Based on the activities of the STEM For All meeting in San Francisco, CA on April 25-26, 2013, below are action items that you can assist with or participate in.

**Action Items:**
1. Serve on grant proposal review panels (i.e. NSF, Dept. of Education, etc.)
2. Work with Institute for Broadening Participation (IBF) to:
   a. Recognize and assist effective programs that already exist
   b. Create a database of STEM programs across the country
3. Plan the next meeting (suggest a city, date, focus, etc.)
4. Collect videos of STEM research conducted by STEM For All participants and others
   a. [http://www.youtube.com/watch?v=WLZP371icXY](http://www.youtube.com/watch?v=WLZP371icXY)
5. Every quarter STEM For All participants will recommend STEM programs that we as a group will support and publicize (Connie’s Stealth Movement)
6. Assist with dissemination by providing contacts, outlets, etc.

**Meeting Proceedings**
**Day 1**
After individual introductions, assigned groups were charged to create a one-slide pitch of a solution for broadening participation in STEM for one child, “Angel”. Angel is a persona or a representation of the children that are described in the broadening STEM participation research literature. Below is a description of Angel that was provided to the meeting participants.

Angel:
- Likes science
- Oldest of four children
- Father is a cross-country truck driver with a high school diploma
- Mother is a receptionist and works a night job; she has an associates degree
- Attends a school that is 50% African American, 40% Latino, and 10% White

Groups were formed based on pre-meeting interests (e.g. community, school, achievement/opportunities, science community, parents).
Groups created and then presented the following pitches while audience members/other groups provided feedback using SWOT (strengths, weaknesses, opportunities, threats) template (see attached template). Groups revised templates over “dinner” in preparation of presenting them to the Community Panel on Day 2.

**Community Group:** Allison Scott, Bryan Brown, Akili Lee, Andrew Williams

**Village Pathways**

*A platform to connect STEM learners to communities of peers, mentors, families, industry & educators to create new pathways.*

**Need:**
- Lack of STEM Role models
- Mentors/cultural capital
- Development of STEM-related skills & competencies
- Mapping skills to futures

**Goal:**
To develop STEM career pathways, academic skill development, STEM competency and skills, individual motivations, self efficacy and identity among high school students of color.

**Stakeholders:**
- **Youth**
- Parents
- Educators
- Community & Industry
**School Group:** Joseph Miller, Lisa Mielke, Henry Frierson, Steve Schneider

**Maker School**: grades 6-12, designed around four or five STEM domains, with “maker space” for each domain. Domains could include engineering, computer science, chemistry, and math and modeling.

- Students move through all domains over their time in the school.
- Students learning is assessed through a portfolio of projects.
- Offered during school time to replace electives.
- Experts are utilized to expose kids to pathways to STEM careers.
- Tight alignment between core curriculum lesson plans and the projects offered for exploration in the Maker Shop.
Achievement Group: Karl Reid, Bob Hirshon, Connie McNeely

Angel STEM Achievement and Performance (ASAP)

Creating an Ecosystem for STEM Achievement

Induction
• Identity training
• Study skills training
• Parent education

Monthly Meetings
• Fun and science

Weekly Virtual Meetings
• Accountability (done homework?)
• Digital badges – awards for completion of tasks (e.g. completion of weekly reading)
• Tutoring
• Parental incentives-college $$

Final exposition
• Where Angel explains what he’s learned to family and peers

Environment (Culture)
• Affirmation
• Zone of proximal development
• Study groups

Motivation
• Growth Mindset

Behavior
• “Habits of Mind”
• Self-explanation
• Reading
  Comprehensive
• Study Groups

Identity
• Self-efficacy (“I can be a scientist”)
Science Community Group: Melanie Stegman, Felicia Mensah, Allyson Faurve

Scientist in residence

Rigorous application procedure:
- PHD in Biology, Chemistry, Physics or similar experimental science.
- Teaching auditions. Scientists must be able to teach students as well as teachers
- Publication evidence: at least one paper with their name first in the author list.

Job requirements:
- Teach once a week in four different science classes.
- Work with each science teacher to prepare one of their lesson plans each week.
- Extra curricular program (garden, robotics, maker’s club) that involves 30% of the student body.
- Publish 1 paper every 4 years on education research or science
  OR maintain a blog/paper newsletter about the science department and science.
- Maintain a journal club with teachers that students can participate in as well.
- Participate in a journal club in their field, online if required.

Salary: $50,000 - $60,000 + benefits

Funding possibilities: Local industries, foundations, wealthy families name the position.

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Melanie Stegman extended her group’s idea and presented an additional plan-
Get 13 year olds conversing with scientists: Give them something in common to talk about.

Game like Immune Defense, simple interface, many puzzles to solve with given set of tools.

First login and creation of own player profile.

Posting Level, writing description & the science presented in the level.

Posting object, writing its description & how it is different...
Parents Group: Joi Moore, Ivory Toldson, Tanya Moore, Robert Torres

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**ALL-STAR LEAGUE**

Creating the next generation of scholar athletes/artists

- **What**: Academic sports & arts youth camps sponsored by NBA, NFL teams and entertainers
- **Mission**: To change parent perception of the STEM field and to increase college knowledge
- **Program Tenets**: Parent P.R.I.D.E
  - P: Pathway
  - R: Recognition
  - I: Inspiration
  - D: Dedication
  - E: Education

Because we know your child is a star on the court and off.
Community Panel

The Community Panel consisted of: Milton Chen, Bill Sanderson, Meredith Williams, Debra Watkins, and Kim Bryant. Each panelists spoke briefly about their work and the organizations they represented. Afterwards, the groups presented their one-slide pitches to the panel members who provided both written (using SWOT) and verbal feedback.

After panelists departed, groups reconvened to create a dissemination plan based on answering the following questions:

- In order to make your Day 1 plan successful, what tool(s)/product(s) will you use to disseminate information about your plan?
- Who is your target audience/end user for the above products (not the plan but the target audience needed to make the plan work)?
- What forms of communication will you use to attract your target audience/end user?
- Who may be your dissemination partners in operationalizing your plan?
- What is your work plan/timeline?
- How will you evaluate the effectiveness of the above dissemination strategies?
Group Dissemination Plans appear below; summary is attached:

**Group: Community/Industry**

**Evaluation:**

*Phase 1:*

Met all objectives? Development of a board and team

Examine responses to proposed idea:

- # of stakeholders on board
- interest in project
- funding successes

*Phase 2:*

Set targets for content, resources & measure within timeframe

- Testing of platform performance
- Examine user statistics and impact for each population

*Phase 3:*

Set targets and measure outcomes

- # users
- # mentors
- # interest/engagement

**Work Plan:**

*Phase 1:*

- Advisory Board/Working group to advise the plan development
- Development of a tam and key partners
- Outreach to all stakeholders and end users
- Funding & proposals

*Phase 2:*

- Develop content and structure and resource for the platform
- Limited piloting and beta testing, evaluation

*Phase 3:*
• Iterations and scale strategy (re-engage all comm. Partners)

Product:

Online platform, which allows individuals, schools, and industry to connect STEM professionals, content and resources

End User:

HS students, HS teachers, parents, mentors, and role models

Dissemination Partners:

HS students
• Phase 1: (teachers, parents, community organizations)
• Phase 2 (peer networks)
• Phase 3 (media)

HS teachers
• Districts, admin, peer teachers, online professional teaching communities, foundations (with focus on teachers)

Parents
• Parent groups, schools, community organizations

Mentors
• Companies, professional communities (e.g. NSBC), universities (undergrad and grad students)

Role Models
• Companies, funders, universities

Communication:

• Website link
• Direct outreach/networking
• Fundraising/awareness events
• Conferences
• Publishers of text
• Policy makers, state departments
Group: Schools

Evaluation:

Ongoing
  • Final for purposes of developing work plan and other deliverables

Work Plan:

Based on:
  • Ongoing engagement
  • Results of evaluations
  • Generating valid buy-in

Products:

Proposal to modify school
  • Model maker space
  • Document process

End Users:

  • School Board
  • Parents
  • Teachers
  • Union
  • Students
  • Administrators
  • Funders

Communication:

  • Demonstration
  • Iteration/feedback (ongoing)
  • PR/Press/Media
  • Workshops/Town Hall/Activities that include maker demos

Dissemination Partners:

  • Maker communities
  • Those who have maker spaces already
  • Scientists/Advocates for maker spaces
  • Colleges/Universities
  • Parents
  • Outreach sports camp
• ASAP (the school itself)

**Group: Achievement**

**ASAP: Angel STEM Achievement & Performance**

Goal: An ecosystem-based program designed to foster STEM achievement and opportunity based on a multidimensional framework that can be adapted in multiple and varied settings.

**Work Plan:**

• Develop products
• Update research (white paper)
• Identify dissemination partners
• Create a budget
• Create a pilot study

**Evaluation:**

• Web analytics
• Event response
• Print resource
• Partner/user interest
• Funding

**Product:**

• White paper
• Slide deck
• TED-like talk (Youtube)
• Website
• Networks

**End User:**

• Research groups (Sympathetic)
• Industry/Foundations
• Agencies (OSTP)
• Funding sources
  o Planning group
  o Pilot/Demonstration
  o Evaluation

**Dissemination Partners:**
• Sympathetic research community
• Industry
• Foundations
• National Academies
• National science board

**Communication:**

• Keynotes/presentations
• TED
• Op Ed
• Press announcement (press club)
• Website
Group: Parents

End User:

- Athletes (NFL, NBA, WNBA)
- Entertainers
- Teachers
- Schools
- Coaches
- Community Organizations

Dissemination Partners:

- Athletes/Celebrities
  - Admiral Center
  - AAU and other existing sports camps (be clear about distinction)
  - Agents
  - Unions

- Schools/Teachers/Administration
  - Unions
  - AASA, NCA, AFT, NSTA, NCTM

- Parents
  - Community organizations
  - Civic organizations
  - Churches

Communication:

- Parents
  - Radio ads
  - Brochures
  - Word of mouth
  - Websites
  - Church announcements

- Schools
  - Emails
  - Website
  - Official publications
  - PTO
  - School announcements/notifications

- Athletes/Celebrities
  - Meetings
- Forum that includes lots of media publicity
- Pitch/Proposal

**Evaluation:**

- # of athletes/celebrities on board
- # of churches giving announcements
- # of parents signed up
- # of schools in partnership
- # of community-based organizations in partnership

**Work Plan:**

- Identify roles for dissemination (e.g. staff for communication, outreach, etc.)
- Form task force/committee
- Develop database/contact list
- Develop “pitch” (brief presentations, deck, fact sheet)
- Secure an athlete/celebrity early as a sponsor to help convince others (one key person to champion the project)

**Product:**

- Brochures
- Fact sheet
- Presentation material
- Website
**Group: Science Community**

Problem at hand: How are we going to convince kids and scientists to use and recommend this game? How will we convince parents to pass it on?

**End users/dissemination partners:**

- Student Learners (users): Use it and spread the word to peers, teachers, parents, online search
- Parents (encouragers): understand benefits, hear from their kids and teachers

Teachers (encouragers): understand benefits

- Scientists/researchers (users): serve as mentors (learned how to be a mentor), hear from peers, list servs, IBP’s

**Dissemination products:**

- The game itself: available for download in multiple platforms
  - Create a separate domain for the game
  - Android and Google Play
  - App store
  - Web-based version
  - Ibp links to other science games

- Press kits and talking points
  - The one pager plus elevator speech:
    - The game phenomenon
    - The benefits of playing it
    - The tech summary
  - Faculty/Teacher cheat sheet:
    - Role of mentors
      - Low commitment
      - How to fruitfully contribute
      - How their comments and participation will impact positively
      - What to do/What not to do

- The published article

- Conference
  - Presentation
  - Panels
Communication/Dissemination Mechanisms:

• Listservs (ongoing)
• IBP mass email
• Initial announcement to:
  o Science and Ed groups/societies
  o Organizations
  o Gaming forums
  o Announcement in whyville

Connie's Stealth #STEM4All Movement:

Objectives:
• To support and promote successful/important STEM programs, initiatives, policy decisions, positive STEM representations in books/tv etc...
• To create "buzz" and conversation about relevant STEM programs, books, media representations, policy etc...
• To influence conversations/funders/policy related to STEM
• To change perception of STEM (e.g. make STEM "cool")

Process:
• Each quarter the STEM 4 All participants & advisors submit for consideration a program, website, book etc... to the group. The group votes (e.g. via Survey Monkey) on which item they will agree to promote collectively.
• The item with the most votes gets promoted/discussed by each participant during the quarter.
• Each participant makes a commitment to either use twitter, facebook, email blasts, blogs, op-ed articles, work conversations etc... to mention the item being promoted for the quarter.

Impact:
Our collective impact can be measured by retweets, shares/likes on facebook, increase traffic to a website, if topic is trending, increased interest or support for a program, increased book sales etc... (This could depend on the nature of the item/idea of the quarter being promoted)