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

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Outline

- Brief history
  - GA education outreach
  - General Atomics Sciences Education Foundation (GASEF)
- GASSSSS (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 9 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 website.

The Foundation has created a resource room to support employees involved in education outreach and the GASSSS program. Please visit A20/2008 to see many different types of educational resources available to employees.

On March 22, the General Atomics Sciences Education Foundation announced that it has provided $17,500 in funding for 3 STEM non-profits and programs. Click here for more information about these recent awards and here for an archive of previous awards.

**GASSSS**
Employees can contribute their science and engineering skills by participating in the GASSSS (GA Scientists/Engineers Supporting Science/Engineering for Students) program. Employees are reimbursed for purchases.

**TutorMate**
Employees can volunteer as online reading tutors to at-risk 1st graders via the TutorMate program. The tutoring is done from your desk for 30 minutes per week, and includes the reading of science stories.

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

**Funding Guidelines for Non-Profits**
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
  - Employee must actively perform K-12 STEM activity
  - GASEF will provide
    - Up to $500 yearly reimbursement for STEM purchases
    - Charge number for up to 9 hours yearly
- GA employee activity determined by the employee interacting with the teacher/students
  - Assist teacher in science activity
  - Perform demonstration
  - Talk about career
- Also hours support for college/university career mentoring/presentations
- Application form on GASSSS site
GASSSS Program: www.sci-ed-ga.org/gassss

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 9 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:
TutorMate registration now open for the 2022-2023 school year. See the Announcement below for details.

- Announcement on internal home pages
- TutorMate flyer
GASSSS 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
Yearly GASSSSS Participants

![Graph showing GASSSSS Participants per Year](image)

- **Number of GASSSS approved applicants**
- **Number of GASSSS completions**

Yearly GASSSSS Participants are depicted with a trend line showing the number of approved applicants and completions over the years from 2010 to 2022.
Cumulative GASSSSS Participants

Total Number of GASSSS Applications/Completions

- Total Number of GASSSS Applications
- Total Number of GASSSS Completions

Year

Total GASSSS Participants
0 100 200 300 400 500 600 700 800 900 1000 1100 1200
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: Started
• 2022-2023: 17 employees participating

1. Registration details are announced on internal home pages in ~October
2. Complete online background check
3. Complete training session
4. You are then assigned a student to tutor
5. Spend 30 minutes weekly reading with your student
TutorMate includes STEM

TutorMate combines literacy with STEM

Why do we have day and night?

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

What does a material scientist do?

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.

Why is the Milky Way called a galaxy?

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

It all starts with literacy.
Since 1999, GASEF has provided over $900,000 to mostly San Diego area regional 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
  • e.g. Outreach at San Diego Fleet Week, Miramar Air Show, Other Air Shows
  • GASSSSS resource room (A20/2008) for STEM outreach items
• Specific requests that are informational are placed on GASSSSS 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 GASSSSS site:
Summary

GASSSS

Connecting GA to the K-12 STEM Community

Funding K-12 STEM Non-Profits

TutorMate