



Note from the Board Chairman

Dear STEM Synergy Community,

As we conclude this transformative year, I am excited to highlight the significant strides and impactful interventions that STEM Synergy has made in advancing STEM education and empowering our youth and women through innovative solar technologies...

I extend my deepest gratitude to our dedicated team, passionate volunteers, and all our supporters who continue to make STEM Synergy's mission a reality. Together, we are shaping a brighter and more inclusive future.

Please support our organization and our mission by donating today at <https://stemsynergy.org/>

Dr. Nate Woods, PhD
Board of Directors, Chairman
STEM Synergy International

Quarter in Review

In the final quarter of 2023, STEM Synergy reached noteworthy milestones in the of STEM education and innovation. Key achievements encompassed a collaboration with AASTU for STEM Teachers Capacity Development Training, the successful organization of the 8th National Science and Engineering Fair, efforts to bridge the gender gap through the Girls STEAM Camp in partnership with Debre Tabor University, and the commencement of the third round of Robotics and Coding Training at the country office.

These efforts not only bridge educational gaps but also inspire a passion for STEM careers, fostering a future where children excel in science, technology, engineering, and mathematics. Supporting STEM Synergy contributes to positive change and sustainable development.

The 8th Annual National Science and Engineering Fair.

In November 2023, STEM Synergy, in collaboration with The Ethiopian Ministry of Education, JICA, UNESCO, STEMpower, and other partners, organized the 8th Annual National Science and Engineering Fair at the Addis Ababa Science and Technology University (AASTU).

The event, themed "**Building Trust in Science**", provided a platform for regional/local science competition winners to bring their innovative projects and compete at a national level. The fair attracted a participation of 211 contestants representing 12 regions and two city administrations, engaging in nine-categories of the competition.



Students from General education competed in three grade categories (7-8, 9-10, 11-12), while STEM-centers demonstrated expertise in Software and Hardware engineering, including robotics. Teachers in the first and second cycle exhibited their proficiency in both cycles, and a unique contest highlighted the accomplishments of female participants, promoting inclusivity throughout the event.

The National Science and Engineering Fair serves as a crucial platform for fostering scientific curiosity, innovation, and collaboration among students across diverse regions. Its primary objectives encompass encouraging and promoting interest in science and engineering, inspiring a passion for scientific inquiry and exploration.

The fair provides an invaluable opportunity for students to bring their innovative projects, compete on a national level, and gain recognition for their achievements. Moreover, it creates a space for collaboration and exchange of ideas, bringing together students, teachers, and professionals from various backgrounds to share their findings and experiences.

Beyond individual accomplishments, the fair contributes to the broader goal of advancing science education, instilling confidence in the scientific process, and building trust in the pursuit of knowledge.



In its role as a co-organizer, STEM Synergy offered Laptops and Samsung tablets as prizes. Furthermore, the organization covered the installation of electrical facilities in the venue hall to display contestants' projects.



At the 8th National Science and Engineering Fair, both the Board Chairman and Country Director of STEM Synergy delivered speeches during the opening and closing ceremonies.

The country director of STEM Synergy, in the opening ceremony, specifically addressed the purpose and potential impact of this platform, emphasizing the cultivation of students' creativity and teamwork.



On the other hand, the Board Chairman's closing ceremony speech reflected on the accomplishments, acknowledging the innovative work demonstrated by the participants and highlighting the positive influence of the event on the students' educational journey.

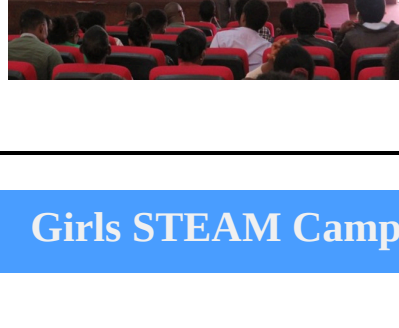


At the closing ceremony, STEM Synergy was also acknowledged and appreciated for its continual and significant role in organizing the event.



The 8th National Science and Engineering Fair, arranged through the collaborative efforts of STEM Synergy and its partners, stands as a testament to the commitment towards advancing STEM education in Ethiopia.

Lab-based STEM Teachers Capacity Development



STEM Synergy, in collaboration with Addis Ababa Science and Technology University (AASTU), successfully executed a comprehensive Capacity Development Program for 150 STEM teachers who are selected from various secondary schools within the university's catchment area.

This impactful program unfolded in two rounds, held from October 20-22 and December 15-17, 2023, utilizing the science and mathematics laboratories at AASTU. The initiative aimed to enhance the skills and pedagogical capabilities of STEM educators, providing them with valuable insights and hands-on experiences to elevate the quality of STEM education in secondary schools.

A Lab-based STEM Teachers Capacity Development Program is designed to enhance the skills, knowledge, and pedagogical practices of STEM (Science and Mathematics) teachers through hands-on laboratory experiences, ensuring they are well-prepared to effectively engage students in STEM subjects.

Outcomes and Reflections

- Teachers expressed gratitude for practical skills gained, citing a tangible impact on their teaching methods.
- Utilization of university laboratories and STEM Synergy's support was well-received, providing valuable resources for improved classroom practices.
- University authorities committed to allowing teachers to bring students for practical sessions on weekends, extending benefits to secondary school students.
- Trainees regarded the program as inspiring, emphasizing its significance for broader dissemination and continuity within the educator community.
- The program concluded with the award of participation certificates to trainees and a recognition certificate to STEM Synergy Ethiopia.
- Keynote speeches during opening and closing ceremonies highlighted the benefits of collaborative efforts and program achievements.

Girls STEAM Camp



STEM Synergy has collaborated with Debre Tabor University to launch a Girls STEAM Camp Program, spanning from December 1, 2023, to February 29, 2024. This three-month initiative aims to benefit 60 girls who are carefully chosen from secondary schools within the university's catchment area based on their academic performance and demonstrated interest in STEM fields.

The Girls STEAM Camp program is a vital response to the pressing need for closing the gender gap in STEM education, with a dedicated focus on Science, Technology, Engineering, Arts, and Mathematics (STEAM). By leveraging strategic initiatives like coding, robotics, and hands-on STEM training, the

program aims to empower and inspire girls, fostering both interest and competitiveness in STEM disciplines.

Moving beyond conventional education, the program integrates modern-day programming languages, coding tools, and hands-on experience with hydraulic systems. This approach effectively connects theoretical knowledge to real-world applications, fostering a seamless transition from learning in the classroom to practical problem-solving.



Third Round Coding and Robotics Training.



STEM Synergy is thrilled to announce the commencement of the third round of coding and robotics training, starting on December 30, 2023, at our country office. This comprehensive training program spans six months, providing participants with a profound understanding of coding and robotics using Raspberry Pi kits and focusing on Python coding.

Throughout the training, participants will progress through four levels (A up to D), covering key aspects such as circuit components exploration, design and building circuits, python programming mastery, and the exploration of sensors, actuators, and raspberry Pi controllers. The curriculum is carefully designed to facilitate hands-on learning and skill development.

Upon completion of the four levels, participants will engage in project work, applying the knowledge gained during the training. This practical application ensures a thorough understanding of the concepts learned, fostering a holistic learning experience.

Youth and Women Empowerment Through Technology Transfer.



The Solar bakery, driven by solar thermal technology using mirror concentrator, is a ground-breaking initiative aimed at empowering youth and women entrepreneurs and fostering sustainable job creation. With a commitment to local stability and the advancement of a circular and functional service economy, the bakery stands as a proactive measure to mitigate the impact of climate change.

The first seven solar bakeries are crafted entirely in Ethiopia by STEM Synergy's technical team in collaboration with Solar Fire Concentration Ltd, a finish company that owns and shares the technology, using locally available materials to be affordable. The Solar Bakery is not only cost-effective but also environmentally conscious, playing a role in the reduction of greenhouse gas emissions and deforestation.

The concentrator is made from a series of sliced mirrors covering 5 sq. meters that can efficiently capture solar radiation and directs this radiation in to the oven to produce a substantial thermal energy, reaching a temperature as high as 300°C under clear sky condition. The solar bakery can be utilized for baking a diverse array of goods, from bread and pizzas to cookies, muffins, and roasting cereals.

Join us in promoting social enterprises and sustainable development through empowering solar entrepreneurs and advancing the green economy.

Final remarks and call to action

STEM Synergy strongly believes that investing in STEM education lays the groundwork for individual and societal success. Prioritizing the exposure of future generations to STEM concepts from an early age is crucial, igniting their curiosity and sustaining the flame of passion for STEM education. The completed STEM centers and focused STEM activities have already demonstrated a positive impact on students' academic achievements, attitudes toward sciences and technologies, and the enhancement of their creativity and innovation skills.

Looking ahead, our organization has planned impactful programs aimed at mainstreaming STEM education in Ethiopia's education system. However, the successful implementation of these initiatives relies on securing funding from individuals, corporations, and foundations. The STEM Synergy team is gearing up for an even more extensive array of trainings and engagements in 2016 (E.C.), focusing on Summer Outreaches, Coding, Robotics, Website Development, STEM Girls Camp, STEM Teachers and School Leaders Training, Entrepreneurship, Financial Management, Project Management training, and the National Science Fair, including awards for competition winners.

We recognize that these initiatives can only thrive with your generous support. The need is greater than ever, and we appeal to donors like you to contribute. Your donation, regardless of the amount, will directly impact those we are serving. Please refer to the table below for the engagements our organization plans to support. Together, we can make a lasting difference in the lives of aspiring learners and contribute to a brighter future through STEM education.

Training Type	Duration	Number of Beneficiaries	Budget Required	
			Eth Birr	USD (1 to 56.5 Birr)
Summer outreach program	5-6 weeks	300-350 students	690,000	\$ 12,212.40
Summer outreach program	5-6 weeks	150-180 students	345,000	\$ 6,106.20
STEM Teachers Capacity Development	7 days	200 teachers	350,000	\$ 6,194.70
Coding and Website Development	5 Weeks	120 students	400,000	\$ 7,079.70
Girls STEM Camp	6 weeks	60	200,000	\$ 3,539.90
School Leaders Training	3 days	60 leaders	250,000	\$ 4,424.80
Entrepreneurship, financial management, and Life Skill Training	5 days	250 students	400,000	\$ 7,079.70
Organizing and Conducting Local and the 2024 National Science and Engineering Fairs	1NSF & 2LSF	1000 students	1,000,000	\$ 17,699.20
Coding and Robotics Training	Lower Level (Grade 5 and below)	10 Months	Cost per student	23,850 \$ 422.20
	Grade 6th -8th	10 Months	Cost per student	26,500 \$ 469.10
	Higher Level (Grade 9 and above)	10 Months	Cost per student	29,150 \$ 515.95
Solar Bakery Transfer		5-7 entrepreneurs	197,750	\$ 3,500.00

STEM Synergy, Inc. is a 501(c)3 tax-exempt charitable organization. Donations are tax deductible to the extent provided by US Law. US Federal Tax ID 30-0874817

Our mailing address is:

[click here for further information](#)



You are receiving this email as you signed up for our newsletters.

Want to change how you receive these emails?

You can [Unsubscribe](#) or [Update your preferences](#)