

#### UMASS DONAHUE INSTITUTE • APPLIED RESEARCH & PROGRAM EVALUATION

Massachusetts Science, Technology, Engineering, and Math (STEM) Pipeline Fund

# 2013 Regional STEM Networks Evaluation

Summary of Interview and Online Survey Findings

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## Contents

Executive Summary	1
Introduction	4
Evaluation Purposes and Research Questions	4
About this Report	5
Methodology	6
Results	10
I. Network Development and Engagement	10
II. Network Communication	
III. Network Alignment to State STEM Plan, Goals, and/or Projects	13
IV. Network Outcomes	14
V. Opportunities for Improvement	
Appendix A: Detailed Statewide Data	20
Appendix B: Network Manager Interview Protocol	28
Appendix C: Network Partner Interview Protocol	30
Appendix D: Online Survey Questionnaire	32
Appendix E: Network Reporting Worksheets	37

## **Executive Summary**

The 2013 Regional STEM Networks evaluation had two overarching purposes: (A) to understand the impact and value of the state's continuing investment in the Regional STEM Networks, such that informed decisions can be made relative to their continued funding, and (B) to identify opportunities for improvement in the quality and impact of the Regional STEM Networks, such that the return on state investments can be maximized.

This report presents key findings, focused primarily on data from an online survey administered to members of the Regional STEM Networks, and interviews of Network managers and selected key stakeholders. Because regional results capture the perceptions of differing numbers and types of respondents, survey findings are reported here as statewide averages ("statewide mean"). This ensures that no single region has an undue impact on the results. Further explanation of this approach is given in the Methodology section.

While there was no singular definition of "membership" across the seven Regional STEM Networks, University of Massachusetts Donahue Institute (UMDI) researchers and Massachusetts Department of Higher Education (DHE) staff considered it important to differentiate among the role and depth of engagement among members in a similar fashion across all regions. In conjunction with DHE, as well as input from the Network leaders, UMDI researchers developed a three-tiered definition of "membership" that was utilized in analysis of data from the online survey:

- A. "Inner Core" members: Individuals with substantive involvement with network activity and decision making. Deeply engaged partners in the enterprise.
- B. **"Engaged**" members: Individuals who may have attended meetings and/or been connected to activities, and were valued as collaborators with the Network leaders, but not at the same high level of intensity as the inner core of partners.
- C. "**Connected**" members: Individuals appearing on network contact lists who may or may not have participated in events or meetings or have had any formal connection to the network.

The key findings of this evaluation are organized into five categories, selected highlights of which are as follows:

#### I. Network Development and Engagement:

- Overall, Networks have made substantial progress in engaging their major constituent groups, particularly the PreK-12 and higher education sectors. When asked to what degree Networks had been successful in engaging different major constituent groups, 84% of respondents thought PreK-12 education had been engaged to a moderate or great extent. With regard to other sectors, 81% thought higher education, 66% thought non-profits, 65% thought business/industry, and 56% thought government had each been engaged to a moderate of great extent.
- In general, survey respondents reported being engaged with their networks, with 73% having reported attending an event supported or promoted by the Network in the past year, followed by 57% having reported attending an event supported or promoted by the Network in earlier years, and 52% having reported attending a network committee or board meeting in the past year.

#### II. Network Communication:

• The modes/methods of communication utilized by the Networks are extensive. All seven of the networks reported that in 2013 they maintained a listserv or mailing list, as well as a calendar of events posted online. Six reported that they maintained a full website and hosted special events. Five reported that they maintained a newsletter (either electronic or paper) and were Twitter members. Two reported utilizing all six of the above mentioned methods of communication.

• Almost 84% of survey respondents reported that they "most of the time" or "almost always" read the contents of emails they received from their network. Furthermore, a majority of individuals who read the emails reported taking some kind of action as a result of it, with 76% who reported that the email led to their attending a STEM event or activity, 75% who reported that they forwarded the email onward to another party, 57% who reported that they attended a network meeting, and 53% who reported that they sought additional information regarding a STEM issue or activity.

### III. Network Alignment to State STEM Plan, Goals and/or Projects:

- Interviews with Network leaders and key partners showed members at this level had both breadth and depth of knowledge concerning statewide STEM activities, including initiatives related to the Commonwealth's Governor's STEM Advisory Council. However, discussions with these individuals also revealed that the Networks face a certain degree of tension in terms of what they can accomplish related to these state activities/initiatives given the limited scope of resources they are able to access.
- All of the interviewees were able to describe ways in which their network was using either the Statewide STEM Plan, and/or its Quantitative Goals, to inform regional activities. The different ways ranged from using the Statewide STEM Plan as a template for the development of a regional strategic plan, outlining regional quantitative goals that parallel the statewide ones, identifying a subset of the quantitative goals (usually 2-4) on which to focus the Network's efforts, and/or identifying a particular sub-population on which to focus activities for all of the goals.
- Over 97% of respondents to the online membership survey who had attended a network meeting within the past year indicated that that "meetings were focused on issues consistent with the Statewide STEM Plan and/or its goals." Furthermore, among respondents generally (not just those who had attended a meeting), almost 82% reported that their engagement with the Regional STEM Network had increased their "awareness of state efforts to promote STEM education and employment opportunities" to a moderate or great extent.

### **IV. Network Outcomes:**

- In general, respondents to the online survey reported being more involved with STEM initiatives in their region over the past year than they were when they first joined. While responses of "moderate or high involvement" increased among all membership, the greatest change was among members categorized as connected (whose rate of moderate or high involvement increased from 50% to 64%).
- The majority of respondents reported that changes in their involvement with STEM initiatives were due to a "great" or "moderate" extent to their participation in their network. However, there exists a certain degree of information that indicates that members "get out what they put in" to the Regional STEM Networks. That is, that more involved members report greater change than less involved members.
- More than 75% of respondents reported establishing at least one new relationship due to participation in the Network. This was even higher for inner core (87%) and engaged (84%) members (again, an indication that more engaged members get more out of the Networks). Of the new relationships that were formed, 48% of respondents formed ones with Pre-K–12 education, 40% formed ones with higher education, and 34% formed ones with business/industry.
- When asked to what degree engagement in their network had increased respondents' individual/personal connections to other STEM stakeholders, 68% replied that it had to a moderate or great extent. However, when asked to what degree engagement in their network had increased their organization's connections to stakeholders from the same or different sectors, 57% replied that it had to a moderate or great extent for connections with stakeholders within the same sector and 50% for connections with stakeholders from other sectors.
- In addition to increasing connections and awareness/knowledge of statewide STEM issues, the Regional Networks were very successful in increasing respondents' personal awareness of



**regional STEM issues and initiatives, and connections to STEM resources** with 78% reporting that their engagement with the Network had increased their personal awareness of STEM <u>issues</u> in the region to a moderate or great extent, 83% reporting that their engagement with the Network had increased their personal awareness of STEM <u>initiatives</u> in the region to a moderate or great extent, and 74% reporting that their engagement with the Network had increased their personal awareness to useful STEM <u>initiatives</u> in the region to a moderate or great extent, and 74% reporting that their engagement with the Network had increased their personal connections to useful STEM resources to a moderate or great extent.

• 63% of respondents reported that involvement with the Network had increased their organization's engagement with regional STEM initiatives to a moderate or great extent while 56% of respondents reported that involvement with the Network had increased their organization's resources devoted to STEM initiatives to a moderate or great extent.

### V. Opportunities for Improvement

- 68% of respondents reported that their network was moderately or highly effective in coordinating existing STEM resources across the region. In addition, 60% of respondents reported that their network was moderately or highly effective in securing new resources to support STEM in the region.
- Local/regional level opportunities for improvement as summarized from the key informant interviews included: (A) increase collaboration with other networks, (B) find creative ways to increase Network staff administrative support, and (C) better utilize technology to overcome geographic barriers to coming to meetings.
- State level opportunities for improvement as summarized from the key informant interviews included: (A) centralization/standardization/coordination of online infrastructure, (B) increase the leadership role of the Networks, and (C) increase communication between the STEM Council and the Regional Networks.
- Suggestions for improvement that were made in various open-ended comments on the online survey included: (A) improve communication and/or marketing platforms, (B) provide or identify additional funding and resources to support Networks and membership programming, (C) increase outreach to business and industry, (D) expand stakeholders and increase/improve outreach in general, (E) develop and/or use strategic action plans (for Network / board meetings), (F) increase collaboration/inclusivity of all members / stakeholder groups, and (G) increase focus and/or resources on early childhood and out of school time.

In conclusion, data from the key informant interviews and online membership survey indicated the Regional STEM Networks were successful in building connected networks representing the broad range of partner organizations envisioned by the initiative. All of the Networks demonstrated progress relative to aligning STEM resources in their areas and members, especially "inner core" or "engaged," found the Networks valuable across a variety of indicators. This positive work occurred despite the economic downturn and the Networks having been asked to do more to further the Commonwealth's STEM Agenda while experiencing a decrease in funding.

As a result, in recent years, the primary role of the Networks has been to serve as conveners of STEM stakeholders, facilitators of STEM-related communication and opportunities, organizers of STEM-related resources, and conduits for linking the statewide STEM agenda to local entities within their regions. To these ends, the Networks have employed a variety of methods to inform area stakeholders about STEM initiatives and issues which have led directly to member actions ranging from simply sharing information to initiating new projects with new partners. Going forward, Network leaders and members have numerous recommendations for further improvement, including locally-focused opportunities tied to individual Networks' needs and resources, suggestions for statewide initiatives that could benefit the whole system, and detailed outlines of how the Networks could engage in better and expanded work if they had increased funding.

## Introduction

Since 2005, the Massachusetts Department of Higher Education (DHE) has contracted with the UMass Donahue Institute (UMDI) to provide a variety of research, evaluation, data analysis, and technical assistance services to the Commonwealth's Science, Technology Engineering, and Mathematics (STEM) Pipeline Fund. The Fund was established in 2004 with three purposes:

- Increase the number of Massachusetts students who prepare for and enter STEM careers,
- Increase the number of qualified STEM teachers in the Commonwealth, and
- Improve the STEM educational offerings.

As a means of fulfilling these purposes, the DHE created a system of "Regional STEM Networks" that would bring together stakeholders from all sectors ranging from early education through employers to (a) address STEM issues of importance within their geographic area, and (b) more easily connect local efforts to statewide initiatives.

As part of its FY13 contract, DHE asked UMDI to evaluate the system of Regional STEM Networks (henceforth referred to simply as "Networks") for which an external evaluation had last been conducted in 2010. The goal of this evaluation was to assess progress in the development of the Regional Networks, to understand the scope and nature of activities they support or inspire, and to understand the value of the Networks to the pursuit of Statewide STEM Plan and its Goals.

### **Evaluation Purposes and Research Questions**

The 2013 Regional STEM Network evaluation was conducted between March and May and had two overarching purposes: (A) to understand the impact and value of the state's continuing investment in the Regional STEM Networks, such that informed decisions can be made relative to their continued funding, and (B) to identify opportunities for improvement in the quality and impact of the Regional STEM Networks, such that the return on state investments can be maximized.

Below are the core research questions that drove inquiry protocols and enabled the evaluation to fulfill the above purposes. These questions were based on information collected during the 2013 state fiscal year:

- 1. To what extent have Regional Networks succeeded in building engaged and connected networks representing the broad range of partner organizations envisioned by the initiative?
- 2. How effective was Regional Network communication relative to informing stakeholders about STEM initiatives and needs? Did communication lead to desired actions on the part of those informed?
- 3. To what extent did Regional Network activities demonstrate progress relative to aligning and enhancing STEM resources and initiatives?
  - a. What types of capacity and activity were facilitated or catalyzed by regional networks?
  - b. What types of organizations participated in the planning, support, and execution of initiatives identified as being facilitated or catalyzed by regional network?
  - c. To what extent did identified initiatives align with the priorities of the state STEM plan?

- 4. In what ways did reduced funding for Networks and activities affect the Regional Networks' ability to attain key goals and enhance STEM interest and capacity? What creative approaches emerged to offset any losses in this regard?
- 5. What opportunities exist to enhance the productivity and effectiveness of the Regional Networks?

### About this Report

This report presents key findings of a mixed method evaluation, focused primarily on data from an online survey administered to members of the Regional STEM Networks and interviews of Network managers and selected key stakeholders. These and other sources of information are further described in the Methodology section, with the specific protocols and instruments included in the appendices. All findings are presented at the state level. Because regional results capture the perceptions of differing numbers and types of respondents, survey findings are reported as statewide averages ("statewide mean"). This ensures that no single region has an undue impact on the results as they are presented in this report. Further explanation of this approach is given in the Methodology section. Regional data will be conveyed to DHE through other reporting mechanisms.

Key findings are presented in the Results section, and are organized into five categories:

- VI. Network Development and Engagement
- VII. Network Communication
- VIII.Network Alignment to State STEM Plan, Goals and/or Projects
- IX. Network Outcomes
- X. Opportunities for Improvement

Abbreviated data tables (related to quantitative data associated with the online survey of Network members), common themes from (a) the online survey's open ended questions, and (b) the in-person interviews conducted with the Network managers and selected key stakeholders, and summaries of data collected through DHE's required year-end reporting are presented alongside each key finding. Detailed statewide data tables for the online survey questions are provided in Appendix A.

## Methodology

The 2013 Regional STEM Network evaluation used a mixed-methods research strategy that collected primary data from network project leaders, board members, cooperating partners, and other members, as well as program data maintained by DHE. Methods included: (1) key informant interviews, (2) an online survey of Network members, and (3) data collected through DHE's year-end reporting requirements for the Networks, including some data collected on a pilot basis. Each of these is described in more detail below:

<u>Key Informant Interviews</u>: Regional Network leaders were engaged through a personal interview process intended to build UMDI knowledge of the context in which activity is occurring and to gain critical perspective on the study research questions. These interviews followed a semi-structured protocol (see Appendix B) which focused inquiry, but also allowed for exploration of unanticipated themes that might be relevant to the evaluation. The lead managers of all seven networks were interviewed, either alone, or in conjunction with a staff member who was assigned to support the Network.

In addition, Network leaders were asked to provide the name of a "key Network partner" to serve as a complementary interviewee. The Network leaders were instructed to identify someone who brought deep knowledge of the Network, but from a different perspective than their own and which would be reflective of the sector in which they work (e.g., K-12 education, higher education, business, government, etc.). The interview protocol for these key partners was also semi-structured (see Appendix C). A total of seven (one per regional network) key partners were interviewed.

Both the Network leader and key partner interviews occurred before the development of the wider Online Membership Survey and their responses were used to inform development of that instrument. In addition, interview responses were used to support interpretation of the Online Membership Survey findings. All interviews were recorded, with summary notes subsequently developed by the interviewers. They were analyzed together by the team of three staff members who served as the interviewers to identify common themes.

**Network Member Surveys**: There is no singular definition of "membership" across the seven Regional STEM Networks, and networks also maintain varied advisory board and steering committee structures. While the researchers understood that "membership" was an inconsistent construct, it was considered important to differentiate among the role and depth of engagement among members in a similar fashion across all regions. In conjunction with staff from DHE, as well as input from the Network leaders, UMDI researchers developed a three-tiered definition of "membership" as follows:

- A. **"Inner Core**" members: Individuals with substantive involvement with network activity and decision making. Deeply engaged partners in the enterprise.
- B. **"Engaged**" members: Individuals who may have attended meetings and/or been connected to activities, and were valued as collaborators with the Network leaders, but not at the same high level of intensity as the inner core of partners.
- C. "**Connected**" members: Individuals appearing on network contact lists who may or may not have participated in events or meetings or have had any formal connection to the network.

Network Leaders then provided UMDI staff with contact lists where their members were categorized into each of the above groups. The distribution of types of members is described in Table 1 below (note that the Berkshire

Table 1 - Response Rates Based on Original Assignment of Region in Mailing Lists								
	Origi	nal Mailing L	ist Distribution		Survey Respondents			
	Inner Core	Engaged	Connected	Total	Inner Core	Engaged	Connected	Total
Berkshire	17	N/A	34	51	13	N/A	13	26
Boston	10	73	41	124	6	32	12	50
Central	12	36	97	145	11	18	19	48
MetroWest	10	32	49	91	7	19	8	34
Northeast	13	41	59	113	9	13	19	41
Pioneer Valley	18	47	263	328	13	8	51	72
Southeast	8	136	1,212	1,356	5	38	290	333
Multiple	0	2	130	132	0	2	44	46
Total	88	367	1,885	2,340	64	130	456	650

Network did not provide a list of "engaged" members). It should be noted that over half of the mailing list members, as well as survey respondents, were associated with the Southeast Network.

One issue discovered through survey data analysis was that not all respondents self-identified with the regional network to which they had been originally assigned. The majority of original network assignments were a consequence of an individual appearing on only a single network's lists. In cases where an individual appeared on the lists of two or more networks, UMDI staff chose to affiliate that individual with the network with which they had the highest type of membership. However, in some cases, the individual was categorized at the same membership level in multiple networks. In these cases, individuals remained labeled as originally belonging to "multiple networks."

The response rate calculations presented in Table 2 account for these differences in assigned versus selfidentified network affiliation, as well as undeliverable email addresses. Overall, response rates followed logical trends, with those individuals identified as most deeply involved in the Networks showing greater responsiveness than those categorized as less engaged. The average response rate for all members across the seven networks was 25%: 73% among inner core members, 34% among engaged members, and 22% among connected members. However, this varied widely when both membership type and regional network were taken into account. The highest response rate (92%) was among the inner core members within the Central Network while the lowest response rate (13%) was among the engaged members within the Pioneer Valley Network.

Table 2 - Response Rates Based on Respondents' Self-Identified Region							
	Response Rate						
	Inner Core	Engaged	Connected	Total			
Berkshire	76.5%	N/A	45.0%	54.4%			
Boston	60.0%	38.6%	51.6%	45.8%			
Central	91.7%	53.8%	16.2%	32.0%			
MetroWest	70.0%	59.4%	31.7%	43.8%			
Northeast	69.2%	36.4%	38.8%	41.1%			
Pioneer Valley	72.2%	13.0%	19.9%	21.8%			
Southeast	62.5%	24.8%	18.6%	19.5%			
Total	72.7%	34.1%	21.5%	25.4%			



The Online Membership Survey was developed by UMDI staff and submitted to DHE staff as well as the seven Network leaders for review and input prior to administration. The survey was developed to be sensitive to differences among the networks and allow respondents to self-identify their formal and informal relationship to each network, such that more global views of engagement could be developed (see Appendix D for the full instrument).

The survey was administered by UMDI using Qualtrics, an online survey tool with advanced survey design and administration features. Network leaders submitted lists of email addresses to UMDI which were then input into Qualtrics so that email notices could be sent out directly from that system, and individuals could be tracked to see who responded and who did not (to support ongoing survey administration). The survey was open for approximately three weeks (during late May and early June). When it was closed, the data were exported to SPSS for analysis, including basic frequency distributions and cross-tabulations of key subgroup responses.

In discussions with DHE, it emerged that presentation of the survey results from a statewide, system perspective (that spanned all of the networks and where each one was an equal contributor to a statewide average) was important. In order for each network to be represented equally within the system of Regional STEM Networks (i.e., so that networks with more respondents did not overshadow ones with fewer), UMDI calculated percentages for each Network, and then averaged those percentages. This approach resulted in each network contributing equally to the statewide mean/average. Consequently, discussions of results in this report will refer to the "average of the seven regional networks" or the "statewide mean" as opposed to simply a "statewide total."

**DHE Year-end Reporting Data for the Regional Networks**: UMDI worked in collaboration with DHE to develop a series of data collection worksheets to be filled out by Network managers as part of their regular year-end reporting. The worksheets were intended to standardize the collection of data and to pilot test collection of an expanded set of data that had been gathered voluntarily in past years by one or more of the networks. DHE has deemed these additional data to be especially informative of the "added value" of the Networks. A total of five short worksheets (see Appendix E) were developed, each formatted to a spreadsheet page to facilitate ease of data input and analysis. The information requested through each worksheet was as follows:

- Information about Network Meetings: A list of types of official meetings (based on the kinds of meetings the Networks had reported on in previous years) where Network managers simply input the number of times they had held each type of meeting over the past year. Space was included for managers to list "other" types of meetings if they held one that did not fit into the other categories.
- 2) Information about Network Communication: A list of various types of outreach that Networks had reported utilizing in past years, where Network managers simply put a check mark by each type they had used during the FY2013 fiscal year. Again, space was included for managers to list "other" types of communication if they held one that did not fit into the other categories.
- 3) Information about Network Activities: The worksheet included two check-off lists. The first was a list of the general kinds of projects (e.g., career fair, externships) Networks reported being involved with in past years. The second was a list of the official "@Scale Initiative" projects that were being sponsored by the STEM Pipeline Fund and the Governor's STEM Advisory Council. As with worksheets 1 & 2, managers simply put a check next to projects with which their network was involved in 2013, and could add additional ones that were not listed.
- 4) Information about Alignment with State STEM Activities: A last check-off list asking Network managers to identify the Quantitative Goals, Qualitative Goals, and other aspects of State STEM Activities that were a "substantive focus" of their network over the past year.
- 5) Information about **Network Return on Investment**: This was an optional worksheet for FY13 for reporting information on the value of cash sponsorships, in-kind donations, and volunteer service contributed to the Regional STEM Networks in support of both their network activities as well as student,

teacher, parent, or other project activities. The worksheet was developed based on information that had been collected voluntarily by two of the networks in the past. In addition to completing the worksheet, managers were asked to give feedback on the information requested and to make suggestions for how the information might be collected most easily from them in the future. Feedback on this draft will be used to modify the worksheet for FY2014 when it will become a required part of the Networks' annual reporting.

The Network Reporting Worksheets were submitted to DHE staff, who then sent out the worksheets as part of their year-end reporting request/template. In addition, the worksheets were reviewed at a meeting of the Network managers to address any questions and/or clarify the kind of information being requested. After filling out the worksheets, the managers uploaded them to their account in the DHE's online reporting portal. DHE staff, then, downloaded the completed worksheets and forwarded them to UMDI for review.



## Results

The system of Regional STEM Networks in Massachusetts was established in 2004, as part of the Commonwealth's STEM Pipeline Initiative. In recent years, the primary purpose of these groups has been to serve as conveners of STEM stakeholders, facilitators of STEM-related communication and opportunities, organizers of STEM-related resources, and conduits for linking the statewide STEM agenda to local entities within their geographies. However, in earlier years, the Networks operated with larger budgets that allowed them to offer more direct support to student and teacher STEM programs in their regions, a practice that continues—albeit to a much lesser extent—in some networks.

Over time, each network has developed in accordance with the needs and resources of its geography. This study explores the nature of member engagement within the Networks, how the Networks communicate with their members, the degree to which the Networks are aligning with state priorities, the various effects the Networks are having on members, and ways in which the Networks might be strengthened. Following are major findings derived through the study.

### I. Network Development and Engagement

Network leaders submitted email address lists to the UMDI evaluation team that included a total of 2,340 different individuals. Approximately 4% of these members were identified as "inner core" participants: individuals who had substantive involvement with network activity and decision making. About 16% were identified as "engaged" participants: individuals who may have attended meetings, been connected to activities, or are valued as collaborators. Some 81% of these members were identified simply as "connected" to the Networks: individuals with a fairly limited connection to the Networks, whether passive (e.g., being included on a listserv) or active (e.g., attending an event or activity).

The Regional STEM Networks have generally been successful in engaging stakeholders from their five major constituent groups (see Table 3). Individuals associated with the early and K-12 education sector comprised the largest percentage of respondents to the survey, both as a statewide mean, as well as in six of the seven networks individually). However, this did vary by membership type, with K-12 education comprising a lower percentage of inner core members than engaged or connected members. This might be explained by a school district being represented by a single person at the engaged or inner core level, but having multiple teachers/staff who receive information from the Network at the connected level. Individuals who reported belonging to the higher education sector made up the second largest percentage for the statewide mean, while individuals who reported belonging to business/industry & WIB/REB made up the third largest percentage.

Table 3 - With which sector do you most closely identify? (Select Only One.)						
	Statewide Mean					
	All	Inner Core	Engaged	Connected		
Early Education and K-12 Education	46.4%	28.6%	48.7%	53.9%		
Higher Education	23.2%	26.2%	22.0%	21.7%		
Business / Industry & WIB / REB	13.3%	20.9%	8.1%	12.2%		
Non-profit & Out-of-School Time	11.1%	15.9%	13.2%	7.9%		
Government	2.8%	0.0%	3.4%	3.4%		

Overall, Networks have made substantial progress in engaging their major constituent groups,

**particularly the PreK-12 and higher education sectors.** As presented in Table 4, when asked to what degree the Networks had been successful in engaging different major constituent groups, the statewide mean was that 84% of respondents thought that PreK-12 education had been engaged to a moderate or great extent, 81% thought higher education had been engaged to a moderate or great extent, 66% thought non-profits had been engaged to a moderate or great extent, 65% thought business/industry had been engaged to a moderate or great extent extent, and 56% thought government had been engaged to a moderate or great extent.

Table 4 - Based on your observation, to what extent has the Network succeeded in engaging each of the following sectors in its work?					
		Statewide Mean			
		All	Inner Core	Engaged	Connected
PreK-12 Education	Moderate or Great Extent	84.1%	98.8%	91.7%	75.9%
Higher Education	Moderate or Great Extent	80.6%	92.0%	82.5%	75.7%
Business / Industry	Moderate or Great Extent	65.0%	60.9%	81.7%	56.4%
Government	Moderate or Great Extent	56.4%	62.3%	58.4%	62.8%
Non-Profit	Moderate or Great Extent	65.6%	69.6%	73.2%	64.0%

It should be noted that perceptions around degree of engagement did vary both by level of member involvement (with less involved members generally seeing sectors as less engaged than more involved members) as well as by respondents' sector (with preK-12 education and business/industry rating their own engagement lower than other sectors rated it). In addition, a theme that emerged from the interviews with Network leaders and key partners was that furthering engagement with business/industry was a high priority, even when the interviewees were associated with networks where business/industry engagement was rated fairly high by online survey respondents.

**In general, survey respondents reported being engaged with their networks** (see Table 5), with the statewide mean for attending an event supported or promoted by the Network in the past year being 73% (ranging from 92% among inner core members to 67% among connected members), followed by 57% for attending an event supported or promoted by the Network in the past (ranging from 67% among inner core members to 49% among connected members), and 52% for attending a Network committee or board meeting in the past year (ranging from 86% among inner core members to 21% among connected members).

Table 5 - In what way(s) are you or have you been involved with this Network? (Select all that apply.)					
	Statewide Mean				
	All	Inner Core	Engaged	Connected	
Attended a Network committee or board meeting - Current Year	51.9%	86.2%	64.7%	20.5%	
Attended an event supported or promoted by the Network - Current Year	72.5%	91.6%	67.9%	66.9%	
Attended an event supported or promoted by the Network - Past Year(s)	56.6%	67.3%	58.3%	49.4%	

\* Percentages add up to more than 100% due to "Select all that apply."

Among respondents who reported having attended at least one Network meeting in the past year (see Table 6) the statewide mean of those who strongly or generally agreed that meetings were productive was 88% (ranging from 96% among engaged members to 79% among connected members) while the statewide mean of those who strongly or generally agreed that the meetings were attended by a wide range of stakeholders was also 88% (ranging from 91% among engaged members to 80% among connected members).

Table 6 - To what extent do you agree with the following statements regarding any Network meeting(s) you attended this year?						
		Statewide Mean				
		All	Inner Core	Engaged	Connected	
Meetings were productive	Strongly or Generally Agree	88.2%	89.1%	95.8%	79.0%	
Meetings were attended by a wide range of stakeholders	Strongly or Generally Agree	87.8%	88.2%	90.6%	79.5%	

### II. Network Communication

Central functions of the Regional STEM Networks are to serve as conveners and sources of information. As such, effective communication with STEM stakeholders within their region is of great importance. Because they cater to a wide variety of institutions and individuals—ranging from STEM "novices" to people with decades of experience, and from representatives of large organizations to people volunteering on their own—the Networks need to use a wide variety of methods for their outreach. Some of these are "passive" (things like newsletters that are forwarded out to stakeholders, and require a minimal amount of effort on the individual's part to participate) while other forms are "active" (things like websites or special events that require some level of action on the part of the stakeholder before information can be delivered).

The modes/methods of communication utilized by the Networks are extensive, although it does vary to some degree by region. According to their year-end reports, all seven of the networks reported that in the 2013 fiscal year they maintained a listserv or mailing list, as well as a calendar of events posted online. Six of the seven networks reported that they maintained a full website and hosted special events. Five of the seven networks reported that they maintained a newsletter (either electronic or paper) and were Twitter members. Two of the seven networks reported utilizing all six of the above mentioned methods of communication. Other methods of communication reported by the Networks in their year-end worksheets included: Facebook page (four), a regional program inventory (four), a blog (one), a promotional video (one), and a webzine (one).

Not only do the types of communication utilized by each network differ, but the breadth of their communication reach varied strongly. For example, in one network, the number of individuals included on their list of "connected" members was 1,212 (adjusted for undeliverable emails and the email addresses of individuals who were assigned to another network because they were part of a more engaged membership level), while in another it was only 34 people. The lists of engaged members also had a fairly wide spread with one network listing 136 people while another did not provide a list for this category at all. The lists of inner core members, however, covered a much more bounded range with one network listing 18 people and another listing eight.

According to the statewide mean, almost 84% of survey respondents reported that they "most of the time" or "almost always" read the contents of emails they received from their associated network (see Table 7). This rate was almost 93% for members who were categorized as "inner core." It should be noted, here, that the survey results are likely to be biased toward individuals who read the emails, as the notice about participating in the survey was sent out using the same lists that the Networks use themselves regularly.

Table 7 - How often do you read the contents of these emails?					
	Statewide Mean				
	All	Inner Core	Engaged	Connected	
Almost Always	50.7%	65.8%	47.1%	43.8%	
Most of the Time	33.1%	27.1%	32.9%	36.6%	

Perhaps more importantly, as can be seen in Table 8, a majority of individuals who read the emails reported taking some kind of action as a result of it, with a statewide mean of 76% who reported that the email led to their attending a STEM event of activity, 75% who reported that they forwarded the email onward to another party, 57% who reported that they attended a Network meeting, and 53% who reported that they sought additional information regarding a STEM issue or activity. While these rates were generally higher among more engaged members (inner core and engaged), they were still above 70% for attending a STEM event/activity or forwarding the communication onward among connected members.

Table 8 - Which of the following actions have you taken as a result of emails you received from this Network? (Choose all that apply.)					
		Statewide Mean			
	All	Inner Core	Engaged	Connected	
Attended a Network meeting	57.1%	89.1%	70.2%	29.8%	
Attended a STEM event or activity	76.0%	85.6%	82.0%	71.9%	
Sought additional information regarding a STEM issue or activity	52.7%	56.0%	50.9%	54.7%	
Sought to connect with a group or individual regarding a STEM topic or initiative	45.0%	51.2%	47.8%	41.2%	
Forwarded the communication to someone else you thought may have interest	75.4%	88.7%	71.3%	70.3%	

\* Percentages add up to more than 100% due to "Select all that apply."

The statewide mean of survey respondents who reported visiting their network's website or blog at least once in the past year was 77%—with over 40% reporting they had visited it four or more times. Similar to information distributed via email, more engaged members (especially inner core in this case) reported visiting their network's website or blog at a higher rate than less engaged members. A majority of members (a statewide mean of 58%) also reported that they remember sharing their network's website or blog address with another party.

### III. Network Alignment to State STEM Plan, Goals, and/or Projects

Interviews with Network leaders and key partners showed members at this level had both breadth and depth of knowledge concerning statewide STEM activities, including initiatives related to the Commonwealth's Governor's STEM Advisory Council (i.e., the State STEM Plan, the Statewide STEM Goals, and the @Scale Initiative). However, discussions with these individuals also revealed that the Networks face a certain degree of tension in terms of what they can accomplish related to these state activities/initiatives given the limited scope of resources they are able to access.

All of the interviewees were able to describe ways in which their network was using either the Statewide STEM Plan, and/or its Quantitative Goals, to inform regional activities. The different ways ranged from using the Statewide STEM Plan as a template for the development of a regional strategic plan, outlining regional Quantitative Goals that parallel the statewide ones, identifying a subset of the Quantitative Goals (usually 2-4) on which to focus the Network's efforts, and/or identifying a particular sub-population on which to focus activities for all of the Goals.

As can be seen in Table 9, over 97% (the statewide mean) of respondents to the online membership survey who had attended a Network meeting within the past year indicated that that "meetings were focused on issues consistent with the Statewide STEM Plan and/or its goals." The response rate to this question was 100% among inner core members.

Table 9 - To what extent do you agree with the following statements regarding any Network meeting(s) you attended this year?						
		Statewide Mean				
		All	Inner Core	Engaged	Connected	
Meetings were focused on issues consistent with the statewide STEM Plan and/or its goals	Strongly Agree	56.8%	61.4%	54.1%	28.0%	
	Generally Agree	40.7%	38.6%	42.5%	70.8%	

Furthermore, as can be seen in Table 10, among respondents generally (not just those who had attended a meeting), almost 82% reported that their engagement with the Regional STEM Network had increased their "awareness of state efforts to promote STEM education and employment opportunities" to a moderate or great extent.

Table 10 - How has engagement with this Network affected you? To what extent has it increased your?					
			Statew	ide Mean	
		All	Inner Core	Engaged	Connected
Awareness of state efforts to promote STEM education and employment opportunities	Great Extent	38.4%	58.2%	39.1%	28.8%
	Moderate Extent	43.2%	31.2%	42.8%	48.9%

In the year-end reports, six of the seven regional networks reported being involved with two or more of Commonwealth's "@Scale" initiatives: two of the seven were each involved with five of the @Scale initiatives, two were each involved with four of the initiatives, and two were each involved with two. One network was not involved with any of the @Scale initiatives.

### **IV. Network Outcomes**

In general (the statewide mean), respondents to the online survey reported being more involved with STEM initiatives in their region over the past year than they were when they first joined (see Tables 11 and 12). While responses of "moderate or high involvement" increased among all membership types (including inner core members—whose rate of moderate or high involvement increased from 86% to 95%), the greatest percentage point change was among members categorized as connected (whose rate of moderate or high involvement increased from 86% to 95%), the greatest percentage point change was among members categorized as connected (whose rate of moderate or high involvement increased from 50% to 64%).

Table 11 - How would you characterize your involvement in regional STEM initiatives at the time you first engaged         with this Network?				
	Statewide Mean			
	All	Inner Core	Engaged	Connected
High or Moderate Involvement	59.4%	87.5%	61.3%	49.8%

Table 12 - How would you characterize your involvement in regional STEM initiatives over the past year?											
		Statew	ide Mean								
	All	Inner Core	Engaged	Connected							
High or Moderate Involvement	71.7%	95.3%	69.5%	63.8%							

The majority of respondents reported that changes in their involvement with STEM initiatives were due to a "great or moderate extent" to their participation in their network. However, there exists a certain degree of



information that indicates that members "get out what they put in" to the Regional STEM Networks. That is, more involved members report greater change than less involved members. For example, when asked the follow-up question concerning their level of involvement—to what degree they would attribute any increase in their involvement in regional STEM initiatives to their participation in the Network?—the statewide mean was 70% of the inner core members who had attributed their increased involvement to their Network engagement compared to only 56% of connected members (see Table 13).

Table 13 - If there has been a change in your level of involvement with r           engaged with the Network, to what extent is it attributable to you	egional : ur partici	STEM initiati	ves since e Network'	you first ?
		Statew	ide Mean	
	All	Inner Core	Engaged	Connected
Great or Moderate Extent	60.0%	69.1%	71.0%	55.9%

One of the fundamental purposes of the Regional STEM Networks is to serve as conveners and facilitators of connections. When survey respondents were asked with which sectors they had established new relationships as a result of participation in their network, more than 75% of respondents reported establishing at least one new relationship due to participation in the Network. This was even higher for inner core (87%) and engaged (84%) members (again, an indication that more engaged members get more out of the Networks). Of the new relationships that were formed, the statewide mean was that 48% of respondents formed ones with PreK-12 education, 40% formed ones with higher education, and 34% formed ones with business/industry (see Table 14).

Table 14 - With which sector(s) have you or your institution established new relationships as a result of participationin this Network?(Choose all that apply.)											
	Statewide Mean										
	All	Inner Core	Engaged	Connected							
None	23.1%	13.2%	16.0%	28.8%							
Pre K - 12 Education	48.2%	65.7%	51.5%	44.6%							
Higher Education	39.6%	52.0%	54.6%	25.5%							
Business / Industry	33.8%	48.6%	41.4%	22.8%							
Government	10.3%	15.0%	18.1%	7.7%							
Non-profit	23.1%	27.6%	34.3%	16.7%							
Other (please specify)	2.7%	5.2%	1.2%	1.7%							

\* Percentages add up to more than 100% due to "Select all that apply."

It should be noted that the Networks appear to have a greater effect on the individuals who participate in them than on the organizations/institutions these individuals may represent (see Tables 15 and 16). For example, **when asked to what degree engagement in their network had increased respondents' individual/personal connections to other STEM stakeholders, 68% (statewide mean) replied to a moderate or great extent (ranging from 93% among inner core members to 55% among connected members). However, when asked to what degree engagement in their network had increased their organization's connections to stakeholders from the same or different sectors, 56.7% (statewide mean) replied to a moderate or great extent for connections with stakeholders within the same sector, and 50% for connections with stakeholders from other sectors. This might be explained by differences in the longevity of institutional participation versus individual participation: while an institution may lose some connections when staff change, they do not lose all of them. However, a new, incoming staff person may not possess as many personal connections as are already in place for their institution.** 

Table 15 - How has engagement with this Network affected you? To what extent has it increased your?											
		Statewide Mean									
		All	Inner Core	Engaged	Connected						
	Great Extent	37.5%	52.4%	42.6%	24.0%						
Connections to other STEM stakeholders	Moderate Extent	30.8%	41.0%	26.1%	30.5%						
	Small Extent	22.4%	4.8%	27.4%	30.5%						
	Not At All	9.3%	1.8%	3.9%	15.0%						

 Table 16 - How has participation in this Network affected your organization? To what extent has it increased your organization's...?

			Statew	ide Mean	
		All	Inner Core	Engaged	Connected
	Great Extent	19.1%	33.9%	20.0%	12.1%
Connections with STEM stakeholders within the	Moderate Extent	37.6%	41.4%	44.3%	31.6%
same sector	Small Extent	33.5%	18.1%	31.4%	42.6%
	Not At All	9.8%	6.5%	4.3%	13.7%
		All	Inner Core	Engaged	Connected
	Great Extent	17.1%	28.8%	17.2%	12.1%
Connections with STEM stakeholders from other	Moderate Extent	32.9%	37.7%	34.7%	26.7%
sectors	Small Extent	33.7%	21.9%	35.9%	39.6%
	Not At All	16.3%	11.5%	12.2%	21.6%

#### Selected Open-Ended Comments from the Online Membership Survey Regarding New Relationships

Network was instrumental in getting me and my organization involved in running and growing the regional middle school science and engineering fair. We have increased participation from 25 projects in 2007-2008 to 196 projects in May 2013.

We are working on a long-range plan with a non-profit partner, who we connected with through the Network. Our longrange plan includes shared events, shared resources, shared activities (at their site and at ours), new programming and/or curriculum design that is informed by one another, and we anticipate submitting joint grant proposals to support some of our new collaborative efforts.

Collaboration with a corporate member of the Board helped me obtain grants and connections with United Way. It also empowered me to become a member of the Subcommittee of the State STEM Council and connected me with opportunities to lead professional development for OST through the Readiness Center at MCLA.

My company is looking for STEM workers worldwide and encourages all employees to engage the community promoting STEM careers. Recent interactions with the networks have led to a new university adoption of the company to support local activities in our staffing pipeline.

We have established a STEM advisory council to help us create meaningful STEM educational activities that take place outside of the traditional classroom (on a field trip). The people in the SE STEM network ... have been helpful in fostering further engagement with different groups and helping us to make new and deeper connections with groups such as DIGITS. It also led to us meeting with the executive director of the Governor's STEM Advisory Council to discuss ways we can further promote STEM education and STEM Educators. Interestingly, just as personal connections increased more among higher-level members than among lower-level ones, so too did institutional connections. The statewide mean for inner core members who reported that their institution's connections to stakeholders within the same sector increased to a moderate or great extent was 75%, compared to 44% among connected members. In addition, the statewide mean for inner core members who reported that their institution's connections to stakeholders from other sectors increased to a moderate or great extent was 67%, compared to 39% among connected members.

In addition to increasing connections and awareness/knowledge of statewide STEM issues, the Regional Networks were very successful in increasing respondents' personal awareness of regional STEM issues and initiatives, and connections to STEM resources (see Table 17). The statewide mean for those reporting that their engagement with the Network had increased their personal awareness of STEM issues in the region to a moderate or great extent was 78% (ranging from 86% among inner core members to 71% among connected members). The statewide mean for those reporting that their engagement with the Network had increased their personal awareness of STEM initiatives in the region to a moderate or great extent was 83% (ranging from 96% among inner core members to 73% among connected members). Lastly, the statewide mean for those reporting that their engagement with the Network had increased their personal connections to useful STEM resources to a moderate or great extent was 74% (ranging from 86% among inner core members to 69% among connected members).

Table 17 - How has engagement with this Network affected you? To what extent has it increased your?												
		Statewide Mean										
		All	Inner Core	Engaged	Connected							
	Great Extent	35.3%	46.0%	36.8%	27.3%							
Awaranasa of STEM related issues in your region	Moderate Extent	42.8%	39.8%	44.0%	44.1%							
	Small Extent	17.0%	8.8%	15.5%	22.6%							
	Not At All	4.9%	5.4%	3.7%	6.0%							
	All	Inner Core	Engaged	Connected								
	Great Extent	42.0%	56.1%	42.3%	30.6%							
Awareness of STEM-related initiatives in your	your Moderate Extent 40.8% 39.7%			40.9%	42.6%							
region	Small Extent	14.3%	2.4%	16.0%	21.4%							
	Not At All	2.9%	1.8%	0.8%	5.4%							
		All	Inner Core	Engaged	Connected							
	Great Extent	29.4%	40.7%	34.7%	23.7%							
Connections to useful STEM resources	Moderate Extent	44.3%	45.3%	39.0%	45.4%							
	Small Extent	18.5%	11.6%	22.0%	18.3%							
	Not At All	7.7%	2.4%	4.3%	12.6%							

When asked to what degree of engagement with the Network had increased their individual/personal capacity to promote STEM interest, education, or careers, the statewide mean for those replying to a moderate or great extent was 69% (ranging from 89% among inner core members to 59% among connected members).

Looking at additional effects of the Networks on institutions (see Table 18), **the statewide mean of respondents who reported that involvement with the Network had increased their organization's engagement with regional STEM initiatives to a moderate or great extent was 63%** (ranging from 78% among inner core members to 51% among connected members). The statewide mean of respondents who reported that involvement with the Network had increased their organization's resources devoted to STEM initiatives to a

moderate or great extent was 56% (ranging from 73% among inner core members to 47% among connected members).

Table 18 - How has participation in this Network affected your organization? To what extent has it increased your         organization's ?											
		Statewide Mean									
		All Inner Core Engaged Conne									
	Great Extent	20.1%	32.4%	23.9%	12.3%						
Engagement with regional STEM-related	Moderate Extent	42.4%	46.0%	46.2%	38.2%						
initiatives	Small Extent	27.0%	15.1%	23.5%	34.3%						
	Not At All	10.5%	6.5%	6.4%	15.2%						
		All	Inner Core	Engaged	Connected						
	Great Extent	17.7%	32.3%	16.6%	13.6%						
Persources devoted to STEM related initiatives	Moderate Extent	38.4%	41.1%	48.6%	33.0%						
Resources devoted to STEIN-related mitiatives	Small Extent	29.7%	17.8%	22.6%	37.5%						
	Not At All	14.2%	8.8%	12.2%	15.8%						

Finally, when asked to what degree engagement with the Network had increased their organization's capacity to promote STEM interest, education, or careers, the statewide mean for those replying to a moderate or great extent was 58% (ranging from 72% among inner core members to 50% among connected members).

## V. Opportunities for Improvement

In general, the statewide mean of respondents who reported that their Network was moderately or highly effective in coordinating existing STEM resources across the region was 68% (ranging from 78% among inner core members to 58% among connected members). In addition, the statewide mean of respondents who reported that their network was moderately or highly effective in securing new resources to support STEM in the region was 60% (ranging from 71% among inner core members to 55% among connected members). So, while they have had success in these areas, there are still opportunities for improvement.

During the key information interviews, both Network leaders and key partners were asked about opportunities for improvement for their network. Taken as a group, the responses from these interviews fell into two categories: (A) opportunities for improvement at the local/regional level, and (B) opportunities for improvement at the state level (that would have ramifications for improvement at the local/regional level). Common themes that emerged from these discussions included:

- 1) Local/Regional Level Opportunities for Improvement
  - a. Increase collaboration with other networks: actively request information about best practices in other regions that might improve the local network.
  - b. Find creative ways to increase Network staff administrative support.
  - c. Better utilize technology to overcome geographic barriers for coming to meetings.
- 2) State Level Opportunities for Improvement (with Ramifications for Local/Regional Improvement)
  - a. Centralization of online infrastructure: while each network does need to maintain their own, independent online presence, perhaps economies of scale could be achieved through a degree of

centralization/standardization of the websites through a master state-level STEM portal. Develop statewide STEM directories (e.g., of projects, "Wants vs. Haves," program best practices)

- b. Increase the leadership role of the Networks: the STEM Council could do more to empower them (including giving them a role in management of the @Scale Initiative).
- c. Increase communication between the STEM Council and the Regional Networks.

While the Online Membership Survey did not have an explicit open-ended question asking about opportunities for Network improvement, a number of responses within the available open-ended questions did address that issue. A total of 138 responses were given to the various open-ended questions on the Online Membership Survey (removing DK, none, etc.). Below are the most common themes that emerged from them related to opportunities for Network improvement:

- Improve communication and/or marketing platforms: This included improving websites or listservs to make them more user friendly, making communications consistent and standardized across networks, and increasing information sharing / best practices across networks.
- Provide or identify additional funding and resources to support Networks and membership programming: This included support for both Network operations/activities as well as direct student or teacher oriented projects.
- Increase outreach to business and industry: This included both issues related to amount (recruiting more industry partners for the Networks) as well as variety (recruiting specific types of businesses related to targeted STEM areas).
- Expand stakeholders and increase/improve outreach in general: These comments ranged from simply recruiting more people to participate in a network to targeting particular groups (other than business/industry), to improving general methods of—and information provided through—outreach.
- Develop and/or use strategic action plans (for Network/board meetings): This was to help ensure all members know what kind of roles are available for participating in the Network and/or projects, the purpose of the Network and its activities (both regionally and as they relate to the State STEM Plan), and agree on a set of measureable goals toward which they would work.
- Increase collaboration/inclusivity of all members/stakeholder groups: This included comments related to ensuring that information sharing and decision-making is done by a wide/diverse group rather than just a small, inner circle.
- Increase focus and/or resources on early childhood and out of school time: This included comments
  related to developing or supporting student and/or teacher projects in these sectors.



## Appendix A: Detailed Statewide Data

	Table 19 - Response Rates Based on Original Assignment of Region in Mailing Lists													
	Original Mailing List Distribution				R	esponden List Dis	ts by Mailin tribution	ng	Response Rate					
	Inner Core	En- gaged	Con- nected	Total	Inner Core	En- gaged	Con- nected	Total	Inner Core	En- gaged	Con- nected	Total		
Total	88	367	1,885	2,340	64	130	456	650	72.7%	35.4%	24.2%	27.8%		
Statewide Mean	13	61	251	315	9	21	59	86	71.7%	38.3%	25.6%	34.9%		

	Table 20 - Response Rates Based on Respondents' Self-Identified Region												
	Mailing List Distribution Adjusted by Self-Identified Region				Respondents by Self-Identified Region Distribution				Response Rate				
	Inner Core	En- gaged	Con- nected	Total	Inner Core	En- gaged	Con- nected	Total	Inner Core	En- gaged	Con- nected	Total	
Total	88	367	1,885	2,340	64	125	406	595	72.7%	34.1%	21.5%	25.4%	
Statewide Mean	13	61	253	317	9	20	55	81	71.7%	37.7%	31.7%	36.9%	

Table 21	Table 21 - Distribution of Survey Recipients and Respondents by Region and Membership Type (Total 100% withineach Region)															
	Original Mailing List Distribution				Res	oondent List Dist	s by Mai tribution	ling	Mailing List Distribution Re Adjusted by Self- Self-Identified Region				Respon f-Identif Distril	pondents by lentified Region Distribution		
	Inner Core	En- gaged	Con- nected	Total	Inner Core	En- gaged	Con- nected	Total	Inner Core	En- gaged	Con- nected	Total	Inner Core	En- gaged	Con- nected	Total
Total	3.8%	15.7%	80.6%	100%	9.8%	20.0%	70.2%	100%	3.8%	15.7%	80.6%	100%	10.8%	21.0%	68.2%	100%
Statewide Mean	11.2%	29.9%	63.2%	100%	21.0%	35.3%	48.8%	100%	10.1%	27.5%	66.3%	100%	18.1%	29.9%	56.3%	100%

Table 22	Table 22 - Distribution of Survey Recipients and Respondents by Membership Type and Region (Total 100% within each Membership Type)															
	Original Mailing List Distribution				Res	oonden List Dis	ts by Ma tributior	iling 1	Mailing List Distribution Respond Adjusted by Self-Identifi Self-Identified Region Distrik				idents by ified Region ibution			
	Inner Core	En- gaged	Con- nected	Total	Inner Core	En- gaged	Con- nected	Total	Inner Core	En- gaged	Con- nected	Total	Inner Core	En- gaged	Con- nected	Total
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Statewide Mean	14.3%	16.6%	13.3%	13.5%	14.3%	16.4%	12.9%	13.3%	14.3%	16.5%	13.4%	13.6%	14.3%	16.3%	13.5%	13.7%



Table 23 - Q2: With which sector do you most closely	identify? (	Select Only C	One.)	
		Statewic	de Mean	
	All (N = 515)	Inner Core (N = 64)	Engaged (N = 150)	Connected (N = 515)
Early Education and Care	3.7%	2.8%	2.5%	5.1%
K-12 Education	43.7%	25.8%	46.2%	48.8%
Higher Education	23.2%	26.2%	22.0%	21.7%
Out-of-School Time	5.2%	8.5%	7.3%	3.0%
Business / Industry	10.7%	15.0%	6.6%	10.5%
WIB / REB	2.6%	5.9%	1.5%	1.7%
Government	2.8%	0.0%	3.4%	3.4%
Non-profit	5.9%	7.4%	5.9%	4.9%
Other (please specify)	2.2%	8.5%	4.7%	0.8%

Table 24 - Q5: How would you characterize your involvement in regional STEM initiatives at the time you first engaged with this Network?				
	Statewide Mean			
	All (N = 502)	Inner Core (N = 63)	Engaged (N = 114)	Connected (N = 502)
High Involvement	18.1%	40.4%	14.9%	12.0%
Moderate Involvement	41.3%	47.1%	46.4%	37.8%
Little or no Involvement	40.6%	12.4%	38.7%	50.2%

Table 25 - Q6: How would you characterize your involvement in regional STEM initiatives over the past year?				
	Statewide Mean			
	All (N = 500)	Inner Core (N = 64)	Engaged (N = 113)	Connected (N = 500)
High Involvement	25.0%	60.5%	15.3%	19.0%
Moderate Involvement	46.7%	34.8%	54.2%	44.8%
Little or no Involvement	28.4%	4.7%	30.5%	36.2%

# Table 26 - Q7: If there has been a change in your level of involvement with regional STEM initiatives since you first engaged with the Network, to what extent is it attributable to your participation in the Network?

	Statewide Mean			
	All (N = 320)	Inner Core (N = 47)	Engaged (N = 83)	Connected (N = 320)
Great Extent	22.1%	42.7%	32.5%	10.1%
Moderate Extent	37.9%	26.4%	38.5%	46.8%
Small Extent or Not at All	40.0%	30.9%	29.0%	43.2%



Table 27 - Q8: In what way(s) are you or have you been involved with this Network? (Select all that apply.)				
	Statewide Mean			
	All (N = 443)	Inner Core (N = 64)	Engaged (N = 110)	Connected (N = 443)
Member of a Network steering committee or advisory board - Current Year	33.4%	93.3%	29.4%	6.3%
Member of a Network steering committee or advisory board - Past Year(s)	26.7%	67.6%	15.1%	7.4%
Involved in planning or delivering a Network support initiative - Current Year	27.5%	72.5%	20.2%	12.3%
Involved in planning or delivering a Network support initiative - Past Year(s)	25.0%	51.0%	20.3%	15.8%
Attended a Network committee or board meeting - Current Year	51.9%	86.2%	64.7%	20.5%
Attended a Network committee or board meeting - Past Year(s)	44.9%	65.4%	52.3%	24.6%
Attended an event supported or promoted by the Network - Current Year	72.5%	91.6%	67.9%	66.9%
Attended an event supported or promoted by the Network - Past Year(s)	56.6%	67.3%	58.3%	49.4%
Other (please specify) - Current Year	8.9%	10.0%	8.0%	8.3%
Other (please specify) - Past Year(s)	6.9%	8.8%	10.0%	6.0%

\* Percentages add up to more than 100% due to "Select all that apply."

Table 28 - Q9: To what extent do you agree	e with the following statem attended this year?	ents regard	ding any Netw	vork meeti	ng(s) you
			Statewic	de Mean	
		All (N = 182)	Inner Core (N = 55)	Engaged (N = 68)	Connected (N = 182)
	Strongly Agree	31.0%	40.0%	32.7%	16.4%
Maatinga wara productivo	Generally Agree	57.2%	49.1%	63.1%	62.6%
	Generally Disagree	11.4%	11.0%	3.3%	21.0%
	Strongly Disagree	0.4%	0.0%	0.9%	0.0%
		All (N = 179)	Inner Core (N = 55)	Engaged (N = 67)	Connected (N = 179)
Meetings were focused on issues consistent with the statewide STEM plan and/or its goals	Strongly Agree	56.8%	61.4%	54.1%	28.0%
	Generally Agree	40.7%	38.6%	42.5%	70.8%
	Generally Disagree	2.4%	0.0%	3.4%	1.2%
	Strongly Disagree	0.0%	0.0%	0.0%	0.0%
		All (N = 181)	Inner Core (N = 55)	Engaged (N = 68)	Connected (N = 181)
	Strongly Agree	52.4%	52.8%	53.0%	38.7%
Meetings were attended by a wide range of	Generally Agree	35.4%	35.4%	37.6%	40.8%
stakeholders	Generally Disagree	11.3%	10.4%	9.3%	20.6%
	Strongly Disagree	0.9%	1.4%	0.0%	0.0%
		All (N = 168)	Inner Core (N = 55)	Engaged (N = 63)	Connected (N = 168)
	Strongly Agree	48.7%	59.6%	40.5%	19.0%
Decisions were informed by members' input	Generally Agree	43.4%	31.2%	55.6%	62.7%
Decisions were morned by members input	Generally Disagree	6.5%	9.2%	2.1%	16.7%
	Strongly Disagree	1.4%	0.0%	1.9%	1.6%



Table 29 - Q10: Based on your observation, to what extent has the Network succeeded in engaging each of the following sectors in its work?					
			Statewic	de Mean	
		All (N = 414)	Inner Core (N = 63)	Engaged (N = 99)	Connected (N = 414)
	Great Extent	44.2%	61.7%	48.5%	37.5%
Drok 12 Education	Moderate Extent	39.9%	37.1%	43.2%	38.4%
Fier-12 Education	Small Extent	15.3%	1.2%	7.7%	23.2%
	Not at All	0.5%	0.0%	0.6%	0.8%
		All         Inner Core         Engaged         Conne           (N = 366)         (N = 63)         (N = 83)         (N = 3)		Connected (N = 366)	
	Great Extent	35.4%	39.5%	38.7%	29.5%
Higher Education	Moderate Extent	45.2%	52.5%	43.8%	46.2%
	Small Extent	17.2%	8.0%	14.7%	21.5%
	Not at All	2.2%	0.0%	2.8%	2.8%
		All (N = 314)	Inner Core (N = 63)	Engaged (N = 83)	Connected (N = 314)
	Great Extent	21.9%	23.8%	29.1%	18.6%
Rusiness / Industry	Moderate Extent	43.1%	37.1%	52.6%	37.8%
	Small Extent	32.7%	39.1%	17.5%	39.4%
	Not at All	2.3%	0.0%	0.8%	4.2%
		All (N = 287)	Inner Core (N = 61)	Engaged (N = 72)	Connected (N = 287)
	Great Extent	16.8%	17.9%	15.1%	14.3%
Government	Moderate Extent	39.6%	44.4%	43.3%	48.5%
Government	Small Extent	36.0%	33.7%	39.6%	26.8%
	Not at All	7.6%	4.0%	2.0%	10.4%
		All (N = 265)	Inner Core (N = 57)	Engaged (N = 73)	Connected (N = 265)
	Great Extent	21.7%	29.3%	24.6%	12.9%
Non-profit	Moderate Extent	43.9%	40.3%	48.6%	51.1%
	Small Extent	29.6%	28.6%	18.6%	30.6%
	Not at All	4.9%	1.8%	8.2%	5.4%

Table 30 - Q11: Do you currently receive information via e	email from	this STEM N	etwork?	
	Statewide Mean			
	All (N = 483)	Inner Core (N = 64)	Engaged (N = 112)	Connected (N = 483)
Yes	94.9%	98.0%	93.8%	92.5%
No	5.1%	2.0%	6.2%	7.5%



Table 31 - Q12: How often do you read the contents of these emails?				
		Statewic	de Mean	
	All (N = 458)	Inner Core (N = 62)	Engaged (N = 105)	Connected (N = 458)
Almost Always	50.7%	65.8%	47.1%	43.8%
Most of the Time	33.1%	27.1%	32.9%	36.6%
Some of the Time	13.7%	7.1%	14.2%	16.5%
Rarely or Never	2.5%	0.0%	5.8%	3.1%

Table 32 - Q13: Which of the following actions have you taken as a result of emails you received from this Network?
(Choose all that apply.)

	Statewide Mean			
	All (N = 439)	Inner Core (N = 63)	Engaged (N = 103)	Connected (N = 439)
Attended a Network meeting	57.1%	89.1%	70.2%	29.8%
Attended a STEM event or activity	76.0%	85.6%	82.0%	71.9%
Sought additional information regarding a STEM issue or activity	52.7%	56.0%	50.9%	54.7%
Sought to connect with a group or individual regarding a STEM topic or initiative	45.0%	51.2%	47.8%	41.2%
Forwarded the communication to someone else you thought may have interest	75.4%	88.7%	71.3%	70.3%

\* Percentages add up to more than 100% due to "Select all that apply."

Table 33 - Q14: In the past year, how often have you visited this Network's web and/or blog site?				
	Statewide Mean			
	All (N = 477)	Inner Core (N = 64)	Engaged (N = 110)	Connected (N = 477)
Frequently (7+ times)	9.2%	15.3%	5.7%	10.8%
Occasionally (4-6 times)	31.0%	41.1%	30.9%	29.4%
Rarely (1 to 3 times)	36.6%	34.9%	39.6%	33.8%
Never	23.1%	8.7%	23.9%	25.9%

Table 34 - Q15: Have you shared the Network's web and/or b	log site ado	dress with ot	her people	?	
		Statewide Mean			
	All (N = 377)	Inner Core (N = 58)	Engaged (N = 81)	Connected (N = 377)	
Yes	57.9%	68.5%	47.1%	61.2%	
No	21.9%	12.5%	28.3%	21.8%	
Do not Recall	20.2%	19.1%	24.5%	16.9%	



Table 35 - Q16: With which sector(s) have you or your institution established new relationships as a result of participation in this Network? (Choose all that apply.)						
	Statewide Mean					
	All (N = 457)	Inner Core (N = 63)	Engaged (N = 105)	Connected (N = 457)		
None	23.1%	13.2%	16.0%	28.8%		
PreK-12 Education	48.2%	65.7%	51.5%	44.6%		
Higher Education	39.6%	52.0%	54.6%	25.5%		
Business / Industry	33.8%	48.6%	41.4%	22.8%		
Government	10.3%	15.0%	18.1%	7.7%		
Non-profit	23.1%	27.6%	34.3%	16.7%		
Other (please specify)	2.7%	5.2%	1.2%	1.7%		

\* Percentages add up to more than 100% due to "Select all that apply."

Table 36 - Q18: How has engagement with t	his Network affected yo	u? To what	t extent has i	t increased	l your
		Statewide Mean			
		All (N = 408)	Inner Core (N = 62)	Engaged (N = 100)	Connected (N = 408)
	Great Extent	38.4%	58.2%	39.1%	28.8%
Awareness of State efforts to promote STEM	Moderate Extent	43.2%	31.2%	42.8%	48.9%
education and employment opportunities	Small Extent	14.0%	3.6%	15.0%	17.7%
	Not At All	4.4%	7.0%	3.2%	4.7%
		All (N = 411)	Inner Core (N = 62)	Engaged (N = 101)	Connected (N = 411)
	Great Extent	35.3%	46.0%	36.8%	27.3%
Awaranasa of STEM related issues in your region	Moderate Extent	42.8%	39.8%	44.0%	44.1%
Awareness of STEM-related issues in your region	Small Extent	17.0%	8.8%	15.5%	22.6%
	Not At All	4.9%	5.4%	3.7%	6.0%
		All (N = 411)	Inner Core (N = 60)	Engaged (N = 99)	Connected (N = 411)
	Great Extent	42.0%	56.1%	42.3%	30.6%
Awareness of STEM-related initiatives in your	Moderate Extent	40.8%	39.7%	40.9%	42.6%
region	Small Extent	14.3%	2.4%	16.0%	21.4%
	Not At All	2.9%	1.8%	0.8%	5.4%
		All (N = 409)	Inner Core (N = 62)	Engaged (N = 99)	Connected (N = 409)
	Great Extent	37.5%	52.4%	42.6%	24.0%
Connections to other STEM stakeholders	Moderate Extent	30.8%	41.0%	26.1%	30.5%
	Small Extent	22.4%	4.8%	27.4%	30.5%
	Not At All	9.3%	1.8%	3.9%	15.0%
		All (N = 414)	Inner Core (N = 62)	Engaged (N = 100)	Connected (N = 414)
	Great Extent	29.4%	40.7%	34.7%	23.7%
Connections to useful STEM resources	Moderate Extent	44.3%	45.3%	39.0%	45.4%
	Small Extent	18.5%	11.6%	22.0%	18.3%
	Not At All	7.7%	2.4%	4.3%	12.6%



Table 37- Q19: To what extent has engagement with this Network enhanced your capacity to promote STEM interest, education, or careers?					
	Statewide Mean				
	All (N = 397)	Inner Core (N = 62)	Engaged (N = 98)	Connected (N = 397)	
Great Extent	25.5%	51.2%	22.0%	18.8%	
Moderate Extent	43.0%	37.3%	53.3%	39.7%	
Small Extent	23.7%	7.4%	21.3%	29.5%	
Not At All	7.7%	4.2%	3.4%	12.0%	

Table 38 - Q21: How has participation in this	Network affected your or your organization's	ganization	? To what ex	tent has it	increased
		Statewide Mean			
		All (N = 370)	Inner Core (N = 60)	Engaged (N = 90)	Connected (N = 370)
	Great Extent	20.1%	32.4%	23.9%	12.3%
Engagement with regional STEM-related	Moderate Extent	42.4%	46.0%	46.2%	38.2%
initiatives	Small Extent	27.0%	15.1%	23.5%	34.3%
	Not At All	10.5%	6.5%	6.4%	15.2%
		All (N = 363)	Inner Core (N = 58)	Engaged (N = 88)	Connected (N = 363)
	Great Extent	19.1%	33.9%	20.0%	12.1%
Connections with STEM stakeholders within the	Moderate Extent	37.6%	41.4%	44.3%	31.6%
same sector	Small Extent	33.5%	18.1%	31.4%	42.6%
	Not At All	9.8%	6.5%	4.3%	13.7%
		All (N = 357)	Inner Core (N = 59)	Engaged (N = 89)	Connected (N = 357)
	Great Extent	17.1%	28.8%	17.2%	12.1%
Connections with STEM stakeholders from other	Moderate Extent	32.9%	37.7%	34.7%	26.7%
sectors	Small Extent	33.7%	21.9%	35.9%	39.6%
	Not At All	16.3%	11.5%	12.2%	21.6%
		All (N = 362)	Inner Core (N = 59)	Engaged (N = 88)	Connected (N = 362)
	Great Extent	17.7%	32.3%	16.6%	13.6%
Papauroon dovoted to STEM related initiatives	Moderate Extent	38.4%	41.1%	48.6%	33.0%
Resources devoled to STEIN-Telated Initiatives	Small Extent	29.7%	17.8%	22.6%	37.5%
	Not At All	14.2%	8.8%	12.2%	15.8%

# Table 39 - Q22: To what extent has engagement with this Network enhanced your organization's capacity to promote STEM interest, education, or careers?

	Statewide Mean			
	All (N = 385)	Inner Core (N = 61)	Engaged (N = 89)	Connected (N = 385)
Great Extent	17.0%	26.7%	13.4%	12.7%
Moderate Extent	41.0%	44.9%	44.2%	36.9%
Small Extent	33.1%	20.7%	33.8%	39.7%
Not At All	9.0%	7.7%	8.6%	10.7%



Table 40 - Q24: How effective are this Network's efforts to coordinate existing STEM resources across the region?					
	Statewide Mean				
	All (N = 350)	Inner Core (N = 60)	Engaged (N = 83)	Connected (N = 350)	
Highly Effective	18.1%	28.3%	21.6%	9.3%	
Moderately Effective	49.6%	49.5%	48.3%	48.4%	
Only Somewhat Effective	26.6%	21.0%	24.9%	32.6%	
Not at all Effective	5.7%	1.2%	5.2%	9.7%	

Table 41 - Q25: How effective are this Network's efforts to secure new resources to support STEM in its region?					
	Statewide MeanAll (N = 314)Inner Core (N = 58)Engaged (N = 76)Connected (N = 314)				
				Connected (N = 314)	
Highly Effective	14.2%	19.0%	18.4%	8.0%	
Moderately Effective	45.3%	52.3%	47.9%	46.8%	
Only Somewhat Effective	32.7%	22.5%	29.8%	35.1%	
Not at all Effective	7.8%	6.2%	3.8%	10.1%	



## **Appendix B: Network Manager Interview Protocol**

#### Goals of the Interview:

(These are for interviewer preparation, not to be read to interviewee)

- Introduce ourselves to the network leaders and establish a positive working relationship with them.
- Gain insight into leader roles, leadership structure, and how they conceptualize "membership."
- Understand who their key collaborators are and whether they are formally associated with the network or not.
- Define core goals of the network in the present year, how they connect to the statewide goals, and how they may have evolved over time.
- Understand strategies for network development and sponsor/facilitation of activity supporting goals.
- Discuss prototypical network projects things they feel they can take substantial credit for having made happen. Try to stick to current year or ongoing projects from past years.
- Explore network communication strategies and feedback/evidence of response to those strategies.
- Understand how funding changes have influenced activity and impact. (implicit in several questions)
- Identify opportunities for improvement.
- DO NOT: focus extensively on potential data sources in relation to the above. Make that a phone or email follow-up, accept quick comments on this subject, but get through the core questions.

#### **Begin Interview Script**

Notification and Agreement of Interview Conditions:

Interviewer:	Interview Date:
Interview Subject Name:	STEM Network Region:

Please READ:

These interviews are not confidential, but we recognize that it may be important for you to offer comments on an off-the-record basis. If you would like to make such a comment, just let me know and I will be happy to turn off the recorder. Similarly, if there is something you'd like to have on the record, but to be reported in an anonymous manner, we will offer you the opportunity to review and approve how it is presented before including it any report.

By signing, you acknowledge that your participation in this interview is voluntary and that you agree to be recorded by signing below. Recordings will be used to support the researchers' analysis of the conversation only and will be destroyed at the conclusion of the project.

I agree to be interviewed:	O Yes	O No
I agree to be recorded:	O Yes	O No

Interviewee Signature:



# Interview Questions: Note: time is limited, so please focus your answer on our question to the extent possible.

- 1. Please tell me a bit about yourself in terms of your tenure, role and responsibilities as leader of your network. (If there are two interviewees, take time to understand the nature of these roles, how they are distinguished, and the reasons for the two leader approach if that's what it seems to be.)
- 2. Is yours the only professional staffing position covered through the network do you have a colleague who shares leadership or operational responsibilities with you? (*This allows us to ID a second leader in cases where one may exist, but not be apparent to us. Same prompt.*)
- 3. How, if at all, has your role (have your roles) as project leader(s) evolved over time and particularly since funding levels declined three years ago?
- 4. Who are your key collaborators, the organizations and people who are really engaged with you and making things happen? << Have membership/board list handy so you can just star them instead of taking notes>>
- 5. What do you think makes your STEM Regional Network unique from the other STEM regional networks? (Recap understanding that regional characteristics vary, but focus on their role, purpose and work in their region.)
- 6. What are your network's goals in the current year, both in terms of its development and its objectives? (*Probe for their focal points we want a sense of intensity of focus. Why these foci.*)
- 7. How do you see these regional goals in terms of their connection to the six statewide STEM goals?
- 8. How has your network approached fulfilling these goals? What are your key strategies and how do you know they are working (or not)?
- 9. Viewing the current year, what are some of the initiatives you are most excited about? How did your network contribute to the development and success of these initiatives? << To what extent are they new or ongoing? >>
- 10. How has the reduction in funding affected your network's capacity, activity and impact? What are some of the innovative and effective ways in which you have compensated for this loss of resources? (*This question may already be sufficiently well answer by this time due to descriptions of the evolution of goals and services requested in previous questions.*)
- 11. What other key challenges (besides financial) are hindering your Regional Network's progress?
- 12. Besides additional funding, how can DHE and the regional network system better support your work at the local level?



## **Appendix C: Network Partner Interview Protocol**

#### **Goals of the Network Partner Interview:**

(These are for interviewer preparation, not to be read to interviewee.)

- Introduce ourselves to key network partners and establish a positive working relationship.
- Gain insight into their roles in relation to the network and any of its key events or initiatives, as appropriate.
- Understand how they came to be associated with the network and why they've remained engaged.
- Gain their perspective on the role of the network in the region, as well as others' perceptions of the network. How has the network's role and perceptions of it changed over time?
- Understand strategies for network development and facilitation of activity supporting network goals. How have they changed over time?
- Discuss any network projects they have had involvement with, particularly this year, and the role the network played in making it/them happen.
- Explore network communication strategies and feedback/evidence of response to those strategies.
- Understand how funding changes have influenced activity and impact. (implicit in several questions)
- · Gain insight into critical accomplishments and opportunities for improvement of the network.

#### **Network Partner Interview Cover Sheet**

STEM Network Region:	
Interview Subject Name:	Interview Subject Organization:
Interview Date:	Interviewer:

#### Please READ:

These interviews are not confidential, but we recognize that it may be important for you to offer comments on an off-the-record basis. If you would like to make such a comment, just let me know and I will be happy to turn off the recorder. Similarly, if there is something you'd like to have on the record, but to be reported in an anonymous manner, we will offer you the opportunity to review and approve how it is presented before including it any report.

By signing, you acknowledge that your participation in this interview is voluntary and that you agree to be recorded by signing below. Recordings will be used to support the researchers' analysis of the conversation only and will be destroyed at the conclusion of the project.

I agree to be interviewed:	O Yes	O No
I agree to be recorded:	O Yes	O No

Interviewee Signature:



# Interview Questions: Note: time is limited, so please focus your answer on our question to the extent possible.

- 1. Please tell me a bit about yourself and your role in your organization.
- 2. Please describe the role you play in the regional STEM Network and in relation to its events or initiatives. (Avoid diving deep into a description of events they are involved with. We will get there later in the protocol.)
- 3. How and when did you first learn about the STEM Network and what caused you to become involved with it? Why have you (and your organization) chosen to remain engaged over this period of time?
- 4. What are your STEM Network's goals in the current year, both in terms of its development and its objectives? What role did your board or steering committee play in defining them? (We want a sense of intensity of focus. Why these foci? What role did Board have in shaping them?)
- 5. Please describe the role your STEM Network plays in this region. How is the network perceived across the region? How, if at all, has it changed over time? (Focus on their role, purpose and work in their region. Is the network well known and understood?)
- 6. How has your STEM Network worked to develop its capacity and reach? What are your key strategies and how do you know they are working (or not)? (Consider approach to network and event development, communication strategies, etc.)
- 7. Let's talk about the events you are (or have been) directly involved with. What are they and what role, if any, has the network played in supporting their implementation and success? (Interested in knowing whether the network played a substantive role catalyzing or supporting these events.)
- 8. How has the reduction in funding affected your network's capacity, activity and impact? What are some of the innovative and effective ways by which you have compensated for this loss of resources? (*This may already be well answer by this time through in previous questions.*)
- 9. What, if any, other specific (besides financial) challenges are hindering your Regional Network's progress? How do you think these can be overcome?
- 10. Besides additional funding, how can DHE and the regional network system better support your work at the local level?

## Appendix D: Online Survey Questionnaire

## **Regional STEM Networks - 2013 Member Survey**

This survey, administered by the University of Massachusetts Donahue Institute, is one part of a study focused on the practices and impacts of the Massachusetts Regional STEM Networks. Your candid response to this confidential survey is essential to the continued success and improvement of the Networks. Reports of survey findings delivered to the Department of Higher Education and Regional STEM Networks will feature aggregate results only – no individual responses will be shared.

#### I. Connection to the Regional STEM Network

#### 1. With which Regional STEM Network are you most closely connected? (Select Only One.)

Some people may have connections to more than one Regional STEM Network. Please select the one with which you have had the most contact and answer all questions with that Network in mind. In all cases, choose only one network (even if you are equally involved with two or more.)

- Berkshire
- Boston
- Central
- □ MetroWest

Northeast

- Pioneer Valley
- Southeast
- □ No knowledge of a Regional Network

#### If No knowledge of a Regional Network ... Is Selected, Then Skip To End of Survey

\*\* Throughout this survey, please answer all questions in relation to your knowledge of the Network you selected in question 1 \*\*

#### 2. With which sector do you most closely identify? (Select Only One.)

- Early Education and Care
- □ K-12 Education
- Higher Education
- □ Out-of-School Time
- Business / Industry

- U WIB/REB
- Government
- Non-profit
- □ Other (please specify)
- 3. For how many years have you personally been involved with this Regional STEM Network? (Open Ended)
- 4. For how many years has the organization you currently represent been involved with this Network? (Open Ended) Please answer "NA" if you are not representing a specific organization.



5.	How would you characterize your involvement in regional STEM initiatives at the time you first engaged with this Network?				
	High involvement	Moderate involvement	Little c	or no involvement	
6.	How would you characterize you	r involvement in regional STEM in	nitiatives over t	he past year?	
	High involvement	Moderate involvement	Little c	or no involvement	
7.	If there has been a change in you engaged with the Network, to wh	r level of involvement with regio at extent is it attributable to your	nal STEM initiat participation in	tives since you first the Network?	
	Great extent Moderate ex	xtent	all 🛛 Doesr	n't Apply	
8.	In what way(s) are you or have yo	ou been involved with this Netwo	rk? (Select all t	that apply.)	
			Current Year	Past Year(s)	
	Member of a Network steering com	mittee or advisory board			
	Involved in planning or delivering a	Network support initiative			
	Attended a Network committee or b	oard meeting			
	Attended an event supported or pro	moted by the Network			

Other (please specify)

9. To what extent do you agree with the following statements regarding any Network meeting(s) you attended this year? (Note: This question is only displayed if the respondent indicated they "Attended a Network committee of board meeting" in question 8 above.)

	Strongly <u>Agree</u>	Generally <u>Agree</u>	Generally <u>Disagree</u>	Strongly <u>Disagree</u>	<u>DK/NA</u>
Meetings were productive					
Meetings were focused on issues consistent with the statewide STEM plan and/or its goals					
Meetings were attended by a wide range of stakeholders					
Decisions were informed by members' input					



# 10. Based on your observation, to what extent has the Network succeeded in engaging each of the following sectors in its work?

To what extent has it engaged	Great <u>Extent</u>	Moderate <u>Extent</u>	Small <u>Entent</u>	Not <u>At All</u>	<u>DK/NA</u>
Pre K - 12 Education					
Higher Education					
Business/Industry					
Government					
Non-profit					

#### **II. Regional STEM Network Communication**

#### 11. Do you currently receive information via email from this STEM Network?

🛛 No

Yes	
-----	--

If No Is Selected, Then Skip To 14.

#### 12. How often do you read the contents of these emails?

Almost always	Most of the time	Some of the time

# 13. Which of the following actions have you taken as a result of emails you received from this Network? (Choose all that apply.)

- □ Attended a Network meeting
- □ Attended a STEM event or activity
- Sought additional information regarding a STEM issue or activity
- Sought to connect with a group or individual regarding a STEM topic or initiative
- □ Forwarded the communication to someone else you thought may have interest

#### 14. In the past year, how often have you visited this Network's web and/or blog site?

□ Frequently (7+ times) □ Occasionally (4-6 times) □ Rarely (1 to 3 times) □ Never

#### If Never Is Selected, Then Skip To III. Impact of the Regional STEM Network

#### 15. Have you shared the Network's web and/or blog site address with other people?

 Yes
 No
 Do not recall

#### III. Impact of the Regional STEM Network

- 16. With which sector(s) have you or your institution established new relationships as a result of participation in this Network? (Choose all that apply.)
  - None
     Pre K 12 Education
  - □ Higher Education □ Business / Industry
  - Government Non-profit

□ Other (please specify)

#### If None Is Selected, Then Skip To 18.

**17.** Describe the focus of one of the most productive of these new relationships. (Open Ended Question) For example, networking led to collaboration on a grant proposal, sharing of classroom activities, collaboration on a STEM project, data sharing, externships with local business, joint trainings or presentations, etc.

#### 18. How has engagement with this Network affected you?

To what extent has it increased your	Great <u>Extent</u>	Moderate <u>Extent</u>	Small <u>Entent</u>	Not <u>At All</u>	<u>DK/NA</u>
Awareness of State efforts to promote STEM education and employment opportunities					
Awareness of STEM-related issues in your region					
Awareness of STEM-related initiatives in your region					
Connections to other STEM stakeholders					
Connections to useful STEM resources					

# 19. To what extent has engagement with this Network enhanced your capacity to promote STEM interest, education, or careers?

Great extent Moderate extent Small extent Not at all Doesn't apply



# 20. Please explain, if applicable, how engagement with this Network enhanced your capacity to promote STEM interest, education or careers.

#### 21. How has participation in this Network affected your organization?

To what extent has it increased your organization's	Great <u>Extent</u>	Moderate Extent	Small <u>Entent</u>	Not <u>At All</u>	<u>DK/NA</u>
Engagement with regional STEM-related initiatives					
Connections with STEM stakeholders within the same sector					
Connections with STEM stakeholders from other sectors					
Resources devoted to STEM-related initiatives					

# 22. To what extent has engagement with this Network enhanced your organization's capacity to promote STEM interest, education, or careers?

- Great extent
- Moderate extent

```
□ Small extent
```

□ Not at all □ Doesn't apply

- 23. Please explain, if applicable, how engagement with this Network enhanced your organization's capacity to promote STEM interest, education, or careers.
- 24. How effective are this Network's efforts to coordinate existing STEM resources across the region?
  - □ Highly effective □ Moderately effective □ Only somewhat effective
  - □ Not at all effective □ Don't know

#### 25. How effective are this Network's efforts to secure new resources to support STEM in its region?

- □ Highly effective □ Moderately effective □ Only somewhat effective
- □ Not at all effective □ Don't know
- 26. Please describe the value this Network brings to the region it serves.



## Appendix E: Network Reporting Worksheets

## Worksheet 1: Network Meetings

Please identify how many of the following types of meetings your Network organized/held this past year (FY2013).

#### Yellow Fields Are To Be Filled in by Network Manager

Activity	Enter # Per Year
Steering and/or Advisory Committee	
Project Planning Meeting	
Other Committee or Sub-committee Meeting	
Other Meeting Organized by the Network	

## Worksheet 2: Network Communication & Outreach

Please place an "X" next to each of the following that were developed or used by your Network as part of your outreach this past year (FY2013).

Activity	Enter "X"
Created or Updated a Marketing/Public Awareness Plan	
Newsletter (paper or electronic)	
Facebook Page	
Website	
Twitter Member	
Calendar of Events posted to Website	
Listserv / Mailing List	
Blog	
Promotional Video	
Webzine	
Special Events	
Regional Program Inventory	
Other: Please Describe	
description	
Other: Please Describe	
description	

#### Yellow Fields Are To Be Filled in by Network Manager



## **Worksheet 3: Network Activities**

#### Please place an "X" next to all of the following activities <u>that were organized/held/hosted by your</u> <u>Network</u> this past year (FY2013).

	Activity	Enter "X"
Involvement wit	h STEM Projects by Type	
	Career Fair	
	Science Fair	
	Student Intern/Externships	
	Teacher Intern/Externships	
	Parent/Guidance Workshops	
	Summer Camp	
	Classroom Visits by STEM Professionals	
	Mentoring Experiences	
	Robotics Competition	
	Other STEM-related Competition	
	Resource Center	
	STEM Expo	
	Teacher PD	
	Other: Please Describe	
	description	
	Other: Please Describe	
	description	
	Other: Please Describe	
	description	
Involvement wit	h @Scale Projects	
	Advanced Robotics	
	BioTeach	
	DIGITS	
	Gateway Project	
	MMSI	
	Project Lead the Way	
	Science Transfer Initiative	
	ABLE4STEM	
	BATEC	
	STEM Pathways	
	STEM Power	
	Western Partnership	
L		

#### Yellow Fields Are To Be Filled in by Network Manager



## Worksheet 4: State Alignment

# Please place an "X" next to the following aspects of the State STEM Plan that were a substantive focus of your Network over the past year (FY2013).

#### Yellow Fields Are To Be Filled in by Network Manager

Category	Activity	Enter "X"
Quantitative Goals		
	1) Student STEM Interest	
	2) STEM Achievement for All	
	3) STEM College Readiness	
	4) STEM College Degree Attainment	
	5) STEM Educator Effectiveness	
	6) STEM Workforce Development	
Qualitative Goals		
	1) Community Engagement	
	2) Academic Coherence	
	3) Educator Development	
	4) STEM Employers/Professionals	
Other		
	Summarize/Review STEM Council Meetings @ Network Meetings	
	Review Statewide STEM Plan @ a Network Meeting	
	Incorporate STEM Goals into local Strategic Plan	



### Worksheet 5: Network Return on Investment

The following worksheet is optional for FY2013. However, you are strongly encouraged to fill out as much of it as possible, as this is valuable information to communicate regarding the added value of the Regional Networks. This will become required reporting information for FY2014.

Blue = To be filled in by Keith

To be filled in by Network Manager

Please place an estimate in the 2 boxes below of the cash & inkind contributions your Network's host institution donates in support of Network Operations. See below for examples.

	FY	2013 State Inves	tment
	Initial Contract	Incentive Funds	Total
Network Name			\$0.00

	FY 2013 Hos	t Institution Investm	nent
	Cash	In-kind	Total
			\$0.00
Incl	udes: Staff support (sa	alarv & benefits) Oth	er Direct sunnort

Please place an estimate in the 2 boxes below of the cash & inkind contributions other institutions/businesses/groups donate in support of Network Operations. See below for examples. Please place an estimate in the 2 boxes below of the cash & inkind contributions both your host institution as well as other institutions/businesses/groups donate in support of Projects. See below for examples.

FY 2013 Other Institution Investments								
Cash	In-kind	Total						
		\$0.00						
Includes: Staff support (salary & benefits), Other Direct support (office space, phone, computer, supplies, etc.), and Waived Indirect Costs related to Network Operations. Excludes: Value of volunteer time and support directed toward projects.								

Please estimate the amount of time individuals associated with your Network have devoted to either/both Network Operations (i.e., time spent at meetings) or Network Projects (i.e., time spent at a career fair) in the two boxes below. See below for examples.

FY 2013 Project Investments								
Cash	In-kind	Total						
		\$0.00						
Includes: Costs related to student, teacher and/or workforce development projects managed by the Network.								
Excludes: Value of volunteer time and support directed toward Network Operations.								

Nothing to fill in here - this should all fill-in automatically via formulas once Keith inputs the State Investment \$s.

FY 2013 Volunteer Time Investment					FY 2013 Return on Investment					
# Volunteers	Average # of Hours Per Person	Total Volunteer Hours	Value of Volunteer Time Per Hour *	Total Value of Volunteer Time		Cash	In-kind	Volunteer Value	Grand Total	ROI %
		0	\$26.84	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	#DIV/0!
0	0	0	\$26.84	\$0.00		\$0.00	\$0.00	\$0.00	\$0.00	#REF!
Includes: Time devoted to planning and meetings by Board and Committee Members as well as time devoted to Network programs, projects, and activities (from career fair participation to writing articles for a newsletter). * Taken from Independent Sector's "Dollar Value of a Volunteer Hour by State: 2010" (http://www.independentsector.org/volunteer_time).										

