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Note from the Board Chairman

Dear STEM Synergy Community,

As we reflect on the accomplishments of this year, I am proud of the milestones STEM Synergy has achieved in expanding access to quality STEM education and pioneering sustainable energy solutions. From hands-on robotics training for young learners to the successful deployment of solar-powered bakeries in rural communities, our initiatives are empowering students and transforming lives.

These successes would not have been possible without the dedication of our team, the enthusiasm of our volunteers, and the generous support of our donors and partners. Your commitment to our mission drives real change, inspiring innovation and opening doors to new possibilities.

Looking ahead, we are more determined than ever to scale our impact, reach more communities, and continue our journey toward sustainable development through STEM education and technology.

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

Quarters in Review

In the second half of 2024, STEM Synergy marked key achievements through impactful programs and strategic events, including the GE Aerospace Next Engineers Program, Summer Robotics and Coding Training, and participation in AASTU's STEM program, ICS Metebabab NGO Fair, and CSO Week. It also hosted the 9th National Science and Engineering Fair and strengthened partnerships with Boeing Africa, Armath, and the ET Foundation.

These efforts bridged learning gaps and inspired youth toward STEM careers, fostering innovation, opportunity, and sustainable development across Ethiopia.

Participation in the 4th Round GE Aerospace Next Engineers program

In September 2024, STEM Synergy Collaborated with GE aerospace and Ethiopian Airlines to conduct the GE Next Engineers program, which is a global initiative to inspire youth to pursue careers in STEM fields.

As part of this initiative, we volunteered to coordinate and select students from various schools, specifically targeting those in grades 9, from Bole Addis, Beshale, and Harmony hills secondary Schools.



Students acquired a unique experience by visiting the Ethiopian Airlines maintenance facility, sky technologies, and Aviation University.

The tour offered students an opportunity to observe the practical aspects of engineering and aviation maintenance, providing them with a clear understanding of aircraft operations. Through guided visits, they interacted with industry professionals, explored various roles within the



aviation sector, and gained valuable insights into the skills required for careers in engineering and aviation.

The tour also included a visit to the aviation school, which further enriched their experience by offering insights into various aviation careers and the educational pathways. During the visit, students engaged with instructors and current trainees, learning about the curriculum and the hands-on training involved in becoming aviation professionals. This exposure broadened their understanding of the skills and knowledge needed to succeed in the aviation industry.



This experience not only deepened the students' understanding of engineering principles but also inspired them to explore careers in STEM fields. Observing real-world applications allowed them to connect classroom learning with practical career opportunities, nurturing a passion for innovation and problem-solving within the field of engineering.



Participation at AASTU's summer STEM camp Program



STEM Synergy participated in a six-week training program in Science, Technology, Engineering, and Mathematics (STEM), organized by Community Engagement Directorate of Addis Ababa Science and Technology University (AASTU). The program, which was closed on September 14, 2024, aimed to empower students with innovative skills and foster a culture of problem-solving and technological advancement.



Students engaged in diverse activities, including Python programming, children's science experiments, and the Bright Generation sessions, which advanced their knowledge across STEM disciplines. The initiative was particularly impactful in nurturing critical thinking, promoting creativity, and addressing real-world challenges. Students participated in three levels of training, tailored to their age and educational level.



The closing ceremony was attended by university leaders, including Dr. Temesgen Wendimu, Vice President for Academics and Administrative Affairs, and Dr. Kenatu Angassa, Director of Community Engagement, who emphasized the importance of fostering innovation and creativity as key priorities for AASTU. Guest of honor Mr. Abiyot Lakew, Country Director of STEM Synergy, along with Mrs. Selam Alemu, Head of the Community Engagement and Indigenous Knowledge Desk at the Ministry of Education, delivered inspiring messages to the participants. The event concluded with the awarding of certificates of completion, recognizing their dedication and achievements.



Students commended the program organizers for equipping them with valuable skills and urged the university to sustain its commitment to STEM education initiatives. The six-week training conducted at AASTU's STEM center complements STEM Synergy's broader mission to strengthen science and technology education in Ethiopia, empowering young learners to become catalysts for innovation and growth.

Summer Robotics and Coding Training



STEM Synergy successfully conducted its Summer Robotics and Coding Training Program from July to September 2024, offering an engaging, hands-on learning experience for students in grade 6 and above. Designed to spark curiosity and develop technological skills, the two-month program focused on robotics, programming, and problem-solving, empowering young learners to explore technology and innovation.

The program ran three days a week, with each week dedicated to specific learning modules. During the initial phase, students were introduced to foundational programming concepts using Python and Scratch, tailored to their age and educational levels. Participants learned to write code, create algorithms, and troubleshoot programs, building a strong base in coding and logical thinking.

As the program progressed, the focus shifted towards robotics, where students explored how to design, build, and program robots using Raspberry Pi and Arduino kits. Through project-based learning, they worked in teams to solve practical challenges, gaining experience in sensors, motors, and control systems. This hands-on approach not only enhanced their technical skills but also fostered teamwork, creativity, and problem-solving abilities.

At the end of the program, students received certificates of completion from STEM Synergy, recognizing their commitment and newly acquired expertise in robotics and coding. This achievement positions them for future opportunities in STEM fields, inspiring the next generation of innovators and tech leaders



Participating in the Metebaber NGO Fair at ICS



In October 2024, STEM Synergy proudly participated in the Metebaber NGO Fair held at the International Community School (ICS). The event served as an excellent platform to showcase the remarkable achievements of its students in robotics and coding, alongside the pioneering solar-powered bakery project. These initiatives captured the attention of ICS students, teachers, and parents, reflecting the tangible impact of STEM education on community development and sustainable solutions.



Beyond just an exhibition, the fair provided an opportunity for STEM Synergy to build meaningful connections with like-minded NGOs, fostering discussions around potential collaborations aimed at expanding STEM education and technology-driven solutions across Ethiopia.



The enthusiasm and curiosity shown by the audience reinforced STEM Synergy's mission to drive impactful change through education, innovation, and sustainable technology. Engaging with diverse stakeholders at the fair not only elevated the visibility of STEM Synergy's projects but also opened doors for strategic partnerships to further enhance its outreach and influence in the education sector.

Organizing the 9th National Science and Engineering Fair 2024

STEM Synergy, in partnership with the FDRE Ministry of Education and other STEM stakeholders, successfully organized the 9th National Science and Engineering Fair 2024 at Addis Ababa Science and Technology University (AASTU) from November 11-15.

The event brought together 124 students and 20 teachers from across the country, creating a platform for showcasing innovation, creativity, and problem-solving in STEM fields. Participants competed in 8 categories, presenting projects that addressed real-world challenges through science and engineering. The fair provided a platform for students to connect with experts, present their ideas, and inspire the next generation of innovators and engineers to tackle real-world challenges.



During the opening ceremony, STEM Synergy Country Director, Mr. Abiyot Lakew, underlined the organization's commitment to empowering youth through STEM education. He highlighted the significance of initiatives like this fair in creating an innovative and scientifically curious culture.



STEM Synergy sponsored the event and awarded top-achieving innovators from the contestants, recognizing their exceptional effort to solve community's problem through scientific enquiry and developing functional prototype and services. By providing opportunities for young innovators to excel, STEM Synergy continues to advance its mission of nurturing future leaders who will drive advancements in science, technology, and engineering.



Participating in the 4th CSOs Week

STEM Synergy participated in the 4th Civil Society Organizations (CSOs) Week, organized by the Ethiopian Civil Society Organizations Council and Authority for Civil Society Organizations from December 6-8, 2024, at the Ghion Hotel.

During the event, the organization showcased and pitched its impactful programs, including STEM education, coding and robotics training, and renewable solutions such as solar-powered bakery initiatives, highlighting their role in promoting innovation and economic empowerment. Highlighting their role in enhancing innovation and economic



STEM Synergy took part in panel discussions and networking sessions, emphasizing the importance of STEM education in addressing societal challenges such as youth unemployment, gender disparities, and sustainable development. Promotional materials were distributed, and success stories were shared, increasing visibility for STEM Synergy's mission and achievements while creating meaningful connections with like-minded organizations. Additionally, the organization engaged with over 85 CSOs and government representatives, exploring opportunities for partnerships and collaboration to expand STEM education initiatives nationwide.

Transfer of Low-Cost Solar Bakery to Debre Tabor Entrepreneurs

STEM Synergy has been championing the Low-Cost Solar Bakery Technologies for Youth and Women Economic Empowerment initiative, aimed at driving sustainable livelihoods through innovative renewable energy solutions. This project empowers youth and women by providing access to solar-powered bakery systems, enabling efficient and affordable bread production while promoting economic independence and environmental sustainability.



As part of this initiative, STEM Synergy conducted a Training of Trainers (TOT) program for the Debre Tabor University Technical Team in November 2024. The training aimed to equip the team with the skills necessary for the assembly, installation, and operation of solar-powered bakery machines. This capacity-building effort supports the university's commitment to transferring the bakery units to entrepreneurs in Debre Tabor town, promoting sustainable economic opportunities and clean energy solutions.

Following the training, the third solar-powered bakery unit manufactured by STEM Synergy was transferred to the beneficiaries in Debre Tabor, marking a significant landmark in the project. The beneficiaries, youth and women, received training on how to operate and maintain the bakery effectively. They also learned essential entrepreneurial skills to help them manage production, market bakery products, and establish a sustainable business model. This transfer not only enabled the local community to produce affordable and eco-friendly baked goods but also created new income-generating opportunities and a long-term economic empowerment.



STEM Synergy, in collaboration with Mrs. Eden Girma Tesema, a generous sponsor based in the United States, provided the bakery unit and covered training costs to empower a group of entrepreneurs in Debre Tabor through sustainable, eco-friendly technology. This initiative not only promotes economic empowerment but also encourages the adoption of clean energy solutions.

Networking and Partnership

➤ Participating in Great South Fair

STEM Synergy participated in the Greater South Fair for Endogenous Technologies (GreSFET); a prestigious biennial event organized by the Organization of Southern Cooperation (OSC) and Ministry of Innovation and Technology. GreSFET serves as an international platform dedicated to promoting homegrown technologies, strengthening strategic partnerships, and connecting local innovations with global opportunities. Our presence at the fair highlighted STEM Synergy's commitment to leveraging indigenous solutions that drive sustainable development and empower communities across the county.

➤ Participation Public Discussions on Startup Proclamation and Timbuktoo Initiative

*STEM Synergy participated in a public discussion organized by the **United Nations Development Program (UNDP)** in collaboration with the **Ministry of Industry** and the **inter-ministerial startup committee**. This event marked the launch of the **Timbuktoo Pan-African ManuTech Hub**, a transformative initiative aimed at driving innovation, fostering collaboration, and advancing manufacturing technology across Africa.*

During the discussion, STEM Synergy shared its insights and experiences in leveraging STEM education to empower youth and women with technical skills, which aligns closely with the Hub's vision of promoting industrial and technological growth. The event provided a platform for key stakeholders.

➤ Participating in the Continental STEM Conference

From November 26–28, 2024, STEM Synergy participated in the Continental STEM Conference, co-organized by UNESCO and the African Union at the African Union Headquarters in Addis Ababa. The event brought together a diverse group of

stakeholders to explore the transformative role of STEM in driving Africa's sustainable development.

The conference provided a dynamic platform for networking and collaboration, paving the way for joint efforts to expand and scale impactful STEM education programs across the continent.

In addition to fostering strategic partnerships, the event inspired cross-border collaborations aimed at replicating and adapting successful STEM initiatives to address region-specific challenges and opportunities throughout Africa.



Networking

As part of its broader mission to enhance STEM education, technology transfer, economic empowerment through appropriate technology, STEM Synergy expanded its outreach effort in 2024 to key global partners including Boeing and Armath by UATE. These engagements are focused on building partnership and collaboration through knowledge exchange, co-developed programs, and funding opportunities that align with both Ethiopian's development priorities and global STEM education goals