Welcome
Central MA STEM Network Ecosystem Meeting
Thursday, February 27, 2020
Hanover Insurance
Introductions

Name
Where you work
What is one task connected to your work you would like to see the ecosystem focus on?
Updates & Information

1. STEM Summit Table
   - Wednesday, April 15, DCU Center

2. Central MA Science Festival
   - Saturday, April 18,
     Boys & Girls Club of Leominster

3. TouchTomorrow Volunteers & Exhibitors
   - Saturday, June 13, WPI
Constellation Reports
Youth and Family Voice Constellation

Goal
• Recruit youth and families into the constellation
  • Include youth from middle school, high school, and college
  • Include families from pre-k and elementary schools

Dependency:
• A clear definition of CMSN is needed so that we can start to recruit
  • Define what is it, why join, what is in it for them?

Next Steps:
• Create an email template with CMSN definition to start recruiting
• Reach out to the following contacts:
  • Worcester Technical High School
  • Worcester Family partnership (Pre-k)
  • Worcester Public Schools PTO groups
  • Ask parents at next meeting if they have any contacts with their PTO groups

Future Meetings: second Tuesday of each month, 3-5pm
Fundraising & Resource Development Constellation

• **Our Niche:**
  • Other constellations focus on building/sustaining relationships and programming
  • We provide support for those groups to get the resources they need to do those things

• **Our Approach:**
  • Co-developers and partners, not staff or service providers doing the work for you
  • Other constellations approach us with a goal for resources, not us accumulating resources without a specific need in mind

• **Immediate Goals:**
  • Asset mapping the resources already within the Ecosystem
  • Building the infrastructure (tools, strategies, information) for supporting others to know what they can raise resources to do and how to get those resources
  • Communicating with those in other constellations to develop a shared understanding of how our constellations can work together

**Future Meetings:**
• Mon, 3/23 @ 2 pm to 4 pm
• Fri, 5/1 @ 2 pm to 4 pm
• Wed, 5/27 @ 2 pm to 4 pm
STEM Professional Development and Support Constellation

• **Potential Goals:**
  - Establish a ‘communities of practice’ model for STEM PD
  - Expand access to externships
  - Increase focus on elementary science
  - Help teachers develop comfort with students with visual/other impairments

• **Potential strategies:**
  - Release white papers on key issues as a group
  - Develop a central PD “hub” including a calendar of opportunities, links to resources, etc. (web platform with shared work from constellation)
  - Facilitate ED Camps

Meetings last Thursday of each month from 5:00-6:00/6:30 pm
Personal Goals:
- Build the STEM pipeline
- Communicate what is happening in elementary schools
- After school programs for K-12
- High School internship opportunities
- Adult training and opportunities
- Develop apprenticeships for students not college bound
- Industry wanting to engage with community
- Funding for STEM programs
- Sharing community events

Committee Goals:
Connect members to create new partnerships by identifying who is part of the Ecosystem, their needs and opportunities they can offer.

Tasks:
Step 1: Create a member intake form to gather pertinent information and build a database of members
Step 2: Review information and connect members where applicable

Meetings:
Last Thursday of each month.
Next: March 26
2-3pm
Outreach, Communication, and Community Engagement Constellation

• Big-picture goals:
  1. Develop effective messaging on behalf of Ecosystem and members orgs
  2. Get STEM “on the minds” of families and community members
     • Make family members comfortable engaging students in STEM
  3. Build off some of the best work that members and partners are already doing

• Buckets of work:
  I. Survey members for existing best practices in communication/outreach
  II. Act as intermediary between requests from members, community, and other key audiences
  III. Advocacy → make the case at the school and government level for the importance of the Ecosystem’s work
Constellation – Partnership for Career Exploration/Preparation

Focus: Equal access to STEM career possibilities through career exposure and exploration to allow students to make a more educated personal decision for their future career paths.

Videos and activities or other career-oriented projects

Benefits:
• This might be a shorter commitment with companies
• Could be a student developed product?
• Could be based on internship or immersion activity?
• Will allow future students to access and increase exposure to career sectors
• Projects in conjunction with community or industry interest/need
• Accessible to many

Challenges \ TBD
• Who make the videos
• Where will they be stored
• Protecting intellectual property of companies

Action Items for Next Meeting:
• Bring career quest exemplars

Internships and related training for preparation

Benefits:
• Students gain hands on experience in STEM career
• These may lead to a pipeline of employees for participating companies

Challenges \ TBD
• Organizations doing this in different manners
  o job shadow, job function experiences, students developing their own STEM activities on internships
• Attract industry partners to provide internships, job shadows, STEM activities
• Big commitment to companies
• Limited number of positions
• Establish a credential for employers to go through an internship developing process to identify obstacles, model practices, etc.?
  o Paid vs. unpaid internship obstacles

Action Items for Next Meeting:
• Supporting resources for starting internships and relationships with schools
• Interview questions to ask industry
• Department of Labor come and speak to the group regarding regulations and other pertinent information related to having youth under the age of 18 years old participate in internship and/or job shadow experiences in industry

Next Meeting:
First Monday of the month 3:30-5:30pm
Monday, March 2nd
Time: 3:30 to 5:30pm
Worcester Technical High School
Multipurpose Room
CMSNE Future Governance Structure
MAGNETIC ATTRACTORS
(need or opportunity)

BROADER ECOSYSTEM
(context for partnership)

SECRETARIAT
(3rd party coordination)

CONSTITUTION

LIGHTWEIGHT AGREEMENTS
+ GOVERNANCE

LEAD PARTNER

CONSTITUTION

STEWARDSHIP GROUP

ENABLING FACTORS
1. Lightweight governance
2. Action-focused teams (constellations)
3. Third party coordination (partners don’t run secretariat)

Source: Surman, T. and Surman, H., 2018 "Open-Sourcing Social Change: inside the Constellation Model"
Example

1 Direct Business
1 Economic Development Business
1 Institution of Higher Education
1 Community College
1 K-12
1 Government/Policy
1 Community Team Leads

STEM LEADERSHIP TEAM:
Will include members from the following sectors, at minimum:
- 1 Direct Business
- 1 Economic Development Business
- 1 Institute of Higher Education
- 1 Community College
- 1 K-12
- 1 Government/Policy
- 1 Community
- Team Leads who will sign Letter of Agreement: 1 direct business and 1 education
- Meet 2 times per month
- 12-15 members

EMBEDDED STAFF
2-3 MEMBERS

COMMUNITIES AT LARGE
Transition Team Thoughts

Leading Group:

1. At least 2 members per sector on group
2. Lead of each constellation on group
3. Staff (including regional manager) on group with one vote
4. 2 or 3 year terms
5. One vote per sector
6. Anyone welcome to attend meetings but no vote if not officially on group
Transition Team Thoughts

Leading Group Responsibilities:

1. Make decisions for ecosystem in coordination with constellation groups (i.e. budget, fundraising, leadership, governance structure)

2. Ensure work moves forward

3. Must attend meetings regularly during term

4. Help with staff tasks until ecosystem has dedicated staff
Mental Models
MAGNETIC ATTRAJECTORS (need or opportunity)

BROADER ECOSYSTEM (context for partnership)

SECRETARIAT (3rd party coordination)

LIGHTWEIGHT AGREEMENTS + GOVERNANCE

STEWARDSHIP GROUP

SHARED VISION

LEAD PARTNER

CONJUNCTION

CONJUNCTION

CONJUNCTION

LEAD PARTNER

ENABLING FACTORS
1. Lightweight governance
2. Actor-focused teams (constellations)
3. Third party coordination (partners don’t run secretariats)

Source: Surman, T. and Surman, M., 2018 "Open-Sourcing Social Change: inside the Constellation Model"
Delving below the surface of events helps us see a bigger picture of how a system actually works. With this understanding we can make choices about how best to intervene to effect change such as modifying our mental models.

**EVENTS**
Observable behaviours; what has happened

**PATTERNS OF BEHAVIOUR**
The trends, or what has been happening over time

**UNDERLYING SYSTEMATIC STRUCTURE**
What are the structural forces at play contributing to these patterns?

**MENTAL MODEL**
What is it about our thinking that creates the systems and supports them persisting?
Visible

Reactive

Invisible

Proactive

Mental Models - Cultures

Systems

Trends & Patterns

Events

React

Anticipate

Reframe

Replenish

Regenerate
Delving below the surface of events helps us see a bigger picture of how a system actually works. With this understanding we can make choices about how best to intervene to effect change such as modifying our mental models.

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- Observable behaviours; what has happened

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**UNDERLYING SYSTEMATIC STRUCTURE**
- What are the structural forces at play contributing to these patterns?

**MENTAL MODEL**
- What is it about our thinking that creates the systems and supports them persisting?
How do STEM and community intersect?
Examining our mental models:

Community
Definition:
Give (assets, expertise, etc.):
Get (supports needed):

What kind of work would help strengthen this relationship? What are the roles of constellations?

STEM
Definition:
Give (assets, expertise, etc.):
Get (supports needed):

Core values:
- Diversity, Equity, and Inclusion
- Applicable STEM learning
- Everyone has expertise to offer

Suggest your own:

Reflect on your mental model:

What do you consider the strengths of Your thinking about STEM and community?

Do you notice any possible gaps, assumptions, or biases in your thinking?

*When STEM and community intersect, what does each give? What does each get?*
Mental Model Creations

Looking at our shared vision

1. Make your own mental model

2. Put key elements of your mental model on sticky notes and put it on your table’s mental model. Discuss.
THE ICEBERG
A Tool for Guiding Systemic Thinking

EVENTS
What just happened?
Catching a cold.

PATTERNS/TRENDS
What trends have there been over time?
I've been catching more colds
when sleeping less.

UNDERLYING STRUCTURES
What has influenced the patterns?
What are the relationships between the parts?
More stress at work, not eating well, difficulty
accessing healthy food near home or work.

MENTAL MODELS
What assumptions, beliefs and values do people hold
about the system? What beliefs keep the system in place?
Career is the most important piece of our identity,
healthy food is too expensive, rest is for the unmotivated.
Mental Model Creations

Looking at our shared vision

1. Create a group mental model.
2. Consider:
   • What is something you heard from others you hadn’t previously considered?
   • Did anything you heard shift your thinking?
   • How is your model connected with CMSNE’s mission/vision?
3. Answer the following questions:
   • How is your model connected to the constellation groups?
   • What resources to help us grow (such as gaps identified in the mental models) would be useful?