**Project Participants**

### Senior Personnel

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<tr>
<th>Name</th>
<th>Worked for more than 160 Hours</th>
<th>Contribution to Project</th>
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<tr>
<td>Trochim, William</td>
<td>Yes</td>
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<tr>
<td>Earle, Jane</td>
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<tr>
<td>Hebbard, Claire</td>
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**Contribution to Project:**

- **Trochim, William:**
  - Jane is the lead evaluation facilitator for our MRSEC partnerships. She is .5 FTE on this project. She participates in training material development, measurement development and data collection, and contributes in all project goals. She sets meeting dates and agenda, teaches evaluation to MRSEC partners, responds to their questions and provides support to them. Jane also contributes to our theory development, program modeling, and writing.

- **Earle, Jane:**
  - Claire is .5 FTE on this project. She is the project manager and provides oversight on research activities, with a focus on addressing the evaluation questions as outlined in the research proposal. She schedules team meetings, conducts administrative tasks associated with the project, assists in material development and measure development, tracks data, and writes reports. Claire took a leadership position on bringing the Protocol to publication.

- **Hargraves, Monica:**
  - Dr. Hargraves is the Manager of Evaluation for Extension and Outreach. Her position is supported by Cornell University and CCE, but the majority of her work contributes to this project. Monica develops and edits training materials and measures, and serves as the evaluation facilitator for the CCE cohort. As such she communicates with them and organizes and schedules meetings and workshops. She also collaborates on developing and administering our measures, and assists in data analysis and interpretation, theory development, and program modelling.

### Post-doc

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<th>Name</th>
<th>Worked for more than 160 Hours</th>
<th>Contribution to Project</th>
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<tr>
<td>Archibald, Tom</td>
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**Contribution to Project:**

- **Archibald, Tom:**
  - Tom in a graduate student in Education. He participates on the research team by assisting in developing teaching materials and measures; administering measures and collecting data, conducting data analysis, participating in trainings and teleconferences, providing direct assistance to Evaluation Facilitator of the MRSEC cohort. He works collaboratively with all team members and partners. Tom has also presented the project at professional conferences, and has sought out workshops and training opportunities related to his work here.

### Graduate Student

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<th>Name</th>
<th>Worked for more than 160 Hours</th>
<th>Contribution to Project</th>
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<tr>
<td>Johnson, Margaret</td>
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</table>
Worked for more than 160 Hours: Yes

Contribution to Project:
Margaret is a Graduate Research Assistant financially supported by the College of Human Ecology at Cornell. She participates on the research team by assisting in developing teaching materials and measures; administering measures and collecting data, conducting data analysis, participating in trainings and teleconferences, providing direct assistance to Evaluation Facilitator of the CCE cohort. She works collaboratively with all team members and partners and has sought out workshops and training opportunities related to her work here.

Name: Casillas, Wanda

Worked for more than 160 Hours: Yes

Contribution to Project:

Name: Daffin, Larry

Worked for more than 160 Hours: Yes

Contribution to Project:
AEA Diversity Intern 2009-2010, develop electronic resources associated with the SEP and vSEP. Continued on beyond internship

Name: Carucci, David

Worked for more than 160 Hours: Yes

Contribution to Project:
Material development for electronic resources, vSEP. Project Management Assistance

Name: McMahan, Linda

Worked for more than 160 Hours: Yes

Contribution to Project:
Material development for SEP and VSEP, Project Management assistance

Undergraduate Student

Name: Dang, Haixin

Worked for more than 160 Hours: Yes

Contribution to Project:
Haixin worked with us on the pilot project, and continues with us. She has conducted literature reviews and provided direct assistance in writing/drafting an article. She has participated in trainings and teleconferences, and more recently has worked with the research team in developing logic and pathway models, theory development, and data analysis.

Name: Eilbaum, Stacey

Worked for more than 160 Hours: Yes

Contribution to Project:
Stacey worked with us on the pilot project, and continues with us. She has conducted literature reviews and provided direct assistance in writing/drafting an article. She has participated in trainings and teleconferences, and more recently has worked with the research team in developing logic and pathway models, theory development, and data analysis.

Name: Monahan, Nicole

Worked for more than 160 Hours: Yes

Contribution to Project:
Nicole has conducted literature reviews on several concepts we are thinking about, including the reflective practitioner and diagramming systems and models. She has also worked on developing and editing training materials/tutorials, participated in trainings and conference calls, and provided general project clerical support.

Name: Hatcher-Mullins, Joshua

Worked for more than 160 Hours: Yes

Contribution to Project:
Joshua provided general project support through data entry and conducting QA on the Netway. He also participated in trainings and conference calls, assisted in workshop material preparation, and began work on creating video clips for training. He also
printed out posters of program pathway models, and developed an instruction sheet to assist others in creating posters.

Name: Negrin, Matthew  
Worked for more than 160 Hours: No  
Contribution to Project: literature reviews, data management

Name: Stadlen, Drew  
Worked for more than 160 Hours: Yes  
Contribution to Project: literature reviews, data management, technology assistance

Name: Cook, Natalie  
Worked for more than 160 Hours: Yes  
Contribution to Project: building databases for data management and analysis. Participation in group discussions and project planning.

Name: Brykman, Kelsey  
Worked for more than 160 Hours: Yes  
Contribution to Project: Participate in project discussions and planning. Conducting literature reviews, assist with material development for participant training.

Technician, Programmer

Name: Simon, Jamila  
Worked for more than 160 Hours: Yes  
Contribution to Project: Data management

Other Participant

Name: Cooksey, Leslie  
Worked for more than 160 Hours: No  
Contribution to Project: Dr. Cooksey is the chair of our External Advisory Board. The board was introduced to the project and provided comments and suggestions via a teleconference. The annual in-person meeting is scheduled for August, whereupon the Chair will finalize their comments and recommendations in writing.

Name: Mark, Mel  
Worked for more than 160 Hours: No  
Contribution to Project: Board members meet three times a year. They review the activities of our project and provide input regarding the successes, challenges, and future direction of the project.

Name: Greene, Jennifer  
Worked for more than 160 Hours: No  
Contribution to Project: Board members meet three times a year. They review the activities of our project and provide input regarding the successes, challenges, and future direction of the project.

Name: Hopson, Rodney  
Worked for more than 160 Hours: No  
Contribution to Project: Board members meet three times a year. They review the activities of our project and provide input regarding the successes, challenges, and future direction of the project.
Name: Rog, Debra

**Worked for more than 160 Hours:** No

**Contribution to Project:**

Board members meet three times a year. They review the activities of our project and provide input regarding the successes, challenges, and future direction of the project.

Name: Urban, Jennifer

**Worked for more than 160 Hours:** No

**Contribution to Project:**

Dr. Urban is the Co-PI (we can't find any other place to enter her). Her involvement has been limited in Year 1, but will increase substantially in Year 2.

Dr. Urban has participated in conversations about the direction of the Virtual SEP, and has been kept updated on all project activities. She attended the National conference for the American Evaluation Association and presented our work on the cyberinfrastructure part of the project. She participates in Board conference calls and meetings.

Name: Singhota, Nevjinder

**Worked for more than 160 Hours:** No

**Contribution to Project:**

Research Experience for Undergraduates

Organizational Partners

**Cornell Center for Materials Research**

For years 1-2 of this project, one of our .5 FTE key staff (Jane Earle, Nevjinder Singhota) is an employee at CCMR. She uses their office space, telephone and computer for her work with this project. Also, we maintain communication with CCMR leadership as we continue to discuss potential future collaborations.

**Cornell Cooperative Extension**

Many of our participants are CCE programs. Additionally, Cornell University Cooperative Extension funds the full-time position of the Manager of Evaluation for Extension and Outreach, and this person (Monica Hargraves, who is listed as working on the project) serves as the evaluation facilitator for the CCE cohort of this project. CCE and state 4-H leadership consults with us for selecting Science, Engineering and Technology (SET) programs, and Agricultural Programs to participate in our research. And the CCE system, as a whole, benefits from the training their staff receive during our project.

**Cornell University, College of Human Eco**

The College of Human Ecology at Cornell University sponsors a graduate research assistant (Margaret Johnson) who has participated the first two years of the project.

**Montclair State University**

Dr. Urban - project CoPI - is at Montclair State University.

Dr. Jennifer Urban, from MSU, is the Co-PI on this grant. She has been integrally involved in vSEP development and in the evaluation of this research.

**Other Collaborators or Contacts**

Through CCMR we have connected with the national MRSEC group. Eight individual MRSECs are currently participating in our research, while also using our materials to improve their programming. Participating MRSECs include Yale CRISP, University of Chicago MRSEC, University of Maryland MRSEC, USCB MRSEC, Penn State MRSEC, University of Washington MRSEC, University of Nebraska
Similar to these three MRSEC programs, there are 46 CCE programs that also are working on this project. This includes the leadership and 4-H program staff from the following counties (or region) in New York State: Chemung, Chenango, Clinton, Cortland, Franklin, Fulton, Genesee, Jefferson, Lake Plains (Monroe and Wayne counties combined), Madison, Oneida, Ontario, Oswego, Rensselaer, Saratoga, Seneca, Tioga, Tompkins, and Ulster, pilot project sites from Chemung, Tompkins, St. Lawrence, Ulster and Jefferson counties, and the two Regional Vegetable teams at Cornell University.

Future collaborations are likely to increase because there has been a wide-spread interest in the project. The MRSECs are showing a greater interest in getting involved than has been supported through our current funding.

Activities and Findings

Research and Education Activities:
This report is for Year 2 (August 2009 ? July 2010).

This research grant constitutes one phase of a four-phase model for developing and testing the effectiveness of the Systems Evaluation Protocol (SEP) in evaluating STEM outreach programs. This study is a Phase II trial. As such it is not meant to be a causal assessment of the effects of SEP; it is meant to assess whether the SEP program, when implemented in several different common STEM contexts, is associated with change in program evaluation capacity and quality when evaluating short and intermediate outcomes.

There were three distinct research subprojects to be conducted throughout the 5-year research plan. These included 1) the phase II study of the facilitated SEP to assess if it is associated with change in program evaluation capacity; 2) the development of a virtual SEP (vSEP) and comparison of this method to the facilitated method; and 3) the continued development and testing of the Netway - an evaluation cyberinfrastructure that facilitates networking, program modeling, and evaluation planning. There are two non-research components of this project, 1) an External Advisory Board, and 2) sponsoring and hosting a Graduate Diversity Intern with the American Evaluation Association.

Major research activities and education activities (experiments, observations, presentations):

The primary focus of Year 2 has been to wrap up the Systems Evaluation Protocol (SEP) on evaluation planning with our 2nd cohort, then to start the 3rd cohort on evaluation planning while simultaneously educating and supporting Cohorts 1 & 2 on evaluation implementation. (Cohort 1 was from our previous funded project). There was a great deal of overlap between Cohort 1 and Cohort 2 - For example four of the offices which participated in Cohort 1 (each with 4 programs) had some of their same staff participate in Cohort 2, but with different programs.

This year's evaluation planning cohort (Cohort 3) consists of 10 programs (5 MRSECs and 5 Cooperative Extension Vegetable team programs). The evaluation implementation cohort (Cohorts 1&2) consists of 16 outreach programs (3 MRSEC and 13 Extension) (6 programs from Cohort 2 evaluation planning did not continue on with Evaluation Implementation work here - due to staff turnover, financial constraints, or time commitment constraints.

The CCEs and MRSECs are considered two different systems. The CCE system was facilitated by the CCE funded Manager of Evaluation for Extension and Outreach, Monica Hargraves. The MRSEC system was facilitated by the .5 FTE research assistant funded through this grant - Jane Earle and Nev Singhota. They were supported by all other project staff.

Materials for Evaluation Planning were edited only slightly from Year 1, but materials for Year 2 needed to be planned and created.

The secondary focus of Year 2 was to develop the vSEP as proposed. The vSEP was intended to be a virtual version of our SEP. The team at Montclair State University worked closely with the team at Cornell University to translate the workshop trainings and materials into a virtual resource plan. The SEP focused trainings were organized into 9 'modules' and the MSU team wrote script and created powerpoints for them. They also wrote and posted an in-depth RFP for development of the VSEP. The RFP included detailed information on how a user would progress through the modules, as wells as what stopgaps would need to be in place to monitor progress.
Our measures remain the same as those from Year 1, however, in Year 2 we also conducted an End-of-Evaluation Planning phone interview with all participants in Cohorts 1 and 2. For some this was the first phone interview, but for those in Cohort 1 it was a follow-up interview. Post-planning data was collected from Cohorts 1 & 2, Baseline data was collected from Cohort 3.

Netway

Our Cyberinfrastructure has had some work done on it in Year 2 - specifically removing particular tables from its structure in order to maintain a manageable but productive resource. A greater amount of work has gone into discussions and planning of the Netway. The foundation is strong and consistent, but some edits need to be made in order to address some of the teaching methods of the Systems Evaluation Protocol, as well as to improve user-friendliness. Once plans are finalized and deemed feasible the changes will be made to the database.

External Advisory Board

In August 2009 we had a 1-day face-to-face meeting with the EAB. The formal report from the EAB was submitted via Fast-Lane. The Board met via a web conference for 2 hours in February 2010, and again in May 2010. The annual face-to-face meeting is scheduled for July 27, 2010.

Internship

The internship sponsored by this grant for this second year was filled by Larry Daffin, a graduate student at NYU. The purpose of this internship is to recruit graduate students of color and other underrepresented groups to extend their research capacities in evaluation; stimulate evaluation thinking concerning underrepresented communities by providing professional development training opportunities for graduate students of color and other underrepresented groups; and deepen the evaluation profession's capacity to work in racially, ethnically and culturally diverse settings. Mr. Daffin attended classes held for all the AEA diversity interns nationally. He also attended the annual meeting of the American Evaluation Association in November 2009. He participated in this NSF project for his internship placement, through the lab at Montclair State.

All the work of this project was presented at the annual American Evaluation Association Conference. Additionally, the project staff were solicited to write and submitted a chapter for the next version of 'The Handbook of Practical Program Evaluation', which outlined the methodology used for this NSF project. We have not yet been informed if this chapter will be published.

Findings: (See PDF version submitted by PI at the end of the report)

During Year Two of this project we worked a great deal on the vSEP in trying to make it actually comparable to the Facilitated SEP (fSEP). An RFP was submitted for development of the vSEP. We had 5 proposals, ranging from $96,000 to $460,000 - it was obvious that technology requirements were well beyond the current budget of the project. It has been decided, with support from the External Advisory Board, to continue to work on the vSEP project with hopes to seek additional funding in order to develop the technology aspects of the project, but that the vSEP materials that are under development will be integrated into the current Netway infrastructure. Therefore, rather than being able to compare the facilitated and the virtual versions of the SEP (fSEP vs vSEP), we will be able to compare the traditional 'fSEP/Netway' with the 'enhanced Netway'. The importance of the facilitation and support provided to build evaluation capacity indicated to us that it will be extremely difficult to create a fully virtual version of the same project. Thus we are developing a partially virtual self-guided version of the Netway that will act as the comparison and that we refer to as the 'enhanced' Netway.

The original intent of this project was to test a protocol for developing evaluation plans. The primary outcomes pertaining to this original focus have been an increase in new cohort participants' program modeling knowledge and skills, their acquisition of basic skills in use of the Netway software, an increase in their understanding of the components of good evaluation, and an increase in their ability to think well and communicate about their programs. Beyond the individuals there appears to be some indication that benefits are accruing to the organizations as a whole. Evidence supporting these outcome claims has been obtained from Netway log data (which record the type and frequency of Netway usage by individuals over time); from written external reviews of cohort logic models and pathway models that have been repeated, showing improvements in the models following reviewer feedback; from self-reports from EP participants; and observational reports from their Organization Directors.

Use of the Netway has extended beyond program evaluation for the programs participating in this project. About 35 Extension programs have gone through our project, but there are 120 Extension programs using the Netway. 13 MRSEC programs have gone through this project, but there are 24 programs in the Netway. In addition, program staff who have gone through our trainings have spontaneously begun working
together to build collaborative national-level logic models that they can link their individual programs to.

Originally we had thought that the learning styles and needs between the two systems were quite distinct, but with the addition of the 3rd cohort we have begun to notice more differences within systems than between systems.

Another finding was in the clarification of the complexity of systems issues in evaluation. Ethically we have found that assisting in evaluation planning actually requires following up with implementation and utilization support, therefore rather than going through a single year of evaluation planning training, our cohorts are actually working with us for longer periods of time and in increasing numbers. Additionally, the interest and involvement of different management levels within the organizations and systems are allowing us to look at the impact of evaluation capacity building on the organization as a whole.

As we prepare for our annual EAB meeting in July we will have more results to report, and these will be filed in the Fastlane system.

Training and Development:
The evaluation facilitators on this project have continued to hone and deepen their skills and understanding of evaluation and teaching adult learners. Staff have participated at the national level in presenting their findings and in discussing issues of importance to professional evaluators. We continue to engage in discussions of systems evaluation theory.

Graduate students working on this project have been deeply engaged in developing measures and conducting the research. They have had opportunities for teaching and public presentations (including being adept at PowerPoint), group collaborations, independent research, data tracking, and mentoring of undergraduate students.

Undergraduates working on this project are more confident in their abilities to pursue a graduate degree which includes research responsibilities. The three undergraduates this year who graduated have all gone on to Graduate School. They have attended and participated in the face-to-face meetings with the Evaluation Partnerships, gained experience in several software programs ? Word, Access, Powerpoint, Endnote, Illustrator ? and the Netway cyberinfrastructure, and in printing posters. The more experienced students have contributed significantly to the training of new students, and have reported that their work on this project has been a significant and key factor in their undergraduate education experience.

Outreach Activities:
In November 2009 we presented our program (The SEP, the Evaluation Partnership process, and the Cyberinfrastructure) at the National Conference of the American Evaluation Association. The audience consisted of professionals interested in evaluation.

We have taken advantage of several opportunities to talk about evaluation of outreach programs with several audiences ? both within New York State and beyond. These include statewide meetings of Executive Directors of the CCE Association, the National MRSEC Outreach Directors, and the National Cooperative Extension Evaluation forum.

Presentation to the national MRSEC Education Directors was important for recruiting new participants, as well as for encouraging national collaboration on MRSEC outreach activities.

Journal Publications


Books or Other One-time Publications

Editor(s): none
Collection: none
Bibliography: Ithaca, NY. Cornell Digital Print Services

Web/Internet Site

URL(s):
http://www.core.human.cornell.edu

Description:
Website discussing research and disseminating research results

Other Specific Products

Product Type:
Software (or netware)

Product Description:
Version VI of the Netway - the cyberinfrastructure for evaluation planning

Sharing Information:
This website and database - http://extensionnetway.net/ - is the cyberinfrastructure that is utilized by our evaluation partnership cohorts, and their colleagues. It is a password-protected resource so that most of the people using it are using the Systems Evaluation Protocol.

Product Type:
Teaching aids

Product Description:
We have developed measures and training materials associated with this project, and these are mentioned in the activities section but are also listed here. In addition to helping us to conduct our research these materials can be useful beyond our research.

Sharing Information:
These materials in their most current format will be made available in our next version of the printed protocol, and at that time will also be made available in the web.

Contributions within Discipline:
The ‘Facilitator’s Guide to Systems Evaluation Protocol’ was a significant contribution to the field of evaluation. We are using this publication with our current cohort, but also make it available both online (http://www.core.human.cornell.edu/research/systems/protocol/seppdf.cfm) and as a hard copy upon request.

This grant is contributing to our general understanding of evaluation policy and its importance to evaluation practice and program improvement and development. This focus on how evaluation and evaluation policy affects all members of a system is key to creating an environment which supports evaluation.

Also based upon this project we were invited to write a chapter for the next edition (2010) of the Handbook of Practical Program Evaluation. This chapter has been submitted and will be a key resource for new evaluators.

The External Advisory board is composed of highly recognized evaluators. Their continued interest in the project contributes to the project as much as this project contributes to their own work.
The original measures for Organization Evaluation Capacity, Program Evaluation Capacity, Logic Model and Pathway Model Quality, and Evaluation Plan quality were released with the published Protocol, and the activities of Year 2 have contributed to significant edits of these measures, which will also be made available to practicing evaluators.

Contributions to Other Disciplines:
The work of the cohorts in this project has improved their understanding of their program, as well as their ability to communicate with their stakeholders about their goals and impacts. Additionally, these programs have a better understanding of evaluation, and are better equipped to conduct good evaluation of their programs.

As we have worked with programs to develop their evaluation plans the organization leadership has frequently followed the progress. In many cases the leadership is seeing their team's evaluation capacity and knowledge of the cyberinfrastructure as tools to help them in program planning and development.

Contributions to Human Resource Development:
We are educating a new generation of practitioner-evaluators both in the NSF MRSECs and in CCE. In turn, these practitioners are spreading their knowledge to their peers, greatly enhancing the evaluation capacity of their organizations and of the STEM Outreach field as a whole. There has been an interest in offering a certification for the participants in this study, to show that they have a basic capacity for conducting evaluation at the program level. A certification would enhance their resumes.

Opportunities for college students to work on this project have resulted in mentoring from CORE staff of several graduate and undergraduate students. Undergraduates particularly express an increased interest in pursuing scientific research as a career. They report that they have increased their communication with their science peers about science education and evaluation.

Contributions to Resources for Research and Education:
Updated versions of the Netway cyberinfrastructure, the Protocol, and the associated measures are all resources for programs and educators.

Contributions Beyond Science and Engineering:
Our research is contributing to the field of evaluation broadly by helping to shape the next generation of resources and processes that will be informed by the latest in systems thinking and approaches. We are contributing to the way the US federal government (and other entities) is approaching evaluation, primarily through our emphasis on evaluation policy (supported in part through this grant), but also through education on the idea of evolution of both programs and program evaluation. Many government agencies have required the use of the Randomized Controlled Trial (RCT) for program evaluation, without giving consideration to whether such a design is appropriate for the developmental level of the program. The SEP shows how RCT's for newer programs that are still in development may not be the most appropriate use of resources, and may not provide the evaluation data and rapid feedback required by these early-lifecycle programs.

The Systems Evaluation Protocol and cyberinfrastructure will be valuable to any field that engages in evaluation.

Conference Proceedings

Special Requirements

Special reporting requirements: None
Change in Objectives or Scope: None
Animal, Human Subjects, Biohazards: None

Categories for which nothing is reported:

Any Conference
In this project we are working with several STEM related outreach programs to develop their evaluation plan. There are 19 Cornell Cooperative Extension Science, Engineering and Technology Programs (CCE-SET) programs and three Materials Research Science Education Center STEM (MRSEC-STEM) programs. Although the topics of these programs are similar, the nature of the organizations are very different. Therefore, we categorize these programs as separate “systems”. The CCE-SET system is represented by the color red, and the MRSEC-STEM system is represented by the color blue.

The following graphs are based on log data taken from the cyberinfrastructure. All programs are approximately at the same place in their training – and are developing evaluation questions, but they began training on different days.

Figure 1 shows the current number of logs per program since they began their evaluation planning work. The logs currently track the date and time when a user logs on, conducts a search, creates a report, works on their logic model or pathway model, views another program’s information, conducts administrative functions, or logs off of the Netway (note that some users simply close their browser window, so not every user will officially log off).

Looking at each system separately we can see that, to date, the MRSEC-STEM system has a higher utilization rate on the cyberinfrastructure (Figure 2). However, the MRSEC-STEM system began their evaluation planning work in early December 2009, whereas the CCE-SET system was not launched into their work until late February, 2009. Figure three shows the total number of days each system has had access to the cyberinfrastructure, and using this we were able to determine the average number of logs per day for each system (Figure 4). Finally, we looked for differences in average daily use of the cyberinfrastructure per program (Figure 5).

We have just begun to look at what kind of information we can collect using our log data. It is too early, and our samples are too small to draw any hard conclusions. Currently we use this type of information to monitor each program’s use of the cyberinfrastructure as they progress. Over time we will be taking a closer look at differences between programs and systems, and break the log data apart into different activities so we can see where users spend the most time. This data will also allow us to examine how use of the cyberinfrastructure varies over time in comparison to training dates and project due dates.
Figure 1

Figure 2
Figure 3

Number of Days Since Launch

Figure 4

Avg Logs per day by System
Figure 5

Logs per Day

[Bar chart showing logs per day for different counties, with labels from Chemung to Maryland.]