LEMELSON-MIT InvenTeams®

InvenTeams Grant

Application Information

2022-2023 Lemelson-MIT InvenTeam Grant

Application Deadline: September 6th, 2022

Start your application today!

The Lemelson-MIT InvenTeam® initiative offers an unparalleled opportunity for high school students to cultivate their creativity and experience invention.

InvenTeam students rely on inquiry and hands-on problem solving as they integrate lessons from science, technology, engineering, and math (STEM) to develop invention prototypes. Interactive, self-directed learning coupled with STEM curricula are essential for experiencing invention.

Students learn to work in teams, while collaborating with intended users of their inventions. They partner with organizations in their communities to enrich their experiences. Most of all, students learn to move forward through challenges and celebrate "Eureka!" moments.

After the InvenTeam experience, inventive cultures often continue to prosper at schools through further development of InvenTeam prototypes or the pursuit of new invention projects. You can learn more about the community impact by reading our case studies.

Invention Cycle

As a grants initiative, InvenTeams work on a yearly cycle. The grant period runs from October - June corresponding with the academic year. Each InvenTeam creates an individual path due to project variation, but most experience the cycle through three phases:

Concept phase

- Gather additional research about users' needs, competitive products, and existing patents
- Brainstorm ideas for appropriate solutions

Design Phase

- Conceptualize several solutions
- Investigate the feasibility of each solution
- Select the best solution · Create a detailed design using tools, such as SolidWorks 3D CAD software · Determine materials and resources, considering Sustainable Design

Build Phase

- Construct and test prototypes
- Field test prototypes
- Build alpha prototype

Expectations
InvenTeams access information and resources through a private portal on the Lemelson-MIT Program's website where they also manage their finances and submit reports. Lemelson-MIT Program representatives may visit InvenTeams during the grant cycle.

1. All teams are expected to present and showcase a working prototype of their invention at EurekaFest in June of their grant year on MIT's campus.

2. All teams are expected to hold a mid-grant technical review to demonstrate their progress and gather important feedback from beneficiaries and community stakeholders.

3. All teams are expected to comply with the administrative guidelines outlined by the Lemelson-MIT Program, which include financial reporting, adhering to program deadlines, and external communications.

4. Commitment from the educator(s) and school administration to continue discussions and collaboration with Lemelson-MIT after the InvenTeam year

Reporting and Documenting Work
InvenTeams post updates and share photos and videos of their work on each InvenTeam's webpage on the Lemelson-MIT site. Many will also engage the media and use social media to publicize significant milestones. InvenTeams have two major milestones to report progress on their invention:

1. **Mid-Grant Technical Review:** InvenTeams host open houses in February to show the technical progress to mentors, technical experts, and users. This is a mandatory deliverable for each team.
2. **Final Summary Presentations and Reports:** InvenTeams present a summary of their work at EurekaFest. Presentation sections include: motivation, technical overview, team process, and next steps.

EurekaFest-Celebrating the InvenTeam Experience
Every June, students, teachers, and mentors representing each InvenTeam take part in Lemelson-MIT Program's EurekaFest, a multi-day celebration of the inventive spirit. InvenTeams present and showcase their prototypes at EurekaFest's public exhibit. MIT faculty, Lemelson-MIT staff, MIT community members, and other teams offer feedback and inspiration during EurekaFest.

True success for each InvenTeam is students having fun throughout the grant cycle while collaborating to build a useful and unique device that positively impacts the lives of others.

Up to 8 teams nationwide will be selected for the 2022-2023 school year as InvenTeam grant recipients. Some teams may be selected to do an interview during the application judging process. Selected teams will be notified.

Application: Due September 6, 2022

The initial application for the 2022-2023 school year includes:

1. Educator information, including information for a secondary educator
2. School and community information
3. School administrator's letter of support for Educator's application
4. Team information
5. Invention Proposal (completed by students with guidance from the educators)
    - Background research including a patent search
    - Invention project description
    - Project and team organization plan
    - Budget to build the invention
    - Community engagement plan
    - Team photo
    - Special consideration (optional)

Applications are assessed on project planning, student organization, and potential for community partnerships and other types of collaboration. A strong application is sophisticated and prepared with student assistance. It demonstrates the educator's ability to facilitate a self-directed, hands-on learning project that spans an entire school year and the potential to expand invention education in the school community. The letter of support from the school's administration should enthusiastically endorse the educator and the potential of an InvenTeam opportunity for the school as well as a commitment to continue invention education initiatives beyond the InvenTeam year.

Teams of two or three educators are encouraged, but a lead educator must be designated for a team.

- Educators are expected to document school and community support for year-long invention projects and the ability to identify and solve real-world problems with a team of students.
- Applying educators will have access to training webinars, coaching, and technical support in order to develop a competitive final application.

Grantee Selection Process
A panel comprising inventors; educators; InvenTeam student alumni; and MIT faculty, staff, and alumni reviews the applications. Diversity is considered among school types, community demographics, and project themes.

Youth Involvement
Youth involvement is required for part of the application process. There must be evidence of youth input in the invention proposal section of the application. Many educators recruit youth early to develop a stronger proposal for the initial application.

Invention Ideas
InvenTeam projects span many fields like assistive devices, environmental technologies, consumer goods, wearable technology and more. Inventors are encouraged to identify important problems in their own communities. Local problems tend to highly motivate youth as they create technological solutions to improve the lives of others.

Review past InvenTeams and their invention projects for inspiration.

2022-2023 InvenTeam Grant Timeline

- Application opens: **July 15, 2022**
- Application webinar: **July 26, 2022**
- Initial application deadline: **September 6, 2022**
- Up to 8 InvenTeams announced: **October 2021**
- Invention development by InvenTeam grantees: **October 2022-June 2023**
- EurekaFest 2023 for InvenTeam grantees: **mid-June 2023**

Frequently Asked Questions

Who may apply for an InvenTeam grant?
Teams of 9th-12th grade students and their educator(s). Successful InvenTeams teachers usually have backgrounds in science, technology, engineering, and/or mathematics. Teachers from other disciplines may also apply. An educator and/or a school who has received an InvenTeam grant must wait three grant cycles before applying again.

What is the size of an InvenTeam?
Optimal size, 8-15 high school youth.

How many grants are available?
Up to 8 teams for the school year

How much is the grant?
Up to $7,500 each

How are the funds to be used?
Funds may be allocated for research, materials, and learning experiences related to the project. Funds may not be used to purchase capital equipment or professional services (e.g.: intellectual property legal protection, engineering services).

What about fellowships?
Educators who facilitate the project outside of the school day may allot up to $3,000 of an InvenTeam grant towards fellowships.

Who funds the InvenTeam initiative?
The Lemelson-MIT Program awards InvenTeam grants and manages the initiative. The Lemelson-MIT Program is funded by The Lemelson Foundation and is administered by the School of Engineering at MIT.
InvenTeams are encouraged to partner with organizations in their local community for additional donations and resources. Local partnerships are necessary to raise funds for the team to travel to EurekaFest and help sustain invention projects after an InvenTeam grant.

How many students participate on an InvenTeam?
An InvenTeam can be comprised of a small group of students (6-8) students, as an extracurricular activity, or an entire class. Teams with fewer than six students or more than 20 students can be challenging. Eight to 15 students on an InvenTeam are productive and manageable.

What is the educator's role on an InvenTeam?
The educator applies for the grant. The educator also recruits students, monitors funds, and supports students throughout the process. The educator is advised to work with students in the spirit of self-directed learning. Consider the educator as a coach on a sports team or director of a musical ensemble.

How may the grant be used?
The grant may be used to purchase materials and supplies necessary for the discovery process and expenses related to product development and team-building efforts (including snacks, meals, and team polo shirts). Funds may be used for an unrestricted teacher fellowship of $3,000 if the project is conducted as an extracurricular activity or club. Funds may not be used to purchase capital equipment such as computers, pay for professional services, or substitute educators.

What are the grantees' obligations to ensure funding throughout the cycle?
Each InvenTeam is required to submit progress and expense reports on scheduled dates throughout the grant's cycle, culminating with a summary presentation and report that details process and design, addresses the viability of its invention, and discusses next steps. Teams are responsible for submitting monthly blog posts to be posted on the Lemelson-MIT website. Each InvenTeam is also

required to present and showcase a working prototype of their invention during the Lemelson-MIT Program's annual EurekaFest event.

Does the Lemelson-MIT Program cover EurekaFest costs?

No. Travel expenses will require fundraising. The Program will cover room and board for eight team members (six students and two chaperones).

Is the InvenTeam initiative a competition?

No, the initiative is not a competition once grantees have been selected. The InvenTeam initiative relies on a collaborative approach to build problem-solving skills and foster creativity, which is essential to invent. InvenTeams display and discuss their prototypes with each other and award-winning inventors at EurekaFest.

How can InvenTeams receive external support?

InvenTeams are encouraged to seek industry, academic, or civic partners in their community to help implement their projects. Involving partners that have experience inventing can be invaluable. Lemelson-MIT Program staff will assist in identifying mentors, including MIT alumni, to help advise InvenTeams on their projects. The InvenTeam website provides resources and materials made available from partners.

How are InvenTeam applications evaluated?

Applications are evaluated relative to the capacity of the educator(s) and school to support the project and commit to growing invention education within their school community. Lemelson-MIT maintains its commitment to increasing diversity in the patent pool, therefore we prioritize working with schools that seek to do the same. The invention proposal section of the application is evaluated based on the inventiveness and feasibility of the proposed technical solution to a real-world problem. MIT professors and staff, inventors, researchers, entrepreneurs, and high school educators assess the applications.

How long have InvenTeam grants been awarded?

The Lemelson-MIT Program awarded its first InvenTeam grants to three New England high schools during the 2002-2003 school year. It became a national initiative during the 2003-2004 school year. On average, 15 InvenTeams receive funding each school year. 246 InvenTeams have been funded through the 2021-2022 grant cycle.

Who are Lemelson-MIT Program Expert Invention Teachers?

Expert Invention Teachers are a select group of experienced InvenTeam educators who provide peer-to-peer support for InvenTeam educators during their grant year. Read more about them here.