

The Long Island STEM Hub Strategic Plan October 2013

Mission Statement

Develop an integrated, effective, and cohesive regional system that will increase the number of students interested in and prepared for science, technology, engineering and math (STEM) careers on Long Island. Through partnerships between industry, academia and informal education providers, we will promote workforce readiness and academic relevance that supports the economic growth and vitality of the region.

Introduction

The Long Island Regional STEM Hub, established in 2011, is one of ten hubs forming as part of the Empire State STEM Learning Network. The Long Island (LI) STEM Hub is comprised of many partners across the Long Island Region including K-12 school districts, universities and colleges, informal education centers, government and business and industry partners

Long Island as a region is focused on attracting new high tech industries as well as sustaining, retaining and growing those already established. Many resources are being applied to support this focus. Examples include Accelerate Long Island, the Long Island Angel Network, Industrial Development Agency incentives, Thought Box, and much more. Collectively, these initiatives are bearing fruit in high tech industry development. Other solid industries on Long Island, such as healthcare and manufacturing, are also rapidly transforming as a result of technological advances.

Longer term success for our high tech, STEM based businesses will require a qualified workforce. The LI STEM Hub offers a strategic approach to developing the business and academic partnerships necessary to meet the needs of our growing industry base. The outcomes will be mutually beneficial in that a strong STEM workforce will drive innovation, attract and retain high tech industries, and, through multiplier effects, drive the service and retail industries also important to the region.

LI STEM HUB STEWARDS

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The following is an outline of goals, objectives, and actions to support the mission of the LI STEM Hub.

Goal 1: Encourage industry and academic leaders across Long Island to commit to long term engagement with one another in ways that use their strengths to complement and achieve a common set of goals focused on improving STEM education and workforce readiness.

Objective: Develop an organizational structure that will support the goals of the LI STEM Hub and create a blueprint that identifies expectations and obligations for each group.

Actions:

- **Board of Champions:** create a board consisting of stakeholders which include academic and industrial leaders that has the capacity to commit resources as needed; provide guidance and input to the Hub; ensure its sustainability; and maintains its alignment with the priority economic and academic goals for the region.
- **Co-Stewards:** Brookhaven National Laboratory and North Shore-LIJ Health System will make a significant commitment of staff and leadership resources to launch and develop the LI STEM Hub to a functioning and durable organizational structure.
- **Hub Anchor Institutions:** In order to engage efforts that benefit the entire region, the Cradle of Aviation in Nassau County and Brookhaven National Laboratory in Suffolk County, sites with large facilities and a strong commitment to STEM, will be anchor facilities to ensure a bi-county presence.
- **Steering Committee:** The Steering Committee will be established to provide leadership in implementing the goals adopted by the LI STEM Hub.
- **Core Team:** Form a Core Team whose members will be expected to be leaders and/or active participants in the LI STEM Hub committees. They will provide input on objectives for the LI STEM Hub and provide support for implementing those objectives.
- **Regional Industry Councils (RIC):** Create councils in high growth industries to facilitate communications between stakeholders with the intent of developing and implementing specific actions to increase career awareness, provide curriculum input and work experiences for Long Island educators and students in their industry. These actions collectively will motivate students to pursue careers relevant to the RIC membership.
- **Partners:** Align with like-minded stakeholders to advance the mission of the LI STEM Hub and act as ambassadors in deployment of LI STEM Hub objectives.

Goal 2: Create and support partnerships which include business, educators, higher education, government and non-profits that will build and sustain interest in STEM education, and resonates with regional industry needs.

Objective A: Align industry needs with academic curriculum to reduce the gaps in STEM preparation and workforce readiness, by establishing channels of communication to enable partners to share information that results in successful transitions from education and training to employment.

Actions:

- Expand College to Career Partnerships for industry forums to discuss trends, needs and better alignment between industry and academia.
- Engage the leadership of the School Superintendent-College President Partnership to assist in the development and dissemination of strategic actions related to integrating industry trends into academic approaches, identifying skill gaps, and addressing misalignment of academic programs relative to industry needs.
- Disseminate information about LI STEM Hub initiatives and opportunities via the Nassau-Suffolk School Board Association to convey these to Long Island's 125 school districts.
- Actively participate in the Empire State STEM Learning Network and national STEMx with the intent of sharing lessons learned, identifying trends, working collaboratively to seek policy change where appropriate, and integrating best practices of others into the LI STEM Hub.
- Participate in and update the Long Island Regional Economic Development Council (REDC) on LI STEM Hub status and to ensure alignment of the Hub with the economic priorities of Long Island.
- Reach out to Long Island industry organizations and associations to gain participation in RICs.

Objective B: Create a premier source and map out assets for the Long Island community to seek and find STEM enrichment information and opportunities.

Actions:

- Create a publicly accessible and interactive website that will make available information about educational programs and opportunities for Industry/academia engagement.
- Create a publicly searchable database of existing STEM programs and resources on Long Island.
- Identify grant/funding opportunities and share with collaborators who have the resources to partner and successfully pursue them.
- Establish an electronic process for collecting and disseminating student internship and teacher work experience applications.
- Engage the Regional Industry Councils in placement of applicants.
- Provide Internship training/toolkits to interested companies

Goal 3: Facilitate the creation of vehicles for learning that help students develop long-term career goals and provide relevance for academic coursework to motivate them to persist in STEM career preparation.

Objective: Assist in the implementation of industry-related curriculum in Middle and High schools that deliver rigorous academics, relevancy through a contextual framework and relationships with the business community.

Actions:

- Identify school districts that have an interest in Career Academies.
- Provide guidance on the steps a school needs to take, which may include reallocation of funding, in order to “explore” or create a Career Academy and facilitate interaction with industry partners.
- Facilitate developing and implementing more STEM schools.
- Provide industry support to STEM schools, Career Academies and career and technical education providers.

Goal 4: Support initiatives that will improve the content, knowledge, and skills required to become more effective in STEM education.

Objective A: Provide opportunities for teacher professional development activities that promote career awareness, relevance of academic content, and STEM content knowledge.

Actions:

- Provide professional development opportunities, such as work experiences for teachers, through partnerships with regional industry council members industry partners.
- Seek out grant funds to support teacher professional development in STEM fields.
- Work with Schools of Education to strengthen teaching methodologies for STEM.
- Work with school districts to reallocate resources to enable teacher participation with business partners.
- Develop partnerships with informal education providers from industry to develop STEM-based teacher professional development.

Objective B: Encourage and promote a larger, more diverse population of college bound and STEM career prepared students.

Actions:

- Work with Administration and Guidance Counselors to promote STEM college and career preparation options for all students.
- Outreach to parents/students, community groups, and civic organizations to develop an awareness of Long Island STEM career options.
- Provide opportunities for student and industry interactions and awareness through job shadowing, mentorships, internships, and career days.
- Actively participate in and support STEM Diversity initiatives and align with the Regional Economic Development Council’s Opportunity Agenda priorities.
- Partner with existing events to promote collaboration and raise general awareness of all STEM events on Long Island and their sponsoring organizations.

Goal 5: Measure the impact of LI STEM Hub initiatives to assess effectiveness, drive change, and document success.

Objective: Establish meaningful metrics and track outcomes.

Actions:

- Create an assessment committee to benchmark effective measurement tools and adopt metrics for the LI STEM Hub.
- Develop instruments / procedures to collect data (quantifiable, qualitative).
- Collect, review, analyze, and share data with stakeholders.
- Revisit metrics based on the analysis of data annually.

Goal 6: Communicate the initiatives, successes, progress and participation of the LI STEM Hub.

Objective: Create a comprehensive marketing plan and prepare materials that advance the Hub's initiatives, raise awareness of the LI STEM Hub, and builds capacity through participation.

Actions:

- Develop collateral materials for disbursement to schools and at career fairs, industry trade shows, and community events.
- Use the LI STEM Hub website to promote internships, share STEM success stories, available educational programs and opportunities for industry/academia interaction.
- Highlight LI companies, colleges, and organizations that are engaged in helping students and that utilize STEM skills.
- Creation of a communications committee to develop media relationships to convey STEM Hub information and successes.
- Use social media outlets such as LinkedIn, twitter, Facebook, etc. to broaden communication with a wider multi-generational audience.
- Create LI STEM Hub signature events.