

CMU 2010 FY09 Annual Report

Project Title: The Advanced Materials Research Initiative: Exploiting Synergy to Attain National Prominence in Materials Research at CMU

Project Leader: Brad Fahlman

Project Number: 200754 Date of Report: June 30, 2009

Refer to your *Outcome Evaluation Worksheet* to complete the information below. Insert additional rows if needed. Rows will automatically expand as you type. You are welcome to attach additional documents to supplement – but **not** substitute for - the information provided below.

	Outcome/Milestone	Status (Complete, in Progress, or Not started)	Date Measured	What are the next steps to achieving this outcome?
1	Design a project website (Year 1)	Complete	6/19/07 & 5/29/08 & 6/22/09	An initial website was created and posted to the Physics server during Year 1 of the project. The coordinator, during year 2 of the project, worked with OIT to create a revised site in line with the CMU web guidelines and this was posted on 5/29/08 and replaced the original site. This site, www.cmich.edu/amr , will provide additional information on faculty, students and research to support the developing Science of Advanced Materials doctoral program and the college site dedicated to that program. The coordinator continues to update the site with new publications, news items, the seminar series, etc.
2	Organize a seminar series (Year 1)	In progress	6/22/09	We have an on-going seminar series during the academic year (see attached 08-09 schedule for seminar). In Year 3, we hosted 10 speakers, and shared costs for one additional Chemistry materials speaker, from across the country with an estimated total attendance of 345 during 2008-2009, including faculty, students and off campus guests (e.g., MMI, Dow Chemical). The speakers include some of the biggest names in materials research. The thematically

				organized spring semester seminar series, coordinated by Marco Fornari in conjunction with the SAM 785 Seminar course, was very popular and drew in faculty and students from many departments beyond CST, and guests from the local community as well.
3	Recruit/hire a project manager (Year 1)	Complete	6/22/09	We actively recruited a project coordinator, and hired Jessica Lapp, who has relevant experience at the ORSP, and working with individual faculty members on grants. She continues to monitor the AMR account, manage travel arrangements for speakers, update the website, work with Grad Studies on student recruitment materials and outreach, and assist faculty with grant proposals, cost centers and other paperwork. Currently she is also assisting with the SAM doctoral program.
4	Recruit graduate students (Year 1)	Complete	6/22/09	Faculty continued to identify and recruit students for AMR assistantships. Due to some turnover in students, two additional students were awarded AMR fellowships for 2008-09 and 09-10. The AMR advisory committee has approved funding for 10 students thus far, 7 students have enrolled, and 5 are continuing into 2010 with expected graduation in spring or summer 2010. This meets the goal set by the AMR proposal. Please see attached list of AMR applicants and their current respective status.
5	Prioritize faculty applications for release time (Year 2)	In progress	6/22/09	Currently, 11 faculty have been awarded AMR course releases to work on grant proposals (please see attached list of recipients). Four faculty members have received grant awards based on their grant submissions supported by AMR release time, with four proposals currently pending.
6	Participating faculty submit collaborative grant proposals (Year 2)	In progress	6/22/09	AMR faculty members have participated in the submission of 40 collaborative proposals to external funding agencies. Twelve (12) of these have been funded thus far, with 8 additional proposals still pending. Additionally, several AMR faculty (Barone and Fahlman) have secured earmark funding through the DOD and TARDEC for a lithium battery project which is expected to be funded formally in July 09. Please see the attached documentation listing all

				grant proposals submitted by AMR faculty and the status of these proposals.
7	Participating faculty submit manuscripts for peer-reviewed publications (Year 2)	In progress	6/22/09	Participating faculty have had 57 materials-related papers accepted for publication in peer-reviewed journals since January 2008. Nine (9) of these papers are collaborative within the AMR, involving 2 or more AMR faculty. Additionally, faculty have contributed books, book chapters, patents and other intellectual materials. Please see the attached report for detailed information regarding these publications.

What are your plans for sustaining support for your project beyond the CMU 2010 funding period?

Because the emphasis on materials research will continue with the new SAM doctoral program, a number of AMR efforts will continue beyond the end date of the project. The master's level fellowships will be discontinued when the program ends but assistantships are available for SAM students at the doctoral level. We hope to recruit several SAM students from the current AMR students and expect Physics and Chemistry masters-level students to continue to work on materials-related research with the AMR/SAM faculty. The SAM program budget also includes a seminar series and course releases for faculty to allow for greater emphasis on faculty research programs. Students entering the SAM program will develop materials-related research projects for their dissertations, which will also lead to increased publications in this area for CMU students and faculty.

How can the ISPC assist you with those plans?

We appreciate the continuing support of the ISPC in recognizing and valuing the materials-related strengths of the CMU faculty. Without the AMR funding, this coordinated effort of the AMR and the new SAM program would not have developed so quickly or successfully.

This year, 2008-2009, represents a real shift forward for materials-related research with the inaugural class of SAM students entering in the fall of 2008 and a record number of publications and grant awards for the AMR/SAM faculty. Five students continue on AMR fellowships into 2009-2010 and we expect again to offer a thematic seminar series in conjunction with the SAM 785 Seminar course, which was so popular during the Spring 2009 semester.

Budget justification and request to carryforward funds:

We have attached a budget here indicating approved budget and expenditures to date for 08-09 with a projected budget for 09-10 carrying forward the unspent funds from this year. In explanation of the budget, we provide the following justification:

- 1) Faculty salaries: one more course release was awarded than originally budgeted for in Year 3, which increased the amount of expenditures for faculty salary and benefits. We would like to carry forward \$3,600 from unspent funds into the faculty salary line to bring the course release cost to \$7,800/release as recommended by CST dean Ian Davison.
- 2) PA Salary: We would like to increase very slightly the salary budgeted for the PA in Year 4 as the salary was slightly higher this year than budgeted. This is based on the expectation of a 3% raise for PA staff and is indicated on the Year 4 projection.
- 3) Student compensation: We have 5 students currently on AMR fellowships (2 in Physics; 3 in Chemistry) and expect them to complete their degrees in spring or summer 2010. Two students have left their programs (O'Brien in Physics and Partlo in Chemistry) so while we originally awarded 7 fellowships, we do not currently have 7 students in the program. We do not anticipate any more students joining the program at this point so we project funding for 5 students during Year 4.
- 4) Benefits: Because more faculty were awarded course releases, the benefits also increased. To allow for some increase in benefits, we request to carry forward \$2000 into this line for next year to offset any increases.
- 5) Seminar: During this year's seminar, we hosted more speakers than we originally budgeted for, and more of these speakers traveled from a distance (e.g. west coast). In anticipation of a similar number of speakers travelling from greater distances, we project a higher budget for hosting speakers in Year 5 and request permission for rebudgeting from the student compensation to this line item for 08-09, and to carry forward unspent funds of \$3000 into this line for Year 4.
- 6) Recruitment/Marketing: We continue to work on marketing strategies to attract strong students with interest in advanced materials research. We have not yet received the invoice for printing a poster advertising CMU's advanced materials research and mailing this to undergraduate programs in Michigan, Indiana and Ohio and expect to receive that within the next few days (estimated cost will be ~\$1,000 for printing and mailing and is included in Year 3 projections). Also not yet posted are charges from the coordinator's business card for equipment and office supplies (these should post by early August) but the costs are included here in the estimated projections for Year 3 expenditures. We would like to carry forward \$6,000 into the recruitment and marketing line as individual faculty contact seems to be most successful in attracting strong students into CMU programs. We expect to support faculty travel for recruitment and to fund more marketing strategies to publicize the work of CMU faculty and the materials-related programs for students.

Advanced Materials Research Initiative

EXPENDITURES		YR 3	Expend	YR 3	YR 4 budget	YR 4
		rev budget	to date 6 29 09	est. projections		projection
Salaries						
a	Faculty Salaries	\$41,976.00	\$43,028.04	\$43,028.04	\$ 43,236.00	\$ 46,800.00
b	PA Salaries (0.5 time)	\$24,204.96	\$24,205.11	\$24,205.11	\$ 24,931.11	\$ 24,931.26
	Office Professional					
Other Compensation						
	Temporary Employees					
c	Student compensation	\$107,401.00	\$81,795.89	\$81,795.89	\$ 126,215.00	\$ 126,215.00
	Consultants					
b	Benefits	\$22,619.00	\$30,188.24	\$30,188.24	\$23,297.57	\$25,297.57
Supplies and Equipment						
d	Seminar	\$5,000.00	\$8,664.29	\$8,664.29	\$ 5,500.00	\$ 8,500.00
e	Recruitment/Marketing	\$9,500.00	\$2,682.30	\$3,786.80	\$ 9,000.00	\$ 15,000.00
	Hardware & Software	\$300.00		\$299.00		
	Other					
Overhead and Returns						
	Indirect Costs					
TOTAL PROJECT COST		\$211,000.96	\$190,563.87	\$191,967.37	\$ 232,179.68	\$ 246,743.83