GraSUS-II Year Three Formative Evaluation Report
Project Period: August 2006 - August 2007

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This formative evaluation report is written to provide the GraSUS-II project leaders with feedback on the progress toward project goals in year three of the four-year project. The report is prepared in two sections. The first section includes all tables created from the evaluation data sources. The second section is a narrative that summarizes the findings of the formative evaluation analysis and a set of recommendations. This formative evaluation was based upon analysis of the following data: (1) survey and questionnaire data collected from teachers, students, and fellows in May 2007, (2) summaries of written evaluations of the 2006 Summer Academies, (3) notes from several interviews and focus group sessions from the project site visit during the spring semester 2007, (4) samples of classroom activities/lessons created by the fellows, and (5) documentation of NDSU faculty interactions with the project.

Section 1. Data Tables

GRaSUS-II Project Goals	Survey Respondents	Project Years		
		2004-05	*2005-06*	*2006-07*
Enrichment of student learning in grades 7-12	Teachers	.90	.93	1.00
	Fellows	1.0	1.0	.96
	Students	.82	.83	.76
Improved skills and competencies of fellows	Teachers	.97	.86	.99
	Fellows	.86	.93	.92
	Students	.81	.88	.84
Professional development of STEM teachers	Teachers	.94	.92	.98
	Fellows	.89	.89	.82
	Students	---	---	---
Growth of a partnership between NDSU and schools	Teachers	.75	.91	.92
	Fellows	.45	.60	.27
	Students	---	---	---

Table 1. Proportion of respondents who rated May 2007 survey items as positive or very positive impacts related to the first four GraSUS-II project goals. The proportions represent averaged responses of all survey items related to each goal. Student surveys did not include items related to the goals of teachers' professional development and growth of a NDSU/school partnership.

Grades 6-12 GraSUS-II Students	**2004-05**	**2005-06**	**2006-07**
Math	124	196	275
Science	521	336	817
TOTAL	*645*	*532*	*1,092*

Table 2. Numbers of grades 6-12 students who participated as respondents in the end-of-year evaluation surveys.

	Total	2004-05		2005-06		2006-07	
		Undergrads (n=7)	*Grads (n=7)*	*Undergrads (n=6)*	*Grads (n=7)*	*Undergrads (n=6)*	*Grads (n=5)*
Biological Sciences	8	1	2	1	2	1	1
Chemistry or Biotechnology	4	1	0	1	0	1	1
Civil Engineering	3	1	0	1	0	1	0
Construction Engineering	1	1	0	0	0	0	0
Electrical Engineering	1	0	0	0	0	1	0
Entomology	3	0	1	0	1	0	1
Geosciences	1	0	0	0	0	1	0
Industrial Engineering	1	0	0	0	1	0	0
Mathematics	7	1	2	1	0	1	2
Mechanical Engineering	7	2	1	2	2	0	0
Pharmaceutical Sciences	2	0	1	0	1	0	0

Table 3. Distribution of NDSU GraSUS-II fellows by majors.

Survey Item	Year	Proportion of students who:		
		Somewhat or Definitely Agree	*Somewhat or Definitely Disagree*	*Stated they had no Opportunity to Observe*
The NDSU student helps us solve problems and do our work.	2004-05	.90	.09	.01
	2005-06	.93	.05	.02
	2006-07	.93	.06	.01
I have learned some things about science or math from the NDSU student.	2004-05	.85	.14	.01
	2005-06	.95	.05	.01
	2006-07	.89	.10	.01
I do not like science.	2004-05	.21	.77	.01
	2005-06	.21	.78	.01
	2006-07	.28	.64	.08
I do not like math.	2004-05	.24	.73	.03
	2005-06	.36	.62	.01
	2006-07	.35	.63	.01
I think I am a pretty good math student.	2004-05	.79	.18	.03
	2005-06	.75	.24	.01
	2006-07	.62	.37	.01
I think I am a pretty good science student.	2004-05	.85	.13	.02
	2005-06	.88	.10	.01
	2006-07	.75	.19	.06
I like the activities that the NSDU student does with us.	2004-05	.83	.17	.00
	2005-06	.89	.10	.01
	2006-07	.88	.10	.02

Table 4. Grades 6-12 students' responses to end-of-year survey items about the GraSUS fellows' impact on their learning.

Examples of Labs/Activities Reported by Students	
Science	**Math**
Cat Dissection	M & M Activity
Red River Water Clarity Lab	Car Accident
Antarctica Data Exchange	Trig Tees
Dry Ice Lab	Using pH to Study Logs
EXCEL Graphing	Learning about Triangles
Centripetal Force Lab	Jeopardy Games
The Ecosystem Study	Cryptology
Hay Infusion Project	Probability
Enzyme Experiment	Doughnut Project
Amber and Insects Lab	Picture Frames
Engineering in China	Volume Activity
Crime Scene Investigation	
DNA Lab	
Nutrition Lab	
Cell Transport Lab	
Biodiesel Fuels Lab	
Scientific Poster Preparation Project	
Jeopardy Games	
Biochemistry Lab	
Iodine-Starch Lab	
Flagella Movement	

Table 5. Examples of labs and activities developed and conducted throughout the year by GraSUS-II fellows as reported on open-ended survey items by the grades 6-12 students, May 2007.

Sample Student Comments
We did an activity on water clarity. It was fun because we got to see what engineers do right here in our area.
The NDSU student traveled to Antarctica and studied rocks. He talked with us over satellite phone and taught us a lot.
Luminol can be used in criminal investigations. It was a very interesting activity that made me think of a possible career in the criminal investigation field.

Table 6. Excerpts from students' written comments about the activities created by the fellows on the end-of-year 2007 survey.

Survey Item	Year	Proportion of students who:		
		Somewhat or Definitely Agree	*Somewhat or Definitely Disagree*	*Stated they had no Opportunity to Observe*
The kids in our class ask the fellow questions about NDSU.	2004-05	.66	.28	.06
	2005-06	.78	.18	.04
	2006-07	.60	.35	.05
The NDSU student seems to like working with us.	2004-05	.91	.08	.01
	2005-06	.96	.03	.01
	2006-07	.95	.04	.01
The kids in our class ask the NDSU fellow questions about math or science.	2004-05	.87	.11	.02
	2005-06	.91	.08	.01
	2006-07	.92	.07	.01
The NDSU student is good at explaining things.	2004-05	.81	.18	.01
	2005-06	.86	.13	.01
	2006-07	.87	.12	.01

Table 7. Grades 6-12 students' responses to end-of-year survey items about the GraSUS-II fellows.

Survey Item	Year	Proportion of teachers who:		
		Agree or Strongly Agree	*Disagree or Strongly Disagree*	*Stated they had no Opportunity to Observe*
My students are enthusiastic about the lessons/activities developed by my fellow.	2004-05	.88	.13	.00
	2005-06	1.00	.00	.00
	2006-07	1.00	.00	.00
My students are not interested in my fellow or his/her studies at NDSU.	2004-05	.13	.88	.00
	2005-06	.14	.86	.00
	2006-07	.00	1.00	.00
The activities developed by my fellow are helping to increase my students' abilities to solve problems.	2004-05	.94	.06	.00
	2005-06	1.00	.00	.00
	2006-07	1.00	.00	.00
The work of my fellow does little to increase my students' confidence to learn science or mathematics.	2004-05	.06	.94	.00
	2005-06	.00	.86	.14
	2006-07	.00	1.00	.00
I have seen little/ no evidence that my students learn anything from my fellow or the activities he/she creates.	2004-05	.13	.88	.00
	2005-06	.07	.93	.00
	2006-07	.00	1.00	.00

Table 8. Teachers' responses to end-of-year survey items about fellows' impact on student learning.

Survey Item	Year	Proportion of teachers who:		
		Agree or Strongly Agree	*Disagree or Strongly Disagree*	*Stated they had no Opportunity to Observe*
My fellow has good teaching skills.	2004-05	1.00	.00	.00
	2005-06	.86	.07	.07
	2006-07	1.00	.00	.00
My fellow demonstrates weak communication skills.	2004-05	.06	.94	.00
	2005-06	.07	.93	.00
	2006-07	.08	.92	.00
My fellow is comfortable working with my students.	2004-05	1.00	.00	.00
	2005-06	.93	.07	.00
	2006-07	1.00	.00	.00
My fellow is comfortable working independently on projects or lessons that I ask him/her to develop.	2004-05	.94	.06	.00
	2005-06	.71	.29	.00
	2006-07	1.00	.00	.00
My fellow has a positive attitude about the work involved with teaching.	2004-05	1.00	.00	.00
	2005-06	.79	.21	.00
	2006-07	1.00	.00	.00
My fellow demonstrates interest in helping students learn science or math.	2004-05	.94	.06	.00
	2005-06	.93	.07	.00
	2006-07	1.00	.00	.00

Table 9. Teachers' responses to end-of-year survey items about their fellows' skills.

Survey Item	Year	Proportion of teachers who:		
		Agree or Strongly Agree	*Disagree or Strongly Disagree*	*Stated they had no Opportunity to Observe*
I believe that the August Summer Academy was a successful use of our time.	2004-05	.93	.07	.00
	2005-06	.85	.07	.07
	2006-07	.92	.00	.08
Our work in the August Summer Academy had no relation to our state or national SM educ. Standards.	2004-05	.06	.88	.06
	2005-06	.07	.71	.21
	2006-07	.00	1.00	.00
My own understanding of science, math, or technology is expanding as a result of working with my fellow.	2004-05	1.00	.00	.00
	2005-06	.79	.14	.07
	2006-07	1.00	.00	.00
Our monthly GraSUS seminars are important learning experiences for me.	2004-05	.94	.06	.00
	2005-06	1.00	.00	.00
	2006-07	1.00	.00	.00

Table 10. Teachers' responses to end-of-year survey items about their own professional development.

Survey Item	Year	Proportion of teachers who:		
		Agree or Strongly Agree	*Disagree or Strongly Disagree*	*Stated they had no Opportunity to Observe*
The university faculty member on our team is not very involved with our GraSUS work.	2004-05	.25	.75	.00
	2005-06	.07	.71	.21
	2006-07	.08	.92	.00

Table 11. Teachers' responses to end-of-year survey items on faculty involvement with GraSUS-II.

Fellows' Self-Reports on the Nature of their Classroom Work (n=11)	
Revision/creation of labs and learning activities	11
Interacting with or assisting students	11
Preparing materials for the day's activities	11
Introducing or teaching activities or portions of lessons	11
Observing lessons taught by the classroom teacher	7
Grading of student work, particularly the projects they developed	5

Table 12. Fellows reporting of their classroom work during focus group sessions, May 2007.

Survey Item	Year	Proportion of fellows who:		
		Agree or Strongly Agree	*Disagree or Strongly Disagree*	*Stated they had no Opportunity to Observe*
I believe that I am influencing students' attitudes about science or mathematics.	2004-05	1.00	.00	.00
	2005-06	1.00	.00	.00
	2006-07	1.00	.00	.00
The students are interested in the fact that I am a college student in science, math, or engineering.	2004-05	1.00	.00	.00
	2005-06	1.00	.00	.00
	2006-07	.91	.09	.00

Table 13. GraSUS-II fellows' responses to end-of-year survey items about their influence on student learning.

Survey Item	Year	Proportion of fellows who:		
		Agree or Strongly Agree	*Disagree or Strongly Disagree*	*Stated they had no Opportunity to Observe*
A big part of my fellowship work involves developing lessons or activities.	2004-05	.92	.08	.00
	2005-06	.91	.09	.00
	2006-07	.91	.09	.00
I rarely work with students.	2004-05	.00	1.00	.00
	2005-06	.09	.91	.00
	2006-07	.09	.91	.00
I am satisfied with the amount of time that I have to work with students.	2004-05	.83	.17	.00
	2005-06	.91	.09	.00
	2006-07	1.00	.00	.00
My teacher and I work well together.	2004-05	1.00	.00	.00
	2005-06	1.00	.00	.00
	2006-07	1.00	.00	.00
I am learning a great deal about teaching.	2004-05	1.00	.00	.00
	2005-06	1.00	.00	.00
	2006-07	1.00	.00	.00
I am learning a great deal about student learning in science or mathematics.	2004-05	1.00	.00	.00
	2005-06	1.00	.00	.00
	2006-07	1.00	.00	.00
I feel that my ability to communicate with students is improving through my work in GraSUS.	2004-05	.92	.08	.00
	2005-06	1.00	.00	.00
	2006-07	1.00	.00	.00
I rarely have the opportunity to answer student questions in class.	2004-05	.42	.58	.00
	2005-06	.18	.82	.00
	2006-07	.00	1.00	.00
I am adequately managing my split time between the fellowship and my student responsibilities.	2004-05	.83	.17	.00
	2005-06	.82	.18	.00
	2006-07	.91	.09	.00
Our monthly GraSUS seminars are important learning experiences for me.	2004-05	.50	.50	.00
	2005-06	.91	.09	.00
	2006-07	.45	.55	.00

Table 14. GraSUS-II fellows' responses to end-of-year survey items about their work with the project and its effects on them.

Sample Comments from Fellows
Before participating in GraSUS, I was aware of the difficulty most incoming college freshmen have in their mathematics courses. Before this year, I would have blamed their difficulty on poor math teachers in middle school and high school. I also know that a lot of college mathematics professors have this opinion as well. However, through my experiences in GraSUS, I now realize that we are 100% wrong. The problem isn't with the quality of teachers; the problem is the vast difference in how teaching takes place in K-12 versus how teaching takes place in college. Realizing this will most definitely make me a better teacher, as I am aware of the difference in teaching styles and can now incorporate more of the K-12 teaching styles in my college classroom, helping to bridge the huge gap. Furthermore, I feel like I have to share my realization with my colleagues so they, too, can become aware of the problem. *Coming into GraSUS, I thought that assessment could only be done through homework, quizzes, and tests; but now I realize the vast amount of informal assessment that can take place in the classroom. As I look back on my pre-GraSUS teaching experiences, I can pick out all of the missed opportunities I had as a teacher to informally assess my students.* *One of the greatest parts of GraSUS has been my own development in teaching and communicating information to an audience with variable backgrounds on the subject. The difference from the first time I stood at the front of the class until the very last time I did an activity was a world apart. Teaching is a difficult thing. Teachers are given a task to do, not nearly enough time or resources to do it with, and a half-hearted interest (at best) from the classroom as a whole. Top if off with teachers being underpaid and it has calls for some very dedicated and committed people. I have the utmost respect for teachers and what they are out to do.*

Table 15. Excerpts from fellows' written comments about how GraSUS-II has impacted their views of teaching and learning (2007 end-of-year evaluation questionnaires).

Survey Item	Year	Proportion of fellows who:		
		Agree or Strongly Agree	*Disagree or Strongly Disagree*	*Stated they had no Opportunity to Observe*
The university faculty member on our team is not very involved with my GraSUS work.	2004-05	.55	.45	.08
	2005-06	.30	.60	.10
	2006-07	.73	.27	.00

Table 16. GraSUS-II fellows' responses to end-of-year survey items on faculty involvement with the project.

Survey Item	Year	Proportion of fellows who:		
		Agree or Strongly Agree	*Disagree or Strongly Disagree*	*Stated they had no Opportunity to Observe*
I believe that my teacher has an opportunity to learn more science, math, or technology as a result of my work with him/her.	2004-05	.92	.08	.00
	2005-06	.91	.09	.00
	2006-07	.91	.09	.00
My teacher does not utilize my talents very well.	2004-05	.00	1.00	.00
	2005-06	.27	.73	.00
	2006-07	.00	1.00	.00
My teacher values my work with him/her.	2004-05	.92	.08	.00
	2005-06	1.00	.00	.00
	2006-07	1.00	.00	.00
I believe that the Summer Academy was a successful use of our time.	2004-05	.75	.08	.17
	2005-06	.91	.09	.00
	2006-07	.73	.18	.09
The Summer Academy resulted in some valuable planning time between me and my teacher.	2004-05	.58	.25	.17
	2005-06	.82	.09	.09
	2006-07	.45	.45	.09

Table 17. GraSUS-II fellows' responses to end-of-year survey items about their teachers' professional development.

Section II. Year Three Formative Evaluation Findings and Recommendations

Progress toward Goal 1: Enriched Learning by Grades 6-12 Science & Math Students

All collected data related to student learning suggest that the GraSUS-II project continues to enhance middle school and high school student learning. The teachers and their students value the fellows' strong science/math content knowledge, their creative work on curriculum lessons and activities, and their youthful and enthusiastic interactions with students. At an end-of-year banquet where GraSUS fellows and their teachers were present to celebrate their accomplishments throughout the year, several teachers spoke with me informally about the subtle, yet highly meaningful, ways in which the fellows influenced the attitudes, skills, and dispositions of their students. As one teacher said to me, "I believe that my fellows' interactions with my 'kids' probably influenced some of them to consider college and science/math majors in particular, who might otherwise not have been seriously considering going to college at all."

Student learning as a direct outcome of a project such as GraSUS-II is difficult to measure. However, there are no available data to contradict the finding that the project is satisfactorily progressing toward the goal of enriching student learning in middle school and high school classrooms.

Progress toward Goal 2: Improved Communication and Teaching Skills of GraSUS Fellows
The GraSUS-II fellows are exceptionally strong students. As strong students, they possess many of the qualities that good teachers also possess. They are diligent in achieving their goals, knowledgeable about their subjects yet continually wanting to learn more, and challenged but simultaneously satisfied by helping others understand their subjects. These qualities were especially obvious in the thoughtful discussions that I had with the fellows and their teachers during the spring site visit. It is no wonder, given the similarities just mentioned, that the strong communication and teaching skills demonstrated by GraSUS-II fellows corresponds with the reciprocal high evaluations of teachers and fellows for each others' work and competence.

GraSUS-II fellows come into the project with great records as learners. However, the project hones these qualities that support their exceptional learning qualities. As a result, their potential as skilled and competent teachers of learners is also improved by the project. Progress toward the goal of improving the communication and teaching skills of GraSUS fellows has certainly been demonstrated in the project.

Progress toward Goal 3: Professional Development Opportunities for Teachers

Teachers highly value all aspects of the GraSUS-II project for their professional growth: the work with the fellows, the monthly seminars and NDSU outreach activities (e.g., lab tours), interactions with faculty, and the summer Academies. The project has also given science and math teachers opportunities to interact with *each other*, opportunities that unfortunately do not occur often enough during the school year. The fellows also recognize the potential they have to contribute to the professional development of their teachers, although they are often modest about making such claims. This comes out in the focus groups discussions.

It is interesting to note that while the fellows each year have had mixed levels of appreciation for the Summer Academies and monthly seminar meetings, the teachers have consistently valued all of it. Perhaps fellows are unaware of the sparse opportunities that teachers have to get together in subject area groups to talk about their work. Indeed, it was the disciplinary subsection gatherings at the monthly seminars that also appealed the most to the fellows when describing the value that they placed on these events. At the spring banquet, which I was fortunately able to attend as a part of the site visit, one teacher described what she had learned about biotechnology from her fellow, an area that she wanted to learn more about. Another teacher told me about the incredible opportunity that the link with the researchers on the Antarctic expedition last year provided him as he (and his students) learned more geology and how science is "done."

Satisfactory progress toward the goal of professionally developing STEM teachers in the GraSUS-II project has been demonstrated.

Progress toward Goal 4: Strengthened Partnership between NDSU and School Districts

Measurement of progress toward this goal depends upon the respondents that are targeted for the evaluation data. In this year's survey data, teachers' perceptions of school involvement with university faculty members was higher than it was in either of the first two years. However, the fellows' perceptions of faculty member and school interactions was the lowest of the three project

years. This perception was also obvious in comments made by fellows during the focus group sessions.

The project PIs acknowledge the problem of getting busy faculty members to visit school classrooms involved with the project, although several members of the PI and leadership team visit the project school sites every year. However, the project is more successful at involving NDSU faculty members, graduate students, and administrators not directly involved with the project in other ways. Documentation was provided this year showing that 3 faculty members not directly involved with GraSUS provided supplies/specimens for fellows' use in classrooms; 5 faculty members not directly associated with the project provided equipment or materials for poster presentations; 1 faculty member not directly associated with the project was a guest speaker in a local classroom; and a total of 16 faculty members (5 GraSUS-II project leaders and 11 others not associated with the project) either gave a seminar at a monthly meeting, conducted a field trip or facility tour, or gave presentations of some form at some point in the project year. Additionally, 4 faculty members/administrators not directly associated with the project attended the second annual GraSUS-II poster session.

There is a reasonable level of progress being made toward the strengthening of a partnership between NDSU and the school districts with regard to science and math education. Just as busy teachers would have difficulty participating in the day-to-day activities of faculty members, the same busy faculty members also have difficulty participating in the day-to-day activities of classroom teachers.

Progress toward Goal 5: Dissemination of the Outcomes and Impact of GraSUS-II

Last year's formative evaluation identified two areas that required attention if further progress toward the goal of disseminating information on the impact of the project was to be realized: (1) increasing the number of submissions for publications about GraSUS-II, and (2) improvement and maintenance of the website.

Some progress, although limited, has been made on submission of manuscripts. Lisa Montplaisir, a GraSUS-II Co-PI, presented a paper at the annual conference of the American Educational Research Association (AERA), in the spring 2007. The paper was co-authored by several GraSUS-II leaders. The AERA is the most highly regarded international educational research organizations in the country. Also, a manuscript about GraSUS-II outcomes was submitted and rejected by one journal, but revised and re-submitted to the journal *School Science & Mathematics*. At the time of writing this report, I have no information with regard to the status of the submission. A good sign with regard to dissemination were the regular meetings held in the spring 2007 by a subset of project leaders specifically for purposes of moving forward with manuscript preparations. It is not clear whether or not these regular meetings continued to be held in the Fall 2007. However, a likely speed-bump in the progress toward dissemination was probably encountered by the slow response to the suggestion made at the May 2007 site visit about allocating some project evaluation funds to support a graduate student to work on the analysis of data for manuscript preparation. Failure to hire a graduate student for this purpose likely contributed to the less than satisfactory output of manuscripts in year three of the project.

The recommendation to improve and update the website has not been acted upon. The most recent annual reports to the NSF and formative evaluation reports from the external evaluator available for review on the website are dated 2003. Also, samples of the activities that fellows have developed and information about the fellows and teachers who have so successfully accomplished many of the project's objectives is woefully lacking.

A few actions begun in 2005-06 still remain and have the potential to contribute to the dissemination goal of the project. For example, the external advisory board is still in place. The PIs are pleased with the variety of community, business, and school based representatives on the board. However, it is not clear how often the board meets, for what purposes the board meets, and what objectives have been accomplished since its inception. The poster session was once again perceived positively by people who attended it, although the number of attendees was low, especially among those not directly related to the project. The poster session has the potential to make public the good works that the project enables in the local area. In this same vein, the newsletter continues to be a source of information about the project. The winter 2006-07 issue was professionally done and contained interesting information about the project and its participants.

In sum, satisfactory progress is not being made with regard to the goal of disseminating the outcomes and impact of GraSUS-II. Modest gains were made in submission of manuscripts and presentations at conferences. However, no investment was made for a part-time graduate student to assist with this work. The website currently does a poor job of disseminating information about the success of the project. Finally, the newsletter, the poster session, and the external advisory board continue to hold promise as tools for dissemination.

Progress toward Goal 6: Sustainability of GraSUS-II Activities in NDSU's STEM Graduate Programs

In the spring 2007, the PI developed and presented a plan for institutionalization of the project to the NDSU upper administration. The plan called for a scaled down form of the GraSUS-II project when the NSF funding expires. It included supporting 6 undergraduates and 3 graduate students each year, a coordinator position like that currently occupied by Kim McVicar, and modest stipend support for a group of 9 STEM teachers each year. At the time of this report writing, I do not know the status of the proposed plan. However, it is significant, I believe, that thought and effort was put into developing such a plan. In a focus group session with 3 academic deans (College of Science & Math, School of Human Development & Education, and College of Engineering & Architecture) during the spring 2007 site visit, the deans agreed that their contributions to a future scaled down version of GraSUS would be more likely to happen if the program were focused on undergraduate, rather than graduate, students. However, in general, the deans were supportive of GraSUS and believed that it was an important outreach activity for NDSU.

At this point, it is not clear to me the level to which the external advisory board has exerted any influence on the process of creating a sustainable, scaled down version of GraSUS in the area schools.

In sum, steady, but slow, progress has been made with regard to the difficult goal of sustaining GraSUS-II type activities with area schools after NSF funding expires.

Recommendations

1. Prioritize the goal of project dissemination of GraSUS outcomes and impacts. This is especially important in your fourth and final year of funding for GraSUS-II. Dissemination must be the #1 priority of the project in 2007-08. The PI team must take the lead on this responsibility. As recommended last year, hire a half-time graduate student to assist the PIs and the external evaluator in collecting, organizing, and summarizing evaluation data. Hire a graduate student who is developing his/her expertise as a science or math education researcher. Then, the faculty leaders must set aside time to analyze the data, write manuscripts, and submit them for publication. I cannot overemphasize the importance of this recommendation.

2. To make my point clear on this recommendation, also related to dissemination, I am "pasting" in recommendation #2 from last year's formative evaluation report. It appears as the remainder of this paragraph in italics. *Improve the project's web site so that it is current and informational for those who might be seeking ideas on successful STEM outreach projects between universities and schools. I suggest that the PI meet with faculty members from a university department of marketing or perhaps communications for assistance with this challenge. If no funds are currently set aside for dissemination, use some of the evaluation funds from this project to hire someone to figure out what information an "outsider" would seek from the project and then to build a web site that provides such information. This could also be an interesting project for a student in marketing or communications (or both). Since dissemination is a key goal that will continue to be evaluated on an annual basis, use of the evaluation funds for this purpose is legitimate.*

3. Continue to provide the kind of support and activities that have made GraSUS-II so successful in progressing towards it first four goals. Things are going well with the fellows, the teachers, and the young students. I am even reasonably satisfied with the level of interactions demonstrated by faculty who are not directly associated with the GraSUS-II project. However, the leadership group must commit more energy and attention to dissemination activities at this late stage of the project. It is a critical part of your responsibility as a successful NSF-supported GK-12 project now in its eighth year of operation.