



## **MIT-THINK SCHOLARS PROGRAM**

### **BRINGING HIGH SCHOOL STUDENTS' IDEAS TO LIFE**

#### **MIT THINK Scholars Program 2018-19: Complete Guidelines**

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##### **Overview**

The THINK Scholars Program is an educational outreach initiative that promotes science, technology, engineering, and mathematics by supporting and funding projects developed by high school students. The program is run by a team of undergraduate students at the Massachusetts Institute of Technology (MIT) and sponsored by technology companies and educational organizations. The program is open to all high school students residing in the United States. Students apply to the program by submitting a proposal for any novel science, technology, or engineering idea.

For the 2019 program, we will select up to six finalists, all of whom will receive an all-expenses paid trip to MIT, as well as mentorship and funding for the projects. After the completion of the projects, three of the winning participants will receive additional scholarships.

##### **Finalists receive:**

- All expenses paid trip to MIT that includes:
  - Attendance to XFair (MIT's spring tech symposium)
  - Personalized tours of MIT laboratories
  - Networking opportunities with MIT professors and XFair companies
- Up to \$1000 to build their projects
- Project mentorship from MIT students

## Winners receive:

- Scholarship money
  - \$500 for Grand Prize Winner
  - \$300 for Second Place
  - \$200 for Third Place

We will also select several Honorable Mentions to recognize outstanding proposals submitted to the program that were not selected as finalists.

## Timeline

<b>Application Deadline</b>	<b>Jan. 1, 2019</b>
<b>Finalist Decisions</b>	<b>Mid-Jan. 2019</b>
<b>Finalists' Trip to MIT</b>	<b>Feb. 2019</b>
<b>Expected Completion of Projects</b>	<b>June 2019</b>

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## General Requirements

- You must be a full-time high school student attending a public, private, or home school at the time of your application.
  - You must be a U.S. resident during the 2018–2019 school year.
  - One submission per applicant
  - One or two students per project
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## Application Process

Applying for the THINK Scholars Program is a simple process:

- **Register:** create an account using your email address and some basic information.
- **Find a team:** You can work alone, or work with a partner.

- **Submit your proposal:** upload a document describing your idea, goals, and implementation procedure (see guidelines section below).
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## Proposal Guidelines

You must adhere to the below format strictly. Please make sure all components listed below are addressed and clearly presented in your PDF submission. Failure to follow this format may result in an invalid application.

The paper should be in 12-point Times New Roman or Arial font, double-spaced (1.5 not allowed), 1 inch margins, and no more than 10 pages. Please include references used at the end (see References below for more details). All images/diagrams that you did not create yourself should be cited.

The paper should also be divided into sections for readability. We suggest a title and abstract to begin the proposal, the first section for motivation and your approach or solution, the second section for project logistics and organization, and the third section for personal interest. We will only read the material you present in your proposal and will not evaluate information contained in external links included in the paper.

### 1. PROJECT TITLE

- **Name:** your name(s), school
- **Mentor (optional):** name, email address, affiliation (company, organization, school, university)

### 2. ABSTRACT

Write an accurate, interesting, and concise abstract for your project in up to 250 words. In paragraph form, please describe the following aspects of your project:

- **Motivation:** What is the need or problem you are trying to solve?
- **Goals:** What are the desired outcomes of your project?
- **Approach:** How do you plan to implement your project idea?

For a good how-to guide on writing an effective abstract, please consult the following website (<http://users.ece.cmu.edu/~koopman/essays/abstract.html>).

### 3. IDEA

- **Problem:** Clearly identify the need or problem that you are trying to solve. Then explain any relevant background information, including scientific theory and existing technologies.
- **Current Work:** Identify the current state-of-the-art approaches/solutions, and why they are insufficient.
- **Solution:** Describe your proposed solution and how it will address the need or problem. Compare your idea to existing solutions and show us why this solution is technically feasible.

### 4. PLAN

- **Approach:** Explain the steps for how you will implement your project idea. Convince us that your project is feasible. Show calculations and be sure to include diagrams if necessary.
- **Resources:** Specify the resources you will need during the whole process. How will you acquire these resources? Are you planning to work with a local mentor?
- **Goals:** Establish milestones and completion criteria for your project. How will you test and evaluate your implementation? What are its performance specifications, if applicable? If you are working in a two-member team, discuss how you plan to divide the work and responsibilities and how you will facilitate collaboration.
- **Risks:** Identify three issues you might encounter during implementation. How will you mitigate these risks? Propose some alternative solutions.
- **Timeline:** Identify key deliverables and deadlines. How will you document the implementation process between these milestones?
- **Current Progress and Need for Funding:** Describe any previous work you have done on this topic. How will the funding from the THINK program allow you to achieve your proposed goals?
- **Projected Budget:** Table with columns: Item, Amount, Cost, etc. Include links to exact costs if you can find them. If you are unable to find exact costs, please estimate to the best of your ability.

### 5. PERSONAL

- **Interest:** Write about your background and personal interest in this project.

- **Qualifications:** Describe the skills you have and skills you need to learn to complete this project.

## 6. REFERENCES

- **Cite all sources consulted using the APA format.** Include both in-text citations and a Works Cited page at the end of the paper. The Works Cited page(s) will not count as part of the page limit for the proposal.

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## Judging

A panel comprising MIT undergraduates will review the applications based on the following criteria:

- **Impact:** How interesting and relevant is the identified problem?
- **Innovation:** How original or creative is the proposed solution? How does it improve upon existing solutions?
- **Clarity:** Are the goals and timeline clearly defined? Can the results be clearly evaluated?
- **Feasibility:** Can the stated goals be accomplished within the time, cost, and resource constraints?
- **Benefit:** How much will this project benefit from THINK funding?

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## Finalists Trip

After judging is complete, up to 6 proposals will be chosen to participate as Finalists in the THINK Scholars Program and invited to MIT for the Finalists' Trip. You will be invited to MIT to attend XFair, meet the THINK team, institute professors, program sponsors, and other selected students. All finalists will be given funding and mentorship to complete their projects. After completion of these projects and submission of a final report, up to three of the finalists will be chosen as winners and receive additional scholarships.

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## Implementation

While you implement your project idea, we will maintain an active relationship with you. We will provide you with funding, mentorship, and networking opportunities with sponsors, MIT students, faculty, and alumni. In return, we expect that you document the whole process online in the form of reports, photos, and videos. Documentation should show the successful completion of milestones and goals, and any difficulties or challenges encountered along the way. Your project experience will be shared with our sponsors and our community. In addition, we will hold regular phone or web conferences to check on your progress, provide advice, and teach you some useful skills.

By the end of the spring semester, you will let us know how you fulfilled the completion criteria – for example, a video demonstrating what you successfully created or a technical paper with all of your data elaborating what you have found. At that point you will receive the THINK scholarship, and the team with the best project will be designated the Grand Prize Winner.

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## FAQs

### **When is the application due?**

11:59pm ET on Jan 1, 2019.

### **Can my proposal be longer than 10 pages?**

Unfortunately, no. Additional pages can only contain references.

### **I am in a team of two. How do we create an account for two people?**

Create separate accounts, fill in the application information individually, and submit the same proposal at the end.

### **I am an International Student. Can I still apply?**

Unfortunately, we currently only accept applications from high school students living in the U.S.

### **Who judges these applications?**

The THINK Team.

**How will I know if I won?**

Winners will be posted on our website in mid-January. They will also be contacted by email.

**Where can I send my other questions?**

Please send them to [think@mit.edu](mailto:think@mit.edu).

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**Program Vision**

THINK's vision is to make science and technology research and development accessible to all motivated high school students.

Our philosophy is that although students at the high school level may not have the knowledge or experience of a college-educated professional, many of them certainly have the creativity and passion to make significant contributions to science and technology. We hope to share with these students the resources and connections that we have at MIT and in industry.

Rather than simply recognizing high school students with completed projects, we would like to support and encourage students who wish to implement their ideas. Accepted students will receive seed funding, mentorship from the THINK team, and advice from MIT professors and industry professionals.

The human aspect is where THINK differs from typical competitions. In a results-oriented world, the process is often understated, even though it is typically the most challenging and arduous part of a project. This is where the guidance and support of others can be immensely beneficial to an aspiring scientist or engineer. While nothing can replace parents and teachers, we hope to provide students with an external support network that will guide them in their endeavors.

We hope THINK will be an inspirational experience that helps to nurture the next generation of young innovators and shows them that any project idea can be realized with innovation, networking, and knowledge.