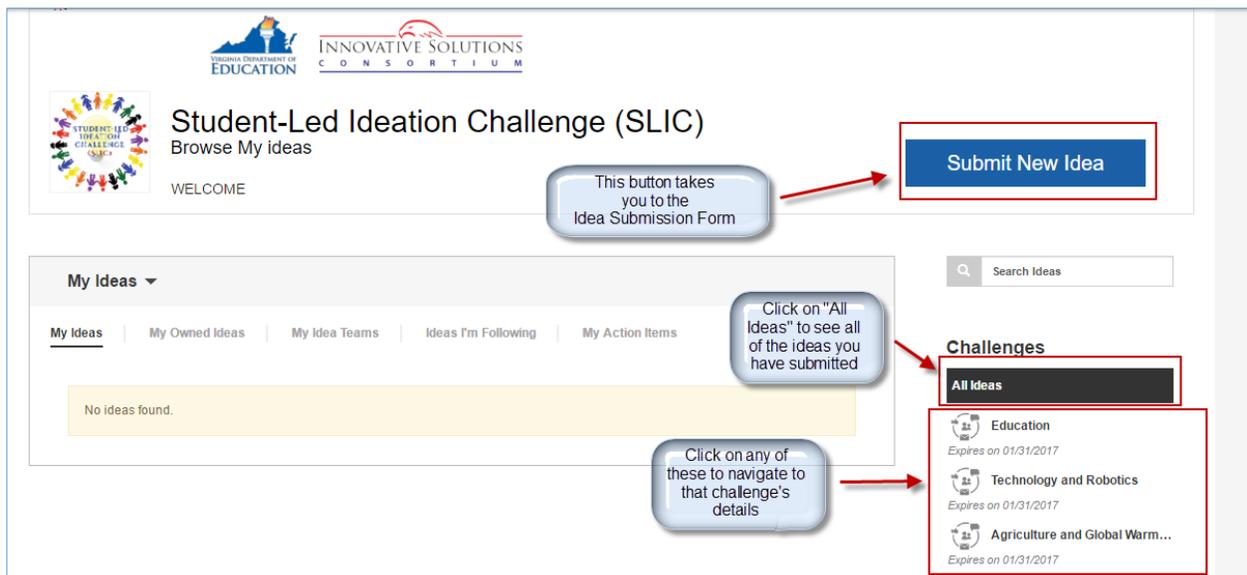
Contact the SLIC Support Team
support@slic-solutions.com



CREATING IDEA PAGES

Submitting an Idea

As a teacher, one of the main tasks is to submit the student teams' responses to the Application Questions. The My Ideas Page will serve as a repository of all their ideas and submissions. From the Landing Page, select the "My Ideas" navigational icon and it will take you to the My Ideas page. From here you can browse all the Ideas, submit new Ideas, and link to the Challenges. Here is an example of a **Blank My Ideas Page**.



Note: It is helpful to mention that each time the user scrolls down past the "Submit New Idea" button, a "Submit New Idea" icon appears in the Header Navigation area for convenience.



As soon as the teacher knows who the teams are and which Challenge they want to work on, an Idea Application can be started. If you submit an Idea via the “Submit New Idea” button, the form will not be pre-populated with a Challenge selection. That’s ok, you will just simply have to select the Challenge from the dropdown list. After a Challenge is selected, the Application Questions will display. Here is an example of an **Idea Submission Form (prior to selecting a Challenge)**.

Submit Your Idea

*Required fields

Team Name*
Bulldog Blues
115 characters left in Team Name field

Title*
Customized Small UAV with Asymmetrical Cameras

Challenge*
-- Please Choose --
-- Please Choose --
Education
Technology and Robotics
Agriculture and Global Warming

Upload Student Team Tasks/Docs (PDFs) (Optional)
Browse File
Maximum upload size 100 MB

Challenges

All Ideas

Education
Expires on 01/31/2017

Technology and Robotics
Expires on 01/31/2017

Agriculture and Global Warm...
Expires on 01/31/2017

[Manage Campaigns]

NEED HELP?
Contact the SLIC Support Team
support@slic-solutions.com

powered by
ideascale

The following information is required when submitting a new Idea:

1. Team Name
2. Title of the Project
3. The Challenge Area (dropdown list). When you choose the Challenge, the associated questions will generate on the right-hand side of the form.
4. School Name (dropdown list). If it is not here, remove all symbols and characters (e.g., ampersands, periods, apostrophes, parentheses, etc.), type the school name in all lowercase letters and replace spaces with a dash.

Example: stone-bridge-high

These 4 fields are mandatory and must be completed before you click “Save.” If you have additional content, you may upload it at this time.

On the other hand, if you first selected a Challenge prior to clicking Submit an Idea, the **Idea Submission Form (with Challenge selected)** will be shown. In this instance, the chosen Challenge Area, as well as the Application Questions, will already be generated. After you fill in the required fields (team name, title, school name) click “Save,” or if you have additional content, you may upload it at this time.

Submit Your Idea

Complete This Form by 11:59pm ET, Jan 31, 2017

*Required fields

Team Name*

Sample 2
120 characters left in Team Name field

Title*

Mine's better

Challenge*

NOTES:
Changing campaign will lose campaign specific custom fields data.

School Name (Predefined Tag Enabled)*

Select Predefined Tags

Upload Student Team Tasks/Docs (PDFs) (Optional)

Browse File
Maximum upload size 100 MB

Which Technology & Robotics challenge option would your Team like to focus on?:

1. What is your idea (solution) to solve this problem? Using communication and critical thinking skills, formulate a hypothesis within your teams that solves your challenge question. :

Suggested Deadline: Nov 1, 2016

2. How will your solution help solve this problem? Describe in detail how your solution solves the problem. Write a summary paragraph and include a visual representation of your idea as indicated on the assessment rubric. :

Suggested Deadline: Nov 1, 2016

3. Who will benefit from your solution and why? Using the profile template, identify your audience and create a user profile describing who will benefit from your solution by completing each required section. :

Suggested Deadline: Nov 1, 2016

4. How will you do this? Develop an action plan and flow chart that illustrates the steps/processes needed to accomplish your proposed solution, in detail, as indicated on the checklist (include what you are building and how you will perform these tasks). :

Suggested Deadline: Nov 1, 2016

5. Take the steps from the previous question, and put them in order with estimated times that it will take to complete each step. Using your action plan, create a Gant Chart that illustrates milestones, major steps, and sub-steps for the proposed solution with the provided Gant Chart template. :

Suggested Deadline: Nov 1, 2016

6. What do you think the most difficult tasks will be in creating your solution and prototype/pilot program? Using your action plan, generate a list of tasks itemizing all potential problems and related solutions with the provided template. :

Suggested Deadline: Nov 1, 2016

Suggested Deadline: Nov 1, 2016

9. What resources (i.e.: equipment, people, money, physical space/environment, etc.) will you need to build your solution and prototype/pilot program? Given your proposed solution, make a list of required resources needed to build your prototype/pilot on the template. :

Suggested Deadline: Nov 1, 2016

10. How will your new solution be measured for success to prove that it is better than the other solutions? Analyze the solution and design a report that explains the measure(s) proving your solution is better than other solutions as indicated on the assessment rubric. :

Suggested Deadline: Nov 1, 2016

Search Ideas

Challenges

All Ideas

Education
Expires on 01/31/2017

Technology and Robotics
Expires on 01/31/2017

Agriculture and Global Warm...
Expires on 01/31/2017

NEED HELP?
Contact the SLIC Support Team
support@slic-solutions.com

powered by
ideascale

Once you click “Save,” you will be directed to the **Idea Submitted Page**. At this point, the team submission will be added to the My Ideas Page, but it will not be submitted to the Evaluators and it can still be edited up until midnight on Dec. 9, 2016 for Phase I and midnight Feb. 24, 2017 for Phase II.

The screenshot displays the SLIC website interface. At the top, a navigation bar includes the SLIC logo, a 'communities' dropdown, and user information for 'Michelle Chance'. A blue banner at the top center reads 'Your idea has been submitted!'. Below this, the main header features the Virginia Department of Education logo and the text 'INNOVATIVE SOLUTIONS CONSORTIUM'. The main content area is titled 'Student-Led Ideation Challenge (SLIC)' and includes a 'Submit New Idea' button. The central focus is a submission card for the idea 'Customized Small UAV with Asymmetrical Cameras', submitted by 'stone-bridge'. The card includes a 'votes' section with a 'Moderate Idea' button and 'Idea No. 11'. To the right, a sidebar contains a 'Search Ideas' box and a list of campaign categories: 'Education', 'Technology and Robotics', and 'Agriculture and Global Warm...', each with an expiration date of 01/31/2017. A 'NEED HELP?' section at the bottom right provides contact information for the SLIC Support Team.

MY IDEAS PAGE

The screenshot shows the 'My Ideas' page in the SLIC platform. At the top, there is a navigation bar with the SLIC logo, 'communities' dropdown, and user profile 'Michelle R. Chance'. Below this is a header for the 'Student-Led Ideation Challenge (SLIC)' with logos for the 'VIRGINIA DEPARTMENT OF EDUCATION' and 'INNOVATIVE SOLUTIONS CONSORTIUM'. A 'Submit New Idea' button is visible on the right. The main content area is titled 'My Ideas' and includes a search bar and navigation tabs: 'My Ideas', 'My Owned Ideas', 'My Idea Teams', 'Ideas I'm Following', and 'My Action Items'. Two idea cards are displayed. The first card is for 'TECHNOLOGY AND ROBOTICS' with a 'Sample 2' title, submitted on '15th Sep', and a '1 vote' counter. The second card is for 'TECHNOLOGY AND ROBOTICS' with a 'Sample 1' title, submitted on '15th Sep', and a '1 vote' counter. A 'Challenges' sidebar on the right lists 'All Ideas' with categories: 'Education', 'Technology and Robotics', and 'Agriculture and Global Warm...'. The page is powered by 'ideascale'.

The **My Ideas Page** (shown above) becomes a repository of individual team submissions. A teacher can look at this page and be able to see an overview for each student team which includes:

1. Challenge
2. Team name (links to the Team Page)
3. Idea Title
4. Date of the last submission

EDIT AN IDEA

From the My Ideas Page (shown in the previous page), click on a team name and you will jump to the **Team Ideas Page** (see below). Click “Edit” to edit the details of the team’s Idea Submission Form.

From the Team Ideas Page, you can scroll through the Team Ideas Pages one by one, making it easy to edit multiple teams’ submissions at once.

The screenshot displays the SLIC platform interface. At the top, the header includes the SLIC logo, the text "Student-Led Ideation Challenge (SLIC)", a "WELCOME" message, and a "Submit New Idea" button. Below the header, a navigation bar shows "1 OF 2" and a "NEXT IDEA" button with a right-pointing arrow. A callout box with a blue border and white background contains the text "To move from one Team Idea page to the next" with a red arrow pointing to the "NEXT IDEA" button. The main content area features a category "TECHNOLOGY AND ROBOTICS" and a "Sample 2" idea. The idea title is "Mine's better", submitted by "You" on "15th Sep". There are buttons for "[Follow]" and "[Edit]", with a red arrow pointing to the "[Edit]" button. Below the idea title is a "VOTING DISABLED" box showing "1 vote". At the bottom of the idea card, it says "Idea No. 4". To the right of the main content is a search bar labeled "Search Ideas" and a "Challenges" section with three items: "Education" (Expires on 01/31/2017), "Technology and Robotics" (Expires on 01/31/2017), and "Agriculture and Global Warm..." (Expires on 01/31/2017). Below the challenges is a "NEED HELP?" section with contact information for the SLIC Support Team. At the bottom right, it says "powered by ideascale" with the Ideascale logo. The footer contains copyright information: "Copyright © 2016 IdeaScale Feedback Software | Contact | IdeaScale Privacy Policy | IdeaScale Cookie Policy".

All fields are editable on the **Idea Submission Form**. You can edit any of the general team information, upload new responses, and delete old ones. Once you are done with your changes don't forget to click "Save"!


communities ▾






Student-Led Ideation Challenge (SLIC)

Ideas

WELCOME

[Submit New Idea](#)

Submit Your Idea

Complete This Form by 11:59pm ET, Jan 31, 2017

*Required fields

Team Name

115 characters left in Team Name field

Title

Challenge

School Name [Predefined Tag Enabled]

Upload Student Team Task/Docs (PDFs) (optional)

Maximum upload size: 100 MB

1. Select the challenge you want to solve, form a team, and decide upon team member roles needed for successful collaboration and complete the template provided. :
Suggested Deadline: Nov. 3, 2016
2. What is your idea (solution) to solve this problem? Using communication and critical thinking skills, formulate a thesis within your teams that solves your challenge question. :
Suggested Deadline: Nov. 9, 2016
3. How will your solution help solve this problem? Describe in detail how your solution solves the problem. Write a summary paragraph and include a visual representation of your idea as indicated on the assessment rubric. :
Suggested Deadline: Nov. 15, 2016
4. Who will benefit from your solution and why? Using the profile template, identify your audience and create a user profile describing who will benefit from your solution by completing each required section. :
Suggested Deadline: Nov. 18, 2016
5. How will you do this? Develop an action plan and flow chart that illustrates the steps/processes needed to accomplish your proposed solution. In detail, as indicated on the checklist (include what you are building and how you will perform these tasks). :
Suggested Deadline: Dec. 2, 2016
6. Take the steps from the previous question, and put them in order with estimated times that it will take to complete each step. Using your action plan, create a Gantt Chart that illustrates milestones, major steps, and sub-steps for the proposed solution with the provided Gantt Chart template. :
Suggested Deadline: Dec. 8, 2016
7. What do you think the most difficult tasks will be in creating your solution and prototype/pilot program? Using your action plan, generate a list of tasks itemizing all potential processes and related solutions with the provided template. :
Suggested Deadline: Dec. 13, 2016
8. Based on your research, did you find any other solutions similar to what you are proposing? Given your proposed solution, conduct research, compare and contrast existing solutions, and compose a comparative essay with visuals and citations as indicated on the assessment rubric. :
Suggested Deadline: Jan. 11, 2017
9. What resources (i.e., equipment, people, money, physical space/environment, etc.) will you need to build your solution and prototype/pilot program? Given your proposed solution, make a list of required resources needed to build your prototype/pilot on the template. :
Suggested Deadline: Jan. 11, 2017
10. How will your new solution's success be measured? Analyze the solution and design an assessment instrument (AKA a measurement tool or recording document) that allows for a collection of data to be recorded and used for measuring and proving your solution is better than other solutions as indicated on the checklist. :
Suggested Deadline: Jan. 18, 2017
11. In a 30-second video, please summarize your solution. In terms of your challenge area, why should it be chosen as the most impactful and innovative idea? Using your research, produce and publish a 30-second video that summarizes your solution, emphasizing its impact and innovation as indicated on the checklist. (1:25) : id: http://www.youtube.com/watch?v=Mf0ny31qQM
12. In a 30-second video, please summarize your solution. In terms of your challenge area, why should it be chosen as the most impactful and innovative idea? Using your research, produce and publish a 30-second video that summarizes your solution, emphasizing its impact and innovation as indicated on the checklist. (1:25) : id: http://www.youtube.com/watch?v=Mf0ny31qQM
13. Review all of your responses, make edits, and resubmit your Final version for the competition. (Suggested Deadline: Jan. 29, 2017 to allow teachers time to upload everything) :
Deadline: Jan 31, 2017

Search Ideas

Challenges

All Ideas

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-  Technology and Robotics
Expires on 01/31/2017
-  Agriculture and Forestry Eco...
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SLIC Platform Highlights

UPLOAD QUESTION RESPONSES

Upload documents into the Idea Submission Form. You may upload student team documents at any time up until the deadline at midnight on Dec. 9, 2016 for Phase I and midnight on Feb. 24, 2017 for Phase II. Any file format is acceptable, but we suggest and highly recommend you upload a PDF(s).

Upload Student Team Tasks/Docs (PDFs) (Optional)

Browse File

Maximum upload size 100 MB

A list of uploaded files appears on the page (see below). If at any point you want to delete a previously uploaded file, just simply click the "X" to the right of the file name.

Upload Student Team Tasks/Docs (PDFs) (Optional)

q2_bulldog_blues.docx	x
q3_bulldog_blues.pdf	x

Browse File

Maximum upload size 100 MB

The next time you log into the SLIC Platform, the list of previously uploaded files will look a little different (see below). Browse and delete files in the same manner.

Upload Student Team Tasks/Docs (PDFs) (Optional)

Browse File

Maximum upload size 100 MB

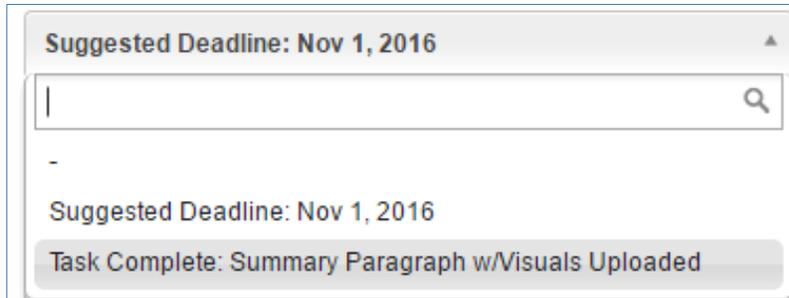
	q2_bulldog_blues-901070.docx on Monday	Delete
	q3_bulldog_blues-99e041.pdf on Monday	Delete



Note: When uploading files, please label each response with the team name and Application Number, all lowercase, so there will be no confusion on who presented it and which question the response is for.

Example: q2_bulldog_blues.pdf

For Questions #1 through #3 and #5 through 9, there is a dropdown menu with a suggested deadline. After a student has submitted their response to each one of these questions, and the file with the response has been uploaded, change the “Suggested Deadline” to “Task Complete.”



For Questions #4 and #10, upload the presentation or, if applicable, upload the YouTube™ video and set to private. For instructions on uploading your video, see www.wikihow.com/Upload-a-Video-to-YouTube. The private URL should be submitted to the teacher. Visit this link for directions regarding YouTube privacy settings: <https://support.google.com/youtube/answer/157177?hl=en-uk>

Prior to beginning on Question #10, teachers may download all of the responses for student teams to review and reflect upon in the creation of their final presentation (response to Question #10).

Teachers may also email out the incomplete or fully completed applications at any time to individuals that are deemed appropriate by the teacher (i.e.; students who wish to see their work; parents of those students; other school employees; etc.), based on privacy policy constraints.

Student-Led Ideation Challenge (SLIC)

WELCOME

Submit New Idea

← PREVIOUS IDEA 2 OF 6 NEXT IDEA →

EDUCATION

Bulldog Blues

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Learning Stations vs Classrooms

Submitted by You on Thursday

Last Edited by You 29 minutes ago [Show Revision History]

stone-bridge [Edit tags]

VOTING DISABLED

0 votes

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Idea No. 11

1. Select the challenge you want to solve, form a team, and decide upon team member roles needed for successful collaboration and complete the template provided. : Suggested Deadline: Nov. 3, 2016

2. What is your idea (solution) to solve this problem? Using communication and critical thinking skills, formulate a thesis within your teams that solves your challenge question. : Suggested Deadline: Nov. 9, 2016

3. How will your solution help solve this problem? Describe in detail how your solution solves the problem. Write a summary paragraph and include a visual representation of your idea as indicated on the assessment rubric. : Suggested Deadline: Nov. 15, 2016

4. Who will benefit from your solution and why? Using the profile template, identify your audience and create a user profile describing who will benefit from your solution by completing each required section. : Suggested Deadline: Nov. 18, 2016

5. How will you do this? Develop an action plan and flow chart that illustrates the steps/processes needed to accomplish your proposed solution, in detail, as indicated on the checklist (include what you are building and how you will perform these tasks). : Suggested Deadline: Dec. 2, 2016

6. Take the steps from the previous question, and put them in order with estimated times that it will take to complete each step. Using your action plan, create a Gantt Chart that illustrates milestones, major steps, and sub-steps for the proposed solution with the provided Gantt Chart template. : Suggested Deadline: Dec. 8, 2016

7. What do you think the most difficult tasks will be in creating your solution and prototype/pilot program? Using your action plan, generate a list of tasks itemizing all potential problems and related solutions with the provided template. : Suggested Deadline: Dec. 13, 2016

8. Based on your research, did you find any other solutions similar to what you are proposing? Given your proposed solution, conduct research, compare and contrast existing solutions, and compose a comparative essay with visuals and citations as indicated on the assessment rubric. : Suggested Deadline: Jan. 3, 2017

9. Based on your research, why is your solution better? Using your research, evaluate your solution and construct a persuasive essay detailing why your solution is better as indicated on the assessment rubric. : Suggested Deadline: Jan. 8, 2017

10. What resources (i.e. equipment, people, money, physical space/environment, etc.) will you need to build your solution and prototype/pilot program? Given your proposed solution, make a list of required resources needed to build your prototype/pilot on the template. : Suggested Deadline: Jan. 11, 2017

11. How will your new solution's success be measured? Analyze the solution and design an assessment instrument (AKA a measurement tool or recording document) that allows for a collection of data to be recorded and used for measuring and proving your solution is better than other solutions as indicated on the checklist. : Suggested Deadline: Jan. 18, 2017

13. Review all of your responses, make edits, and resubmit your Final version for the competition. (Suggested Deadline: Jan. 23, 2017 to allow teachers time to upload everything) : Deadline: Jan 31, 2017

Attachments - [Show all]

q2_bull... q3_bull...

Click on file icons to download attachments

Idea Details Comments [0]

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Follow these instructions:

1. Go to the Team Ideas Page
2. Scroll to the bottom of the page where a list of previously uploaded attachments appears
3. Click on an attachment and the selected file will open in your browser
4. Save the file to your local drive
5. Open your email application and attach the file(s)



THE CHALLENGE PROCESS, EVENTS & DATES

THE CHALLENGE PROCESS, EVENTS & DATES

The deadline for submissions for Phase I is midnight on December 9, 2016. Teachers must upload student teams' answers to Application Questions #1-#4 in support of Phase I into the Idea Submission Form by the deadline to be entered in the SLIC Competition. Ideas will be judged for their innovativeness based on the criteria specific to their Challenge. Teams will compete against others in their same category, i.e., education solutions will compete against other education solutions. Those teams selected as the Divisional Winners will **need to complete Application Questions #5-#10 by midnight on February 24, 2017, for Phase II** of the competition.

SCHOOL AND DIVISIONAL COMPETITION — ROUND 1

Round 1 of the Challenge will be decided via online tools within the SLIC Platform. Using the criteria documented in the Challenge Detail Pages, the judges will announce 3 winners per school and the 3 top winners per division, one winner per each Challenge category (education, agriculture, and technology/robotics). The 3 winners per division will advance to the Regional Competition.

***School and Divisional Winners will be announced December 22, 2016**

DIVISIONAL THINK TANK SESSIONS

All School and Divisional Winners are invited to attend their division's think tank sessions to come and share ideas and support their Divisional Winners. Additional team members may be added to the original team at that time.

***Divisional Think Tank Sessions to be held week of Jan 9, 2017; exact date to be decided by each division.**

REGIONAL COMPETITION — ROUND 2

The student teams at each of the 8 Regional Events in Virginia will compete in-person, in front of a live audience and panel of expert judges. At the Regional Competitions, each team should come prepared to do the following:

- Present their idea to an audience and panel of judges, using the 10-minute presentation they created. After the presentation, a Q&A session will follow.
- Produce a science fair-style table display that will be set up in an exhibition hall. The display will showcase the solution and representatives from the team should be prepared to talk about the solution to the public. At the conclusion of each event, the top 3 teams, one per category, will be selected as the Regional Winners. Since there are 8 regions, 24 teams will advance to the State Competition.

***Regional Competitions will be held March 1-10, 2017 (8 single-day events)**

STATE COMPETITION — ROUND 3

The 24 Regional Winners will be expected to once again be prepared to present their idea to a panel of judges in front of an audience and answer questions, as well as display their solution in an exhibition-style manner. The 24 teams will be competing for one of 3 of the "Best SLIC Idea – 2017" awards, which will be presented to the top 3 teams for their innovative ideas (one for each category).

- The top **3 State-winning teams** will receive the award "Best SLIC Idea – 2017" as well as:
 - A \$3000 team scholarship
 - The opportunity to build out their idea into a prototype with the assistance of industry and academia leaders in their Challenge area
 - A private audience with the Challenge area stakeholders and other industry and government agencies interested in the student team's solution, where the team will be able to demonstrate their solution in action
- There will also be **6 supporting awards**, 2 for each Challenge Area at the State Event (award categories TBD). These teams will be presented with:
 - A \$1500 team scholarship
 - The opportunity to build out their idea into a prototype with the assistance of industry and academia leaders in their Challenge Area
 - A private audience with the Challenge Area stakeholders and other industry and government agencies interested in the student team's solution where the team will be able to demonstrate their solution in action
- All **teacher sponsors of Regional Winners** will receive a \$500 award — to be used in their classrooms for future project-based learning activities — in appreciation and recognition of their dedication to the SLIC Program.

***State Competition will be held between March 27-31, 2017 (single-day event), specific date TBD**



Important: Exact dates and locations for the Regional Events and the State Event will be announced shortly. Updates will be emailed to everyone registered in the SLIC Program, and posted on the VDOE website.