Improving STEM (Science Technology Engineering Mathematics) Education for K-12 Students in San Diego and Beyond

Dr. Lawrence Woolf
General Atomics Sciences Education Education Foundation
(President/Chair)

Lawrence.Woolf@ga-asi.com

May 24, 2022
Outline

• Brief history
  • GA education outreach
  • General Atomics Sciences Education Foundation (GASEF)
• GASSSS (GA Scientists/Engineers Supporting Science/Engineering for Students)
• TutorMate
• Supporting regional non-profits
• Connecting GA STEM expertise to the K-12 STEM education community
Education outreach initiated by Anne Blue and Pat Winter in 1992
Non-profit GA Sciences Education Foundation (GASEF) started in 1995
  • Support GA K-12 STEM outreach efforts
  • Fund K-12 STEM programs of regional non-profits
GASSSSS program started in 2010
TutorMate program started in 2017
Extensive Fusion Education Outreach Program
  • http://fusioned.gat.com
Some GASEF Educational materials
The General Atomics Sciences Education Foundation has been actively involved in improving K-12 science and engineering education since 1992 by providing outreach support to GA employees, funding STEM non-profit organizations, and developing educational resources.

The Foundation supports employees to engage in education outreach via the GASSSS program, where they can receive a charge number for up to 8 hours as well as reimbursement for up to $500 in STEM purchases per calendar year. For additional information, see the GASSSS Details and Application Form on the GASSSS web site.

General Atomics wins Air Force Association Citation of Honor for STEM education outreach programs.

Registration for the TutorMate program is now open! See details in the TutorMate section of the GASSSS page. Please register by 9/15/19.

On August 5th, the General Atomics Sciences Education Foundation announced that it has provided $43,000 in funding for 9 STEM non-profits and programs. Click here for more information about these recent awards and here for an archive of previous awards.

GA scientists have developed education modules, education presentations, hands-on materials, posters, and have published articles.

The Foundation provides a limited number of grants, mostly to regional science-related non-profits. Guidelines for requesting support are provided here.
GASSSS Program:  www.sci-ed-ga.org/gassss

• Open to all GA employees
• GASSSS has 2 components
  • Perform K-12 STEM activity
  • GASEF will provide
    • Up to $500 total yearly reimbursement for STEM purchases
    • Charge number for up to 8 hours yearly
• GA employee activity determined by the employee interacting with the teacher
  • Assist teacher in science activity
  • Perform demonstration
  • Talk about career
• Also hours support for college/university career mentoring/presentations
• Application form on GASSSS site
GASSSSS Addresses STEM Needs

• Expose students to scientists and engineers
  • Attract students into STEM careers
• Create community of interaction between teachers and scientists/engineers
• Provide real life examples
  • Demonstrate scientific and engineering practices
• Improve content knowledge of teachers
• Provide a mechanism for GA employees to help their communities
• Well received and supported by GA&A scientists and engineers
GASSSS growth (2020-2021 impacted by Covid)

GASSSS Participants per Year

- Number of GASSSS approved applicants
- Number of GASSSS completions


GASSSS Participants: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200

GA Scientists/Engineers Supporting Science/Engineering for Students (GASSSS) Program

Welcome!

Welcome to Education Outreach: Where to start if you don't know where to start.

GA employees can contribute their expertise and enthusiasm for science and engineering by participating in the GASSSS K-12 education outreach program. The Foundation will reimburse the employee for associated material purchases of up to $500 and provide a charge number for up to 8 hours per calendar year. For additional information, see the GASSSS Details and Application Form below.

For new GASSSS applications please always use the most recent GASSSS application form, which is shown below.

GASSSS

- GASSSS Details & Application Form (Doc)
- Media Consent Form for use of photos
- GASSSS Matchmaker – Matches GA Employees and Educators (PDF)
- GASEF-GASSSS Introduction (PDF)
- GASSSS Poster (PDF)
- Yearly GASSSS Participation and Funding (PDF)

TutorMate: Registration is not yet open for the 2021-2022 school year.

- Announcement on internal home pages
- TutorMate flyer
- Process flowchart for TutorMate participation (created by Connie Nickerson)
TutorMate:
Help a student learn to read by end of first grade

- GASEF partnership with TutorMate, leading on-line non-profit tutoring program
- TutorMate focus: fight long-term poverty by improving literacy of at-risk students (first grade)
- 2017-2018: completed: 27 participants
- 2018-2019: completed: 27 participants
- 2019-2020: halted in early 2020 due to pandemic
- 2020-2021: halted completely due to pandemic
- 2021-2022: completed: 17 participants

1. Registration is announced on internal home pages in ~October
2. Register at https://www.tutormate.org/register
3. Complete online background check
4. Complete training session
5. You are then assigned a student to tutor
6. Spend 30 minutes weekly reading with your student
TutorMate includes STEM

TutorMate combines literacy with STEM

What do we know about day and night? We know that we have day and night because Earth is always moving.

Why do we have day and night?

Materials scientists study matter. They use what they learn to make new products. These products help solve problems that have to do with food, buildings, medicine and transportation. This book will tell you about four new products created by material scientists.

What does a material scientist do?

What do we know about the Milky Way? We know that it is a galaxy. A galaxy is a very large group of stars.

Why is the Milky Way called a galaxy?

It all starts with literacy.
Funding Regional K-12 STEM Non-Profits

- Since 1999, GASEF has provided over $760,000 to mostly San Diego area STEM non-profits
  - Reuben Fleet Science Center, Big Brothers/Big Sisters, Expanding Your Horizons, San Diego Children’s Discovery Museum, FIRST Robotics of San Diego, San Diego Science Fair, San Diego Natural History Museum, Boys and Girls Clubs, Secondary Science Olympiad …
  - [http://www.sci-ed-ga.org/about](http://www.sci-ed-ga.org/about)

- Funding Guidelines on Foundation web site

- List of awards since 2018 at
  - [https://www.sci-ed-ga.org/funding-archive](https://www.sci-ed-ga.org/funding-archive)

- Awards are made every 2-5 months
- Funding generally $1,000 – $10,000
Connecting GA STEM expertise to the K-12 STEM education community

- Non-profits contact GA/Woolf and their requests are placed as banner announcements on company internal home pages
- Specific requests that are informational are placed on GASSSS Matchmaker site
  - GA employees who want to make their interests and expertise known can also post on this site
- Other major outreach opportunities are placed on GASSSS site:
Summary

GASSSSS

Funding K-12 STEM Non-Profits

Connecting GA to the K-12 STEM Community

TutorMate