Archibald Bush Foundation

ENHANCING STUDENT LEARNING THROUGH INNOVATIVE TEACHING AND TECHNOLOGY STRATEGIES: ENGAGING STUDENTS BY TEACHING TO MULTIPLE LEARNING STYLES

PROGRESS REPORT:
YEAR 1 & 2

December, 2006
MORRIS, MINNESOTA

I. INTRODUCTION

The two main goals of the project were:

1. Enhancing student learning by addressing their diverse learning needs.
   To achieve this goal we aim to increase (i) the number and quality of IT-supported diverse learning experiences available to students and (ii) student sense of engagement of learning by addressing multiple learning styles.
2. Creating an integrated, efficient, and responsive system for technology enhanced learning;
   a. integrated – assuring coordination among the support staff and users
   b. efficient – an effective way to balance between variety of options and available support resources; minimize duplication of effort
   c. responsive – multi-level support for faculty innovations

This report presents all of the first year grant activities that are implemented to achieve these goals.

II. ALIGNMENT OF THE PROJECT WITH STRATEGIC CAMPUS INITIATIVES

1. The project aims to improve UMM faculty's abilities to address diverse learning styles of students. In our proposal, we pointed out that after three years 12 - 15 courses will have been directly improved, lessons will be shared with a broader faculty through various communication tools both electronic and traditional. We have achieved this goal already within the first year by supporting eight instead of five projects and encouraging collaborative projects that involves more than one course. Implemented dynamic, participatory process encouraged collaboration and stimulated campus-wide impact of the project. We expect this trend will continue to have a positive impact on student engagement across the curriculum in keeping with our emphasis on breadth during. The students' participation in a diverse array of engaging learning experiences will enhance their learning and enrich their liberal arts education.

2. We expect to have an integrated, coherent support structure for TEL that will make continued innovations in this area more successful. The area is important because of investments as well as broader recognition of TEL as integral to higher learning now and in the future. Our structure has evolved haphazardly and needs improvement. This project is allowing us to improve it. Measures of success would be improved faculty satisfaction with services in this area, increased resources [time of staff and student tech assistants] available to faculty. This is essential to sustaining innovations in this area. The impact of the ITCORE group that has been set up during the transition period provided strong evidence for successful establishment of a technology support system that will continue to exist after the grant money is not available. We are hoping that we will create a model that could be used at institutions like us. In fact, ITCORE group created alternative models that could be used at institutions like us. During the first two years of the implementation various models have been tested and successful collaborative affords carried out in many instances. One outcome is the establishment of Instructional Technology Group that has been set up during the Fall 2006. This group is an extension of ITCORE group and will play a key role on achieving the sustainability of grant efforts. The details of these collaborations are given below.

3. University of Minnesota, Morris Strategic Three-Year Plan states two main objectives

to strengthen the UMM community. These are:
A. Attract and retain high quality students, faculty and staff, with a continuing effort to improve campus diversity.
B. Improve student satisfaction and retention by providing excellent and innovative classroom instruction, careful and responsive academic advising, high quality academic support services, and meaningful co-curricular opportunities.
The project started to create an environment that will increase the engagement of students in learning process through addressing multiple learning styles that will in turn improve student satisfaction and retention. Without addressing the learning needs of diverse student body, retaining them at UMM will be an unrealistic expectation.

The project stems from the strategic goals of our institution and aims to shape new institutional goals and objectives based on the experience that will be gained through the implementation of the grant. Currently, UMM is going through a strategic positioning process. Participants of the grant had a substantial input in the final version of the strategic positioning report. UMM aims to become a Honors Public Liberal Arts college which implies:

(i) offering opportunities for all UMM students regardless of their background and learning characteristics,
(ii) training faculty to get ready for the changes
(iii) providing an effective and efficient faculty support system.

All of these issues are discussed and communicated to the Campus Strategic Positioning Task Force. Also, they have been taken into consideration. Fall Faculty retreat looked at "Looking Ahead", "Innovative Learning and Teaching", and "Current Issues". Findings of the project participants have been communicated the rest of the faculty and administrators.

III. COLLABORATION

To achieve the goals of the project one of the key elements is the collaboration at various levels. The implementation of the grant increased the collaboration in all of its levels. The levels of collaborations that had been set up during the two years of the implementation are:

- **Collaboration within the discipline:** Many of the projects that has been supported has more than one principal investigators, *Forum for English Seminars, Foreign Language Work Group, and Dynamic Web Page Teaching Tools.* All other project investigators were closely coordinated their affords with rest of the faculty in their disciplines. For example, *Using Mathematica on Teaching Calculus to Diverse Learners* project investigator closely worked with the other Mathematics faculty, especially Professor Michael O'Reilly who initially started the use of Mathematica in Calculus education. Projects on the *Student Response Systems,* started with the collaboration of two chemistry faculty and had an impact on the rest of the participants and other campus faculty. They showed an interest and started to learn more and integrate within their courses.
- **Inter-disciplinary Collaboration:** The participants shared their experiences through various events, *IccIT November 1st 2005, April 4th, 2006, and November 7th , 2006 Events, July 7th, 2005, June 20th workshops, 2006 Fall Faculty Retreat and Social events. The details of these dissemination activities are given in appendices.*
- **Inter-unit Collaboration:** As can be seen from the composition of ITCORE group, inter-unit collaboration occurred naturally. UMM Computing Services,

Faculty Center for Learning and Teaching, Media Services, GenEdWeb program all produced an input to the process funded some of the grant activities. As a result of the collaboration, units started to implement joint projects that will lead to a more efficient, responsive and integrated instructional support system at UMM. As an example, An all-new **Brown-bag Lunch & Learn Series** co-sponsored by Briggs Library, Computing Services, Media Services, and The Faculty Center for Learning and Teaching has been set up. This is a series of eight noon-hour topics including: Google Scholar, Web of Science, Streaming Audio and Video, Thunderbird for Email, Computer Security, and more. Please see the full schedule including topic descriptions online at http://www.morris.umn.edu/cs/training/#falllunch. Similar activities will be planned and institutionalized within the implementation of the grant.

- **Inter-Campus Collaboration:** Inter-Campus Conversations on Innovative Teaching Series 1-3 brought all of the campuses together to:
    - Enhance and promote collaboration among the University of Minnesota campuses
    - Provide an opportunity for the various campuses working on the Bush Foundation Grant to share their experiences focusing on innovative teaching with technology
    - Disseminate the knowledge gained on innovative teaching throughout the University.

IV. FACULTY DEVELOPMENT ACTIVITIES

To help faculty on their projects, a consulting group (three faculty from education, cognitive sciences, political science, two professional staff, four students) has been set up. Also, Innovative Teaching Consulting Center has been established. To share participants scholarly approaches a comprehensive site has been created (www.morris.umn.edu/TEL/). The site hosts all of the project profiles, resources for learning styles, instructional technology tools, and a share point site. The site does not only inform the users but also provides step-by-step instructions on how to use various instructional technology tools (please see the appendices for more information).

Below are the some of the training activities *(please see the appendices for the details)*

FIRST YEAR

- November 1, 2005 Event, *"Inter-Campus Conversations on Innovative Teaching"*,
- July 7, 2005 Event, "*Engaging Students with Multiple Learning Styles Using Technology Tools",*
- Training Course,
- May 4, 2005 Social Event,
- Computing Services Training Program
- Brown-bag Lunch & Learn Series

SECOND YEAR

- April 4, 2006 Event, *"Inter-Campus Conversations on Innovative Teaching"*,
- May 3, 2006 Event
- May 16 2006 Project Meeting
- June 20, 2006, *"Assessment Workshop",*
- *August 21-22, 2006 UMM Fall Faculty Retreat/Workshop*
- November 7, 2006 Event, *"Inter-Campus Conversations on Innovative Teaching"*,
- Computing Services Training Program

- Brown-bag Lunch & Learn Series

ITCORE group looked at the five areas of learning-teaching process (please see the matrices developed for each one given in the appendices):

1. Content
2. Information Delivery
3. Interaction/communication
4. Assessment/evaluation
5. Other.

During the first year interaction and communication component has been emphasized. The emphasis for the second year was assessment/evaluation. The concentration will be on the content delivery in the third year.

V. SOME PROJECT OUTCOMES

Since the project not only involves faculty, therefore specific courses, but all of the units of UMM that are related with the innovative teaching, its impact has been on institutional scale. Computing Services, Faculty Center for Learning and Teaching, Media Services, GenEdWeb program started to share their experiences and integrate their activities. Participants learned on learning theories and started to think on implications in their teaching. New teaching tools has been developed and implemented to serve diverse learning needs/styles of the students.

During the first year other than the successfully implementation of six events, there were four conference/seminar presentations, and one research article. These outcomes are given below:

- **Pam Solvie**, *Assistant Professor of Education and* ***Molly Kloek****, UMM Student and Member of Consulting Group, Society for Information Technology & Teacher Education, 17th International Conference March 20-24, 2006, Orlando Florida, accepted for presentation (very selective), http://www.aace.org/conf/site/default.htm*
- **Byungik Kahng**, *Assistant Professor of Mathematics, panelist, UMN TEL Seminar Series, Wednesday, October 5, 2005, Effecting Programmatic Change with Learning Technologies, http://dmc.umn.edu/series/fall05.shtml*
- **Becca Gercken-Hawkins**, *Assistant Professor of English, panelist, UMN TEL Seminar Series, Wednesday, December 7, 2005, Using Technology to Shape and Support Learning Communities, http://dmc.umn.edu/series/fall05.shtml*
- **Tammy Berberi**, *Assistant Professor of French, Worlds Apart: Disability and Foreign Language Study, Inter-Campus Conversations on Innovative Teaching, November 1, 2005*
- **Molly Kloek**, *Learning styles, see Learning Styles Resources, and Teaching to Diverse Learning www.morris.umn.edu/TEL/*

During the second year of the implementation, there were seven events and number of publications/presentations increased substantially. There were 1 journal publication, 2 proceeding publications, and 17 presentations.

BUSH GRANT RELATED PUBLICATIONS/PRESENTATIONS (2006-2007)

- **Solvie, P. & Kloek, M.** (2006). Using Technology Tools to Engage Students with Multiple Learning Styles in a Constructivist Learning Environment. In C. Crawford et al. (Eds.), Proceedings *of Society for Information Technology and Teacher Education International Conference 2006* (pp. 1791-1793). Chesapeake, VA: AACE.
- **Pamela A. Solvie**, *Assistant Professor of Education* and **Engin A. Sungur,** Professor of Statistics, Concept Maps/Graphs/Trees/Vines in Education*, The 5th WSEAS International Conference on E-ACTIVITIES (E-Learning, E-Communities, E-Commerce, E-Management, E-Marketing, E-Governance, Tele-Working) (E-ACTIVITIES '06),* Venice, Italy, November 20-22, 2006 http://www.worldses.org/conferences/2006/venice/e-activities/index.html
- Nancy Carpenter, Associate Professor, Ted Pappenfus, Assistant Professor, *Technology for the Interactive Chemistry Classrooms,* ICCIT November 7, 2006
- **Pamela Gades,** *Today's College Students: A Video Presentation,* ICCIT November 7, 2006
- **Pamela A. Solvie,** Using Technology Tools to Engage Students with Multiple Learning Styles in a Constructivist Learning Environment, *Inter-Campus Conversations on Innovative Teaching, April 4, 2006*
- **Peter Bremer, Matt Conner, Pam Gades, Roger Boleman, Karen Cusey,** State of Technology Enhanced Learning (TEL) at UMM, *UMM Fall Faculty Retreat: Enhancing Our Academic Environment,* Alexandria, Minnesota, August 21-22, 2006
- **Paul Myers,** *Associate Professor of Biology,* Reflection Logs for Research in Science (BLOGS), *UMM Fall Faculty Retreat: Innovative Learning and Teaching,* Alexandria, Minnesota, August 21-22, 2006
- **Pamela A. Solvie,** *Assistant Professor of Education* and **Engin A. Sungur,** Professor of Statistics, Concept Maps, *UMM Fall Faculty Retreat: Innovative Learning and Teaching,* Alexandria, Minnesota, August 21-22, 2006
- **Sylke Boyd**, *Assistant Professor of Physics,* Computer Modeling of Materials in Physics, *UMM Fall Faculty Retreat: Innovative Learning and Teaching,* Alexandria, Minnesota, August 21-22, 2006
- **Byungik Kahng,** *Assistant Professor of Mathematics,* Using Mathematica on Teaching Calculus to Diverse Learners**,** *UMM Fall Faculty Retreat: Innovative Learning and Teaching,* Alexandria, Minnesota, August 21-22, 2006
- **Tammy Berberi**, *Assistant Professor of French,* Advocating Diversity: Disabled Students in Our Classrooms, *UMM Fall Faculty Retreat: Innovative Learning and Teaching,* Alexandria, Minnesota, August 21-22, 2006
- **Greg Thorson**, *Associate Professor of Political Science,* Clickers and Wikis: New Opportunities for Student Participation Through Technology, *UMM Fall Faculty Retreat: Innovative Learning and Teaching,* Alexandria, Minnesota, August 21-22, 2006
- **Elena Machkasova**, *Assistant Professor of Computer Science,* **Nic McPhee**, *Associate Professor of Computer Science,* Dynamic Web Page Teaching Tools, *UMM Fall Faculty Retreat: Innovative Learning and Teaching,* Alexandria, Minnesota, August 21-22, 2006
- **Pam Gades**, Course Tools: New Initiative, *UMM Fall Faculty Retreat: Innovative Learning and Teaching,* Alexandria, Minnesota, August 21-22, 2006

- **Pamela A. Solvie**, *Assistant Professor of Education* and **Molly Kloek**, *UMM Student and Member of Consulting Group, Society for Information Technology & Teacher Education, 17th International Conference March 20-24, 2006, Orlando Florida, accepted for presentation (very selective), http://www.aace.org/conf/site/default.htm*
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VI. ASSESSMENT/EVALUATION PROCESS

Evaluation/assessment is done at three levels: (a) individual projects, (b) general area of IT tools, and (c) overall implementation. The process has been detailed during the second year of the implementation. In the first year self-assessment of student learning (mainly surveys), and content based tools has been used in the of the projects. During the second year more comprehensive and elaborate assessment/evaluations method and tools are used. The details are given in individual project reports.

ITCORE group worked on an assessment/evaluation matrix and offered assessment/evaluation workshop to participants in collaboration with the project consultants.

During the first year a simple assessment tool that has been proposed and implemented by some projects is the following:

1. Ask students to take one of the learning style questionnaires. See below to locate them.
2. Place students in one of the categories.
3. Produce distribution of students' performance, e.i. exam and/or homework scores, project grades etc., to the learning styles.
4. Send the data to consulting group in any format that should look like to this:

Learning Style	Score 1	Score 2	…
xxx	67	78	
xyz	98	100	…
…	…	…	…

5. Specify whether or not any special technique from the project that may affect the above scores has been used.
6. Statistics consultant will carry out the statistical analysis of the data and send the results back to the faculty.

NOTES:

- There are two online learning style inventories that can be located:
    1. Sensory Modality Inventory (auditory, visual, kinesthenic) This can be taken at

https://vcassl.d.umn.edu/public/sensoryModalityInventory.php

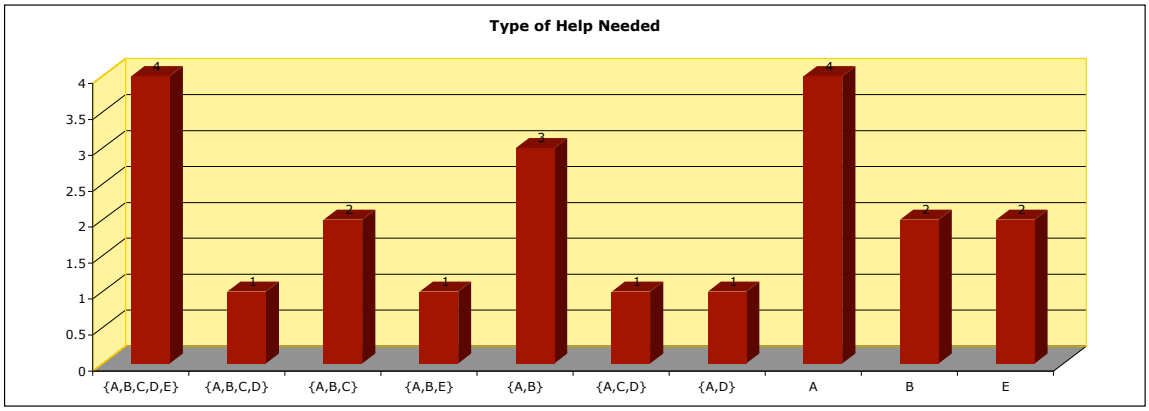
2. Kolb inventory (diverger, assimilator, accommodator, converger) This can be taken at http://www.cloudnet.com/~edrbsass/kolblearningstyle.html

- To learn more on learning styles please visit http://www.morris.umn.edu/TEL/lsresources.html
- Any special tool that has been developed through the grant for the performance measure should be specified.
- Every thing will be kept confidential. The data and the results will not be used or mentioned anywhere else. The sole owner of the data and results will be the faculty.

For the second year finding of the assessment/evaluation activities are given below:

1. Type of assistance needed from the Consulting Group to complete projects:

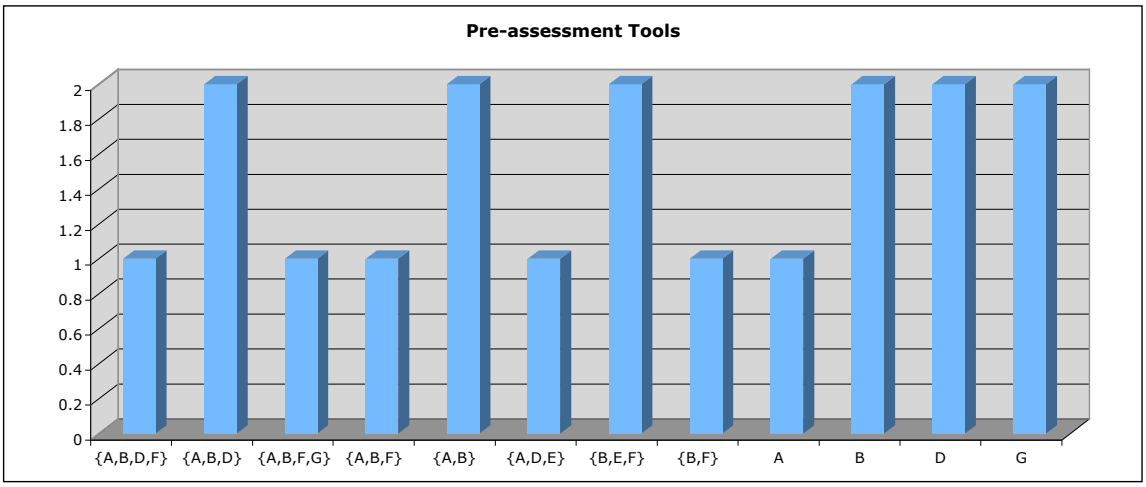
A. Technical help
B. Assistance with instructional design
C. Information about assessment
D. Information about learning styles
E. Other



2. If "Other" is selected, description of the need

a chance to see/try-out different presentation approaches for material.
deskside coaching
I do not usually do much pre-assessment... sometimes i have surveys or questionaires, but I have not done a pretest. I do use ungraded quiz-like exercises and quizzes.
i had to answer or I could not move on, but I am a consultant
none
Tecnical assistance with PRS so that I am using the same system as others Instructional design - learning to have sufficiently varied assignments to allow student success even as I help them master the types of learning essential to historical study
Under Technical Assistance - advice about PRS so that if I use this, it will be the same system as used by other faculty Under Instructional Design, further insights about gearing assignments to different learning styles when appropriate.

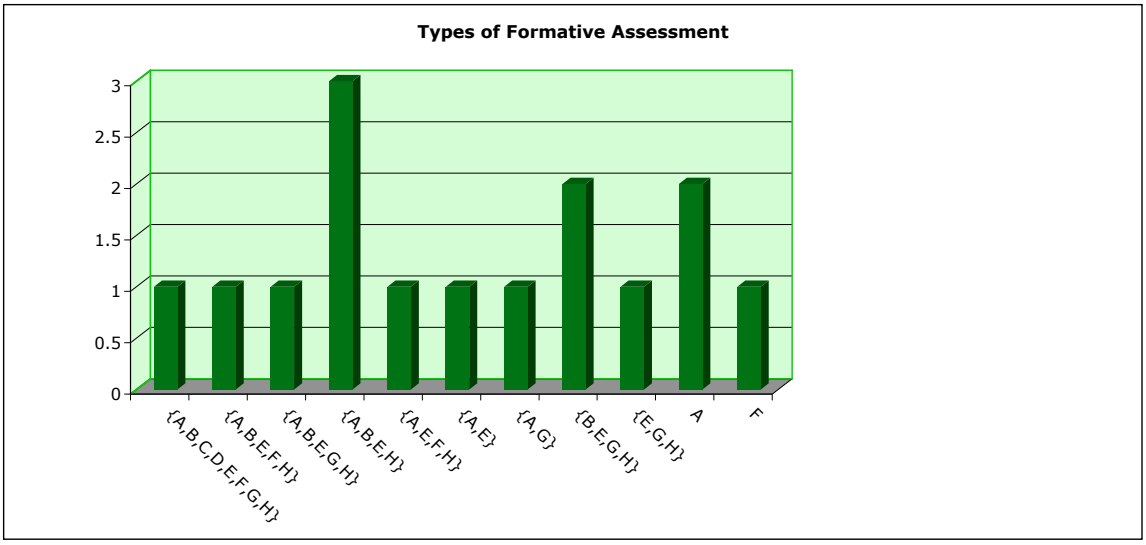
3. Types of pre-assessment used by the participants to find out what students already know
A. Pretest
B. Discussion
C. Interview
D. Exercise sheet
E. Graphic organizer (Venn Diagram, Concept Map)
F. Reflections
G. Other



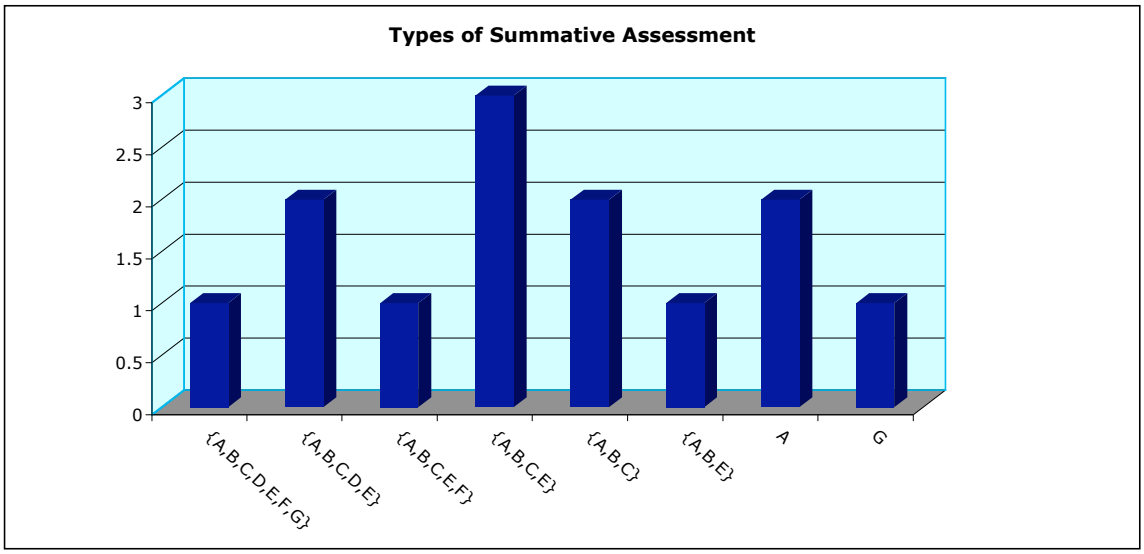
4. **If "Other" is selected, description of the pre-assessment type**

I do not usually do pre-assessment (I response).
My answers were in general. For our project, this is more of a self-assessment. We have an online 'quiz' that should be linked into the other materials better.

5. Types of formative assessment used often
A. Quiz
B. Quick Write
C. Minute Minders
D. Whips
E. Discussion
F. Conferences
G. Reflections
H. Drafts with multiple due dates



6. Types of summative assessment used
A. Exams
B. Papers
C. Presentations
D. Portfolios
E. Projects
F. External evaluations
G. Other

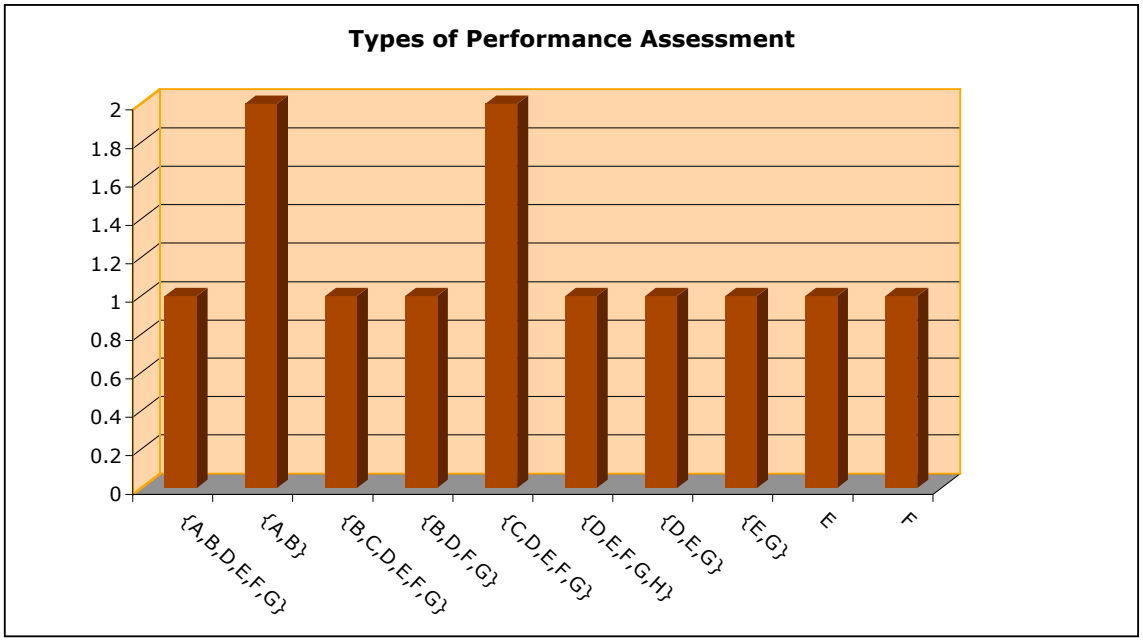


7. If "Other" is selected, description of the summative assessment type.

Questions 6 & 7 do not relate to my project directly. Assessments of how well the tool may be working would come thourgh course exams (primarily multi-choice in intro. psych.)

8. Types of performance assessments used
A. Experiments

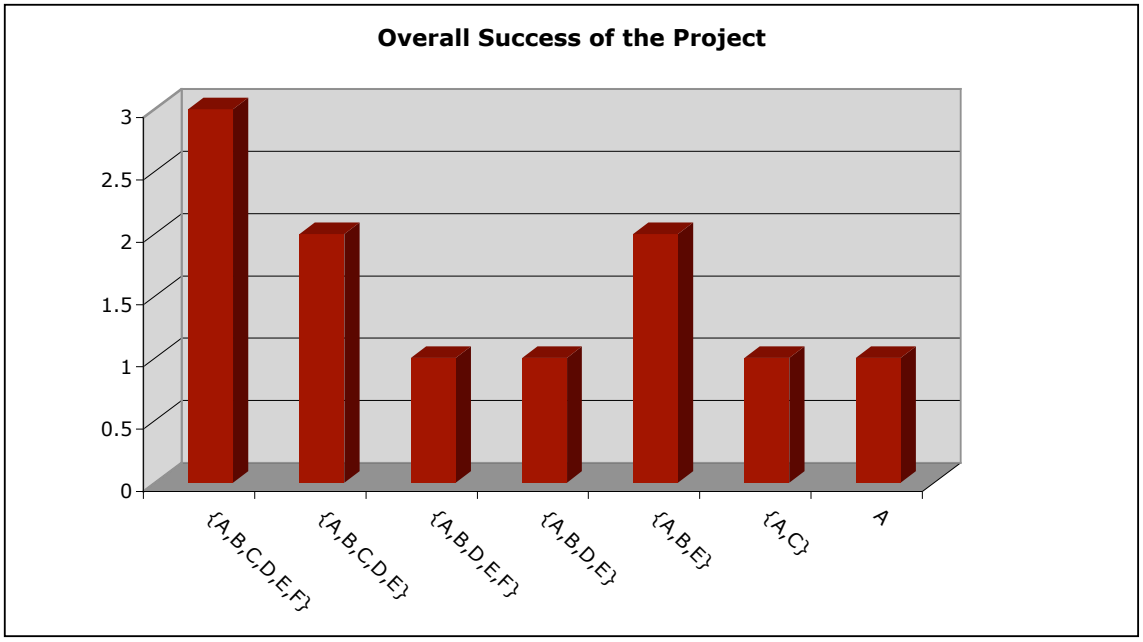
B. Problem solving
C. Interview
D. Essays
E. Presentations
F. Observations of student work
G. Collaborative projects
H. Other



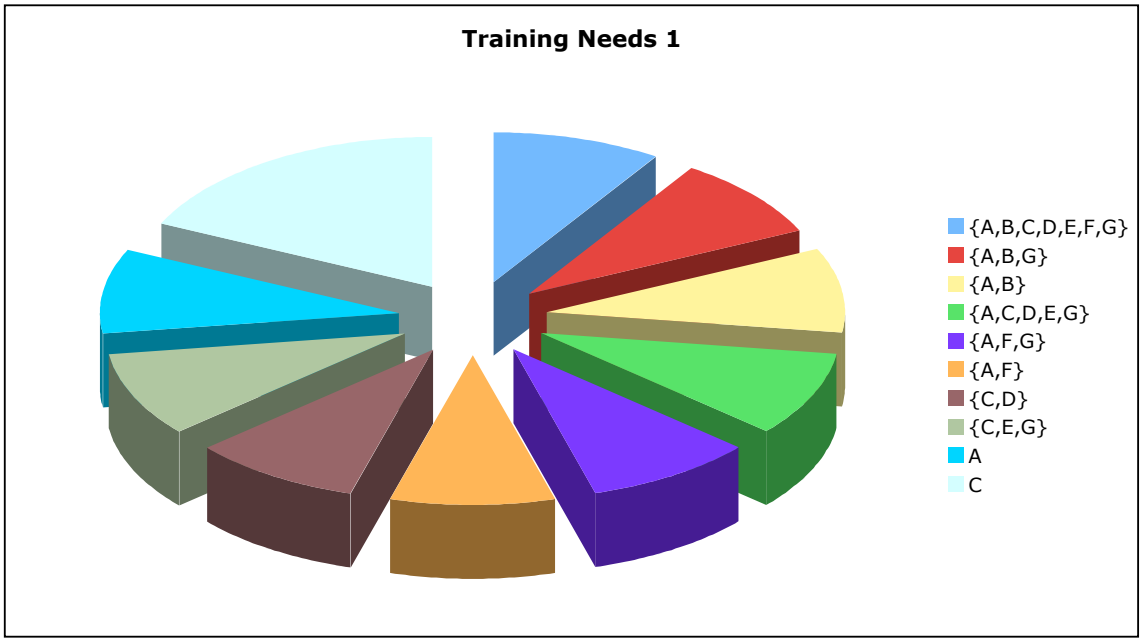
9. If "Other" is selected, description of the performance assessment type.

lab write ups

10. Evaluation of the overall success of your Bush IT project. (How will you know you have succeeded?)
A. Student response data
B. Reflection
C. Feedback from colleagues
D. Fulfilling identified project goals
E. Improvements in course design or implementation
F. Use of your work by others in the field



12. Please check the items you would like further training on. Check at least one.
A. Flash
B. Imaging
C. Course management systems
D. Web page design and maintenance
E. Breeze Live
F. Breeze Presenter
G. Streaming Video



13. Please check the items you would like further training on. Check at least one.
A. Wikis
B. Blogs
C. Podcasting
D. Personal response systems (clickers)
E. Instant messaging
F. Discussion boards
G. Polls

VII. PROJECT PARTICIPATION

Because of the exceptional characteristics of the UMM faculty. staff and students, engaging desired number of participants was trivial for both years. Most of the participants devoted their time without getting any financial support from the grant just to enhance students learning in a best way possible.

For the first year the grant supported eight projects instead of five. The project participants all agreed on the cut in grant support so that more projects could be supported. Instead of $2,000 per project, five projects received $900, one project received $1500, and one project received $2,000.

For the second year, the grant supported eleven projects instead of five.

Table 1a and **Figure 1a** give the proposed and accomplished project participants for the first year (2005-2006). The proposal aimed for involvement of twenty total faculty, professional staff and students. In implementation, this number increased to thirty-four. Clearly, this indicates a larger impact of the project than anticipated.

Table 1b and **Figure 1b** give the proposed and accomplished project participants for the second year (2006-2007). The proposal aimed for involvement of twenty total faculty, professional staff and students, this number increased to thirty-five.

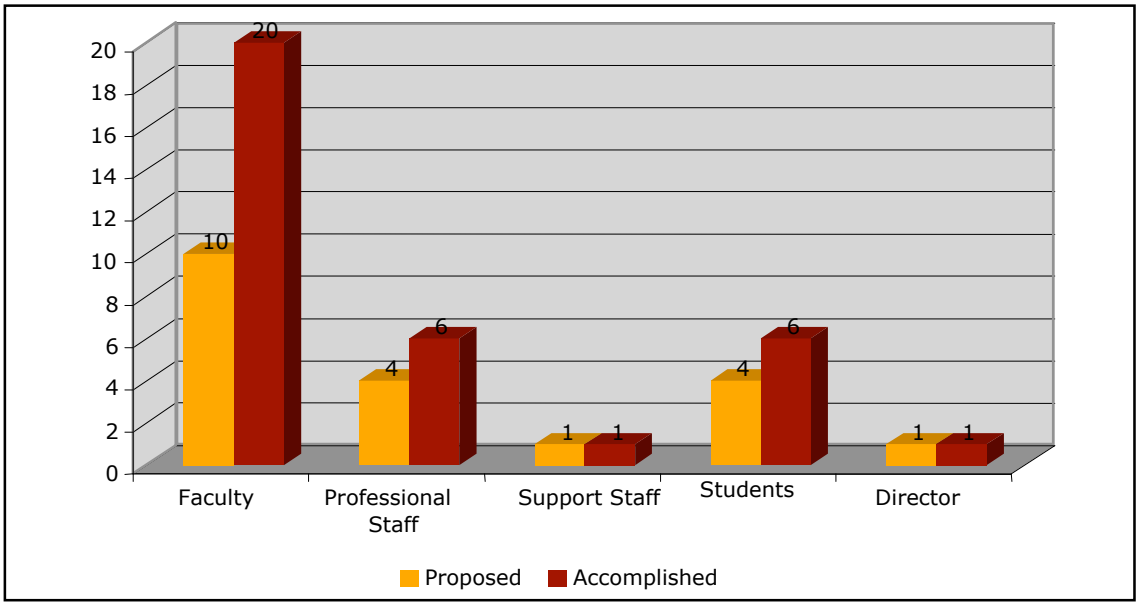


Figure 1a. Comparison of proposed and accomplished project participation (2005-06)

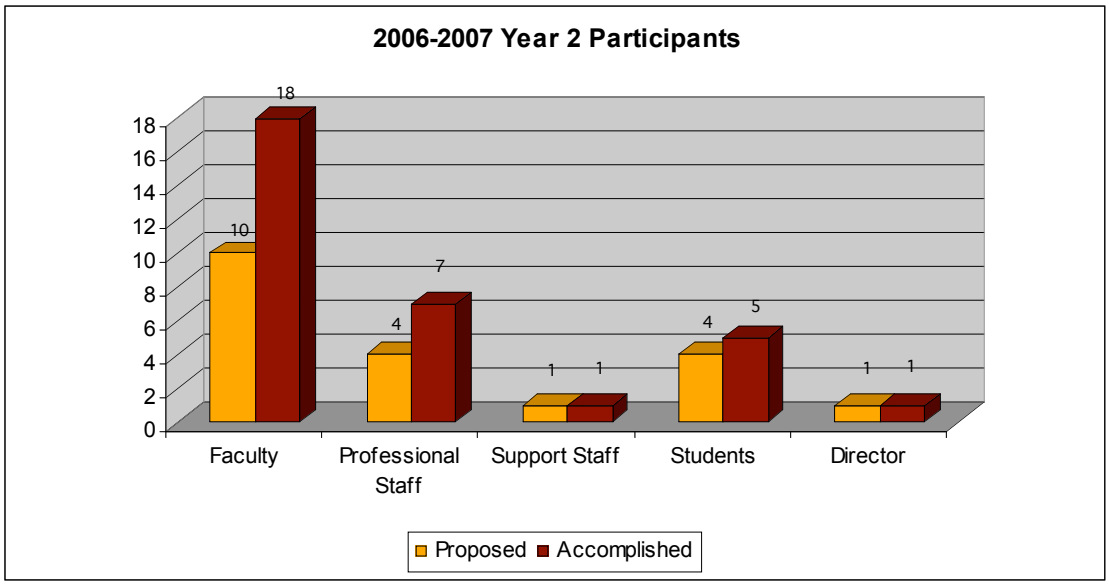


Figure 1b. Comparison of proposed and accomplished project participation (2006-07)

Proposed	Accomplished
Project Director	Engin Sungur, *Campus Coordinator, Professor of Statistics, Director of Faculty Center for Learning and Teaching*
Support staff	Linda Pederson, *Faculty Center for Learning and Teaching*
Core Group • 2 faculty members, 2 professional staff @$500	4 faculty, 4 professional staff, 2 students • Engin Sungur, *Campus Coordinator, Professor of Statistics, Director of Faculty Center for Learning and Teaching* • Katherine Benson, *Associate Professor of Psychology, Chair of UMM Assessment of Student Learning Committee* • Paul Myers, *Associate Professor of Biology* • Pam Gades*, Instructional Technology Specialist, Computing Services* • Karen Johnson, *GenEdWeb Program Coordinator, 2004-September 2005* • Karen Cusey, *GenEdWeb Program Coordinator, (October 2005-)* • Pam Solvie, *Assistant Professor of Elementary Education* • Roger Boleman*, Director of Media services* • Scott Esler*, Student, Project Manager (2004-September 2005)* • Molly Kloek*, Student, Project Manager (September 2005-)*
Consulting Group • 4 students @ $2000 • 3 faculty @ $1500 • 2 professional staff @ $500	4 students, 3 faculty, 2 professional staff • Scott Esler*, Student, Project Manager* • Pam Gades, *Instructional Technology Specialist, Computing Services* • Karen Johnson, *GenEdWeb Program Coordinator* • Tom Johnson, *Associate Professor of Psychology* • Pam Solvie, *Assistant Professor of Elementary Education* • Greg Thorson, *Associate Professor of Political Science* • Matt Harren, *Student* • Molly Kloek, *Student* • Aaron Vasecka, *Student*
Faculty Participants • 5 faculty @2000	13 faculty • Tammy Berberi, *Assistant Professor of French* • Viktor Berberi, *Assistant Professor of Italian* • *Sylke Boyd, Assistant Professor of Physics* • Becca Gercken-Hawkins*, Assistant Professor of English* • Byungik Kahng*, Assistant Professor of Mathematics* • Elena Machkosova, *Assistant Professor of Computing Sciences* • Nic McPhee, *Associate Professor of Computing Sciences* • Gretchen Minton, *Assistant Professor of English* • Janet Schrunk Ericksen, *Assistant Professor of English* • Pam Solvie, *Assistant Professor of Elementary Education* • Greg Thorson, *Associate Professor of Political Science* • Minh Vo, *Assistant Professor of Economics and Management* • Min Zhou, *Assistant Professsor of German*
TOTAL: 20	**TOTAL: 34**

Table 1a. Proposed and accomplished project participants (2005-06).

Proposed	Accomplished
Project Director	Engin Sungur, *Campus Coordinator, Professor of Statistics, Director of Faculty Center for Learning and Teaching*
Support staff	Linda Pederson, *Faculty Center for Learning and Teaching*
Core Group • 2 faculty members, 2 professional staff @$500	4 faculty, 3 professional staff, 2 students • Engin Sungur, *Campus Coordinator, Professor of Statistics, Director of Faculty Center for Learning and Teaching* • Katherine Benson, *Associate Professor of Psychology, Chair of UMM Assessment of Student Learning Committee* • Paul Myers, *Associate Professor of Biology* • Pam Gades, *Instructional Technology Specialist, Computing Services* • Karen Cusey, *GenEdWeb Program Coordinator, (October 2005-)* • Pam Solvie, *Assistant Professor of Elementary Education* • Roger Boleman, *Director of Media services* • Molly Kloek, *Student, Project Manager (September 2005-August 2006)* • *Brady Alsaker, Student*
Consulting Group • 4 students @ $2000 • 3 faculty @ $1500 • 2 professional staff @ $500	4 students, 3 faculty, 2 professional staff • Molly Kloek, *Student, Project Manager* • Matt Helgeson, *Student* • * Brady Alsaker, *Student* • * Trent Wold, *Student* • * Emily Schwieger, *Student* • Michelle Page, *Assistant Professor of Secondary Education* • Pam Solvie, *Assistant Professor of Elementary Education* • Kristen Lamberty, *Associate Professor of Political Science* • *Nic McPhee, Associate Professor of Computer Science* • Pam Gades, *Instructional Technology Specialist, Computing Services* • Karen Cusey, *GenEdWeb Program Coordinator* ***students received additional funds(FWS) through Media Services or Faculty Center***
Faculty Participants • 5 faculty @2000	13 faculty • Tammy Berberi, *Assistant Professor of French* • Viktor Berberi, *Assistant Professor of Italian* • Byungik Kahng, *Assistant Professor of Mathematics* • Pam Solvie, *Assistant Professor of Elementary Education* • Greg Thorson, *Associate Professor of Political Science* • Bert Ahern, Professor of History • Ted Pappenfus, *Assistant Professor of Chemistry* • Nancy Carpenter, *Associate Professor of Chemistry* • Jimmy Schryver, *Assistant Professor of Art History* • Carol Marxen, *Associate Professor of Elementary Education* • Jeffrey Ratliff-Crain, *Associate Professor of Psychology* • Pam Gades, *Instructional Technology Specialist, Computing Services* • Karen Cusey, *GenEdWeb Program Coordinator*
TOTAL: 20	**TOTAL: 35**

Table 1b. Proposed and accomplished project participants (2006-07).

For the first year, as it can be seen from figures 2a & 3a, 56% of all grant participants were female. For the project participants, percentage of females were 62. Table 2a gives the distribution of the twenty faculty to the disciplines. Overall grant participants came from thirteen disciplines. All of the four divisions of the UMM was represented within the group.

For the second year, the total grant participation equaled 50% female and 50% male see figures 2b and 3b). For the project participants, percentage of females were 46%. Table 2b gives the distribution of the twenty faculty to the disciplines. Overall grant participants came from fourteen disciplines, plus Computing Services, and Continuing Education.

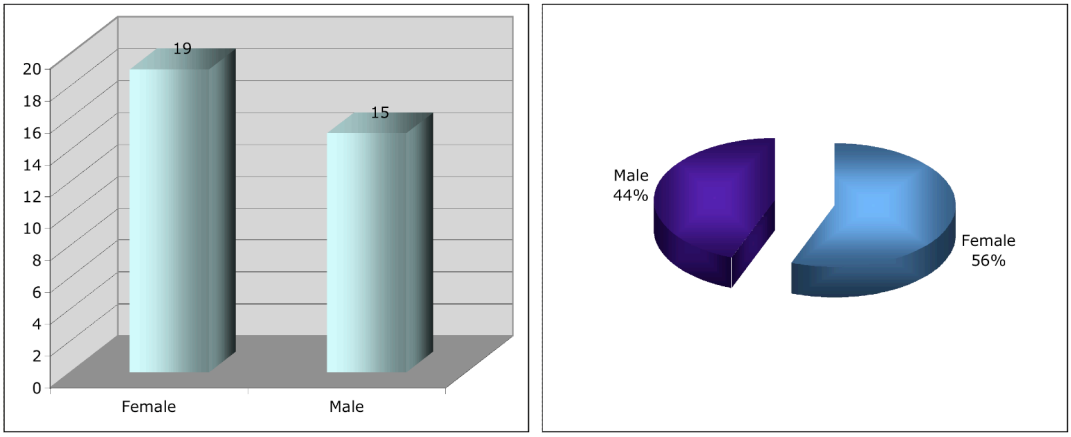


Figure 2a. Sex distribution of all grant participants (2005-06)

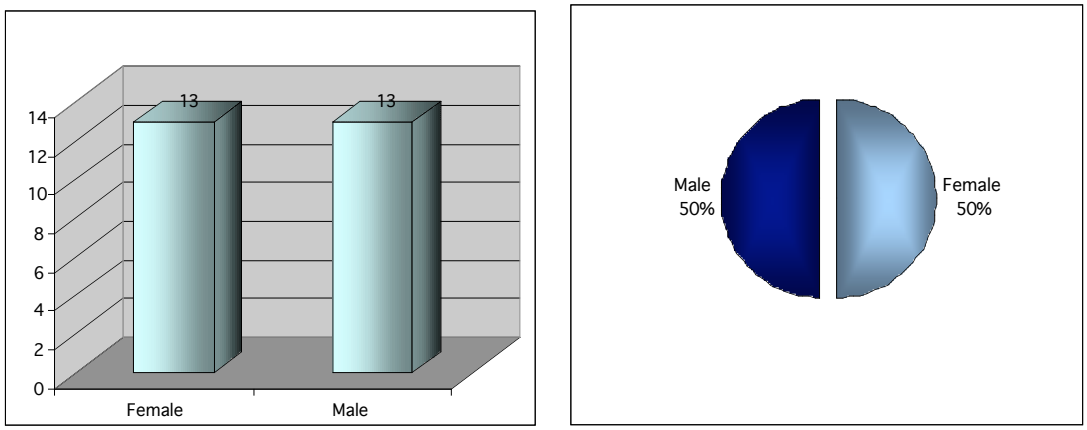
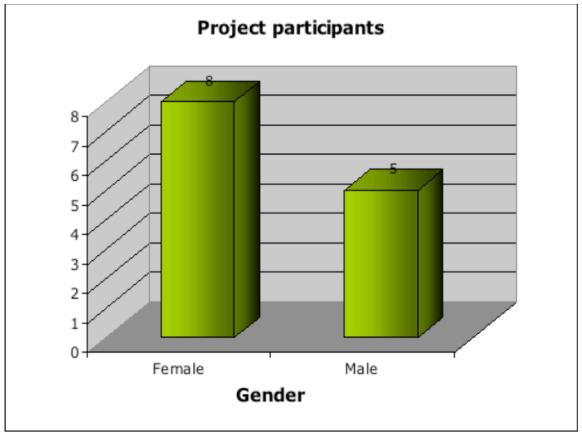


Figure 2b. Sex distribution of all grant participants (2006-07)



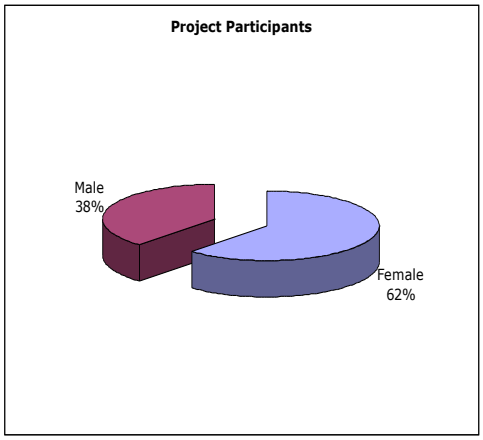
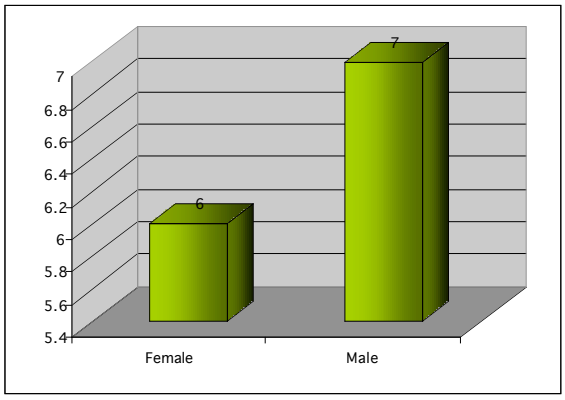


Figure 3a. Sex distribution of thirteen project participants (2005-06)



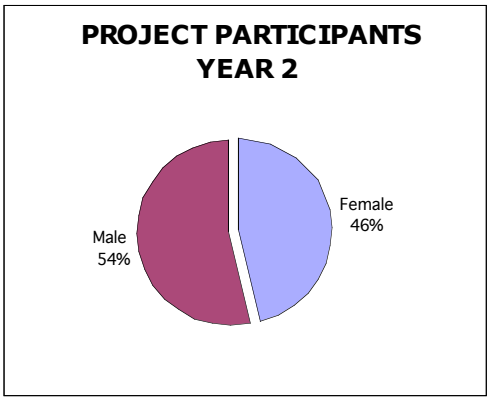


Figure 3b. Sex distribution of thirteen project participants (2006-07)

Division	Discipline
Science & Mathematics	Statistics
	Biology
	Physics
	Mathematics
	Computer Science
Social Science	Psychology
	Political Science
	Economics & Management
Humanities	English
	French
	Italian
	German
Education	Elementary Education

Table 2a. The distribution of faculty participants to the divisions and disciplines.

Division	Discipline
Science & Mathematics	Statistics
	Chemistry
	Biology
	Mathematics
	Computer Science
Social Science	Psychology
	Political Science
	History
Humanities	Art History
	French
	Italian
	German
Education	Secondary Education
	Elementary Education
Other	Computing Services
	Continuing Education

Table2b. The distribution of faculty participants to the divisions, disciplines, computing services and continuing education.

VIII. PROJECT AND COURSE PROFILES

During the first year of the grant eight projects instead of five have been supported. Since some of them were collaborative projects thirteen faculty were involved. The project will have an impact on thirteen courses and three hundred ninety students. The titles of the eight projects were:

- **Project 1: Technology Integration to Support Constructivist and Collaborative Learning,** Pam Solvie
- **Project 2: Forum for English Seminars,** Becca Gercken-Hawkins, Gretchen Minton, Janet Shrunk-Ericksen
- **Project 3: Foreign Language Work Group,** Tammy Berberi, Viktor Berberi, Min Zhou
- **Project 4: Dynamic Web Page Teaching Tools,** Elena Machkasova, Nic McPhee
- **Project 5: Using Mathematica on Teaching Calculus to Diverse Learners,** Byungik Kahng
- **Project 6: Computer Modeling of Materials in Physics,** Sylke Boyd
- **Project 7: Financial Management,** Minh Vo
- **Project 8: Horizontal Integration of Constitutional Law,** Greg Thorson

The details of each project are given in sections VIII.a.1-8.

During the second year of the grant eleven projects instead of five have been supported. Since some of them were collaborative projects thirteen faculty were involved. The project will have an impact on forty-six courses and one thousand twenty four students. The titles of the eleven projects for 2006-2007 were:

- **Project 1: Literacy and Language Instruction in the E.Sch,** Pam Solvie

- **Project 2: Increasing Technology in Elementary Education with the ProScope Microscope,** Carol Marxen
- **Project 3: Student Response System,** Nancy Carpenter
- **Project 4: Student Response System,** Ted Pappenfus
- **Project 5: Addition of a Learning Styles Assessment to Existing Online Interactive Study Guide,** Jeffrey Ratliff-Crain
- **Project 6: Creating Associative learning Tools for French and Italian Courses,** Tammy Berberi, Viktor Berberi
- **Project 7: Introduction to World History since1500,** Bert Ahern
- **Project 8: Developing Mathematica modules for UMM Calculus Courses,** Byungik Kahng
- **Project 9: Art History Image Library,** Jimmy Schryver
- **Project 10: Student Response System,** Greg Thorson
- **Project 11: Course Prototype,** Pam Gades, Karen Cusey

The details of each project are given in sections VIII.b 1-11.

VIII.a.1. PROJECT 1: *Technology Integration to Support Constructivist and Collaborative Learning*

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Pam Solvie**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: **Elementary Education 3102-Literacy and Language Instruction in the Elementary School**

Number of Students Impacted by Course thirty one students

Student Learning/Teaching Issue: **Technology Integration to Support Constructivist and Collaborative Learning**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur:

Course Description: *(Please provide the course overview that appears in course bulletins)*

ELED 3102 **– Literacy and Language Instruction in the Elementary School**
(4.0 cr; Prereq-admission to elementary teacher education program; fall, every year)
Beginning and advanced reading instruction in the elementary grades. Includes study of theory, issues, literacy frameworks, assessment, materials, organization, and instructional strategies to scaffold children's literacy development.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Technology Integration to Support Constructivist and Collaborative Learning
Pam Solvie
Feeling confident about the content of my courses, I want to integrate technology to support constructivist and collaborative learning experiences within courses in a way that will support the content. I would like to use meaning-making or visualization tools to scaffold and clarify concepts during class instruction, changing delivery from formal lecture formats. I would like to investigate and use technology tools during class presentations to communicate in more effective ways by engaging students with information. I believe students will benefit from the inclusion of visual, audio, and spatial modes into what has been mainly a linguistic framework involving written and spoken language.

Additionally I envision using technology as a collaboration tool to communicate with

students more effectively outside of class as well, which may mean access to and use of the visualization tools used within class sessions on course web pages along with tools to react to, reflect on, and share understandings about course content.

Activities/Work completed:

- I have reviewed the learning style resources/articles Molly has posted on the grant website and on my own project resource site. I have made suggestions for further articles, read selected articles, and have searched out further information on a number of learning style models. I have selected those that fit my project best to use as directives in my project and course work. I have reviewed video clips and suggested a possible organization of the clips. Matt has developed a plan for capturing and accessing these clips. I have reviewed conceptual mapping software with Aaron and chosen the software I will make use of to construct conceptual maps in my project work. I have learned about Flash animation and how to proceed with this part of my project using tutorials created by Aaron for this. I have applied for and received approval from The IRB: Human Subjects Committee to begin research as described in my IRB application.
- This month I have met with Professors from Augsburg to discuss the MN Statute regarding reading instruction in that the course my project focuses on involves reading instruction. Learning more about the new legislative requirements, I have begun to revise my syllabus to address the statute as well as my Bush Grant goals. With Molly and Matt's work I have multiple video clips to incorporate into my course. Molly and Matt have found a way to make these very accessible for instruction. I have had my webpage moved to the www server so that I can make use of a discussion board. Aaron has spent considerable time helping me with the discussion board and has helped me set up and practice use of the VNC connection in the classroom where I will be teaching (so that I can make use of cooperative learning groups and technology). I have reviewed Moodle and would like to learn more about it. I have made use of project resources Molly has posted on use of PowerPoint to gain more information on effective use of PP to engage learners. I have practiced with some features of PP that I hope will engage my students in learning.

Scholarly approach:

- I researched, read, and reread information on creation of a constructivist learning environment. I also researched and reread information on a variety of learning style models before I settled on use of Kolb's theory to guide my work in this project. I experimented with technology tools, selecting those that would benefit students' understanding of course content. I benefited greatly from the resources provided and posted on the TEL webpage for all of the projects.
- Collaboration was important and beneficial to work on my project. Learning about technology tools, learning how to incorporate these tools into my course, and sharing ideas about them through E-mail correspondence, at workshops, and through desk-side assistance is evidence of this collaborative work. I learned more about Flash animation, wikis, discussion boards, BreezeLive and BreezePresenter as a result of this collaboration. I was able to present information to and lead discussion on learning styles with other project participants at a summer workshop as well.
- A very good example of how collaboration and a scholarly approach to teaching were important to my project is the use of a wiki. A number of project participants were interested in tools that might allow use of a wiki in our courses. Discussion with others, research on wiki tools by the grant workers, and

experimentation with some possibilities led to my use of a wiki assignment to be completed through our course discussion board. The assignment proved to be beneficial in a number of ways both for developing understanding of course content and for effective, efficient use of technology tools.

Successes/Challenges encountered:

- All of the above activities have been successful for me.
- All of the above have been successful, but planned work is not yet completed on these components at this point. I am very excited about use of my discussion board as version of a 'wiki'! This will serve the purposes I have for use of a wiki but will also be secure. A success for me continues to be the excellent help Aaron, Molly, and Matt are providing.
- Time continues to be a challenge. I understand how much time is going to be required to complete the activities that are a part of my project in preparation for implementation during fall semester.
- I need an SQL data base in order to set up my discussion board in the manner I would like it set up. I hope this can be taken care of this coming week. I would like to learn more about Moodle and investigate further its uses for the future.

Assessment/Evaluation of the project:

- Data was collected in two sections of Elementary Education 3102. Students signed permission forms as per Institutional Review Board procedures, agreeing to formally participate in this study and have their work reviewed. The data I collected for my project includes information on students' learning styles, student reflections on course assignments and class presentations, student participation on the course discussion board, and assessment of student work on four examinations and two course projects. Interview data will be added to this when student interviews are completed at the beginning of spring semester.
- Thirty one students participated in this study.
- Tools used to collect this data included a learning style inventory (a version of Kolb's learning style inventory); two course questionnaires (one completed at midterm and one completed at the end of the semester), reflection logs, discussion board posts, essay examinations, and project rubrics. Random interviews will also be conducted. These are planned for the beginning of spring semester.
- The data will be evaluated to look for connections between technology tools used and student learning over time in Elementary Education 3102. Careful analysis will be made to determine if the technology tools used proved beneficial to particular students in terms of their learning styles. Both quantitative and qualitative analysis will be done. Statistical analysis will be done using information from the two course questionnaires that made use of a five point Likert scale. Statistical analysis will also be done in review of students' examination, discussion board posts, and course project scores based on learning style. Qualitative analysis will be used to look carefully at students' written reflections for themes that may emerge in terms of learning styles and technology tools that supported or did not support students' learning as evidenced in the self report documents.
- I used the student questionnaires that were completed at midterm to make adjustments in class presentations as well as course assignments. I spoke with students in class, about the results of the questionnaire. As a result of the feedback provided on the questionnaire I reduced the reading load, worked to clarify assignments, worked to be more explicit about the purpose of class

activities, and explained use of technology tools. I also changed the questions used as prompts for the discussion board to encourage reflection, comprehension, and engagement. I increased the use of video clips in class presentations and changed the way I made use of these clips.

- As a result of the course questionnaire completed at midterm I also worked to ensure that all four of Kolb's stages of the learning cycle were in place in my class presentations and course assignments.
- These adjustments were acknowledged by my students who indicated appreciation. I recognize that further work is still needed. Though data analysis is not complete I am already noting changes that would benefit course content delivery and student engagement in learning for the upcoming session of this course.
- Students indicated they benefited from explicit descriptions, modeling, and examples. As a result I worked to improve the way I made use of video clips and analysis of these in class. I showed shorter clips to point out specific theories and instructional strategies. I worked to link these to reading assignments and class discussions. Using Kolb's learning cycle, I found showing these brief clips and or modeling at the beginning of class helped students 'grasp' the information. Discussion, role play, and writing helped students to 'transform' the experience.
- Students indicated they benefited from instruction that directly explained the course reading assignments. Students expressed some frustration in being expected to read and discuss these reading assignments in class. They indicated they did not enjoy learning using a constructivist approach. This was not clearly stated but was evidenced in class discussion following completion of the course questionnaire and was evidenced from observations of their approaches in completing class assignments and activities. As a result I placed much less attention on creating a constructivist learning environment and focused more attention on how I might use technology tools in the course assignments and class presentations more explicitly to support the four learning styles and the four-stage model as identified by Kolb.
- Students indicated they appreciated the resources available on the course webpage and used these to follow up on class activities. As a result I added further pieces used in class for their use outside of class. Further adjustments are needed in how these resources might best be organized and accessed.
- I worked to be more clear about the learning styles (four-type definition of Kolb's model) the technology tools, class assignments, and class activities were designed to address. I hoped this would help students see value in the varied tools used and choose those that would help them learn effectively and efficiently. More work is needed to help students make use of their learning style information both to make these choices and to see how various tools support understanding of content.

Feedback received:

I have received very positive feedback from Scott, Matt, Aaron, and Molly as well as others on the Consultative Committee.

Other Notes:

The assistance and expertise provided has been wonderful!

Additional Assistance needed to advance work:

- I would like help locating Kolb Learning Style Inventories that might be less costly than $85/10. Is there a source that might provide them for less money? I believe I will need to meet with Aaron regarding Flash again. I would also like to begin work on setting up the discussion board, and creation of a Wiki. Can I create a spot for these on my course webpage or link to them from there? I have an idea for how these might look. Do they have to be structured in a specific manner?
- Final setup of the discussion board and assistance in reviewing administration of it. Continued work with Flash.

VIII.a.2. PROJECT 2: *Forum for English Seminars*

VIII.a.2.1. COURSE 1

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Becca Gercken-Hawkins**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: **ENG 4017 Tricksters and Conjurers in Native American and African American Literature.**

Number of Students Impacted by Course twelve students

Student Learning/Teaching Issue: **Forum for English Seminars**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: semester,year

Course Description: *(Please provide the course overview that appears in course bulletins)*

ENGL 4017 **- Research Seminar: Tricksters-Conjurers in Native American and African American Literature (HDIV)**
(4.0 cr; Prereq-1131, two from 2201, 2202, 2211, 2212, #; fall, spring)
Study of tricksters and conjurers in Native American and African American literature, in particular their ability to maintain traditional practices and subvert the dominant culture and imposed cultural norms. Special attention given to cultural and historical contexts and questions of power, identity, cultural difference, and assimilation.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Forum for English Seminars
Becca Gercken-Hawkins, Gretchen Minton, Janet Schrunk Ericksen
This project seeks to enhance student learning through the development of a web forum for all English seminars. Our discipline requires all majors to take a research seminar. This course is designed to foster not only written research, but also dialogue regarding primary and secondary readings and student-generated research. Because discussion is such a vital part of the class, enrollment is capped at 12 students. While the small class size does aid in discussion, we believe that a web forum will dramatically enhance the debate and thus the learning that takes place in our research seminars. The primary enhancement will be in the opportunity for students to continue class discussion outside

of the seminar. Students will have time to respond to comments made in class, to discuss concepts and texts in greater detail, and in general to expand the conversation beyond class time constraints. In addition, this discussion format benefits those students who feel less comfortable speaking in class and will lead to a more balanced discussion that allows all students an equal opportunity to participate.

We are requesting that two permanent forums be established on the English Discipline Website. Each semester these forums could be tailored to the two Research Seminars offered, giving faculty with little or no experience in web-based teaching practices the opportunity to make IT-supported learning part of their pedagogy.

This project will benefit the entire English discipline and its majors. However, we are including only the names of myself, Gretchen Minton, and Janet Schrunk Ericksen as the core faculty for this project because Gretchen Minton and I are teaching Research Seminars in the fall and Janet Shrunk-Ericksen is the discipline coordinator.

Activities/Work completed:

- So far Janet and I have only done a brief review of what the forums look like, how we and our students can access them, etc. Because our project is entirely about the forums, we are very much in a holding pattern until we generate information and feedback from our students when classes begin. We are planning to arrange a training session this week to further familiarize ourselves with the forum options.
- Starting with the second week of classes, I and/or one of my students posts a new topic for discussion--this is the base requirement for participation in the web forum.

Scholarly approach:

Successes/Challenges encountered:

- So far my students have done a great job responding to posts and participation seems to be fairly even among the students. I am pleased that several students have taken the web forum beyond the base course requirement of responding to at least 1 specific post/topic generated by me or a student. Students seem to expand the topic beyond its origins in a way we often can't accommodate in class time.
- It is not a challenge or a disappointment, but it has been a bit difficult to adequately participate in TEL activities thus far since we need student input in the forums before we really have a lot to say. I have never used a web forum before, so I will be learning along with my students in the fall and will have much more to say about this project once classes get going.
- I struggle with finding topics for the forum that are different from what I want to cover in class and also I am not sure how much to pull forum comments into class discussion. Sometimes if there's a thread that seemed fruitful but didn't get far or only a few students commented, I do bring that into class discussion.

Assessment/Evaluation of the project:

- For my course, Tricksters and Conjurers in Native American and African American Literature, student response was generally positive.
- Students expressed a desire to have a set number of responses over the course of the semester rather than a weekly participation requirement.
- Students found the software (SMF) easy to use.

- Students especially liked the forum as a communication tool as they neared the end of the semester and the due date of their large research projects.
- In terms of evaluating student response to the forum, I had my students take surveys at the beginning and end of the semester. The first indicated their familiarity and concerns with a web forum as part of the course. The second gave students the opportunity to evaluate the forums after a semester of use.
- In terms of evaluating student participation, I will consider the quantity and quality of posts on the forum.
- I had hoped that students who had limited participation in class discussion would participate more actively on the forum; I saw this result from 50% of the students. For the other 50%, their participation level on the forum was similar to their participation level in class.
- It is still too early in our project to make any department-wide adjustments.

Feedback received:

- I have gotten helpful info from both Gretchen Minton and Nic McPhee regarding strategies for making the forums a valuable and workable part of class. Both had recommendations for ensuring appropriate and adequate student participation and methods for evaluating participation.
- At the suggestion of Chris Scruton, I surveyed my students on the first day of class about any previous experience with web forums. I really appreciated the suggestion because the feedback I got from my students helped me shape the way I presented our class forum to them. About half of my students had previous experience, mostly with Web CT which they had SERIOUS problems with. The issue seemed to be primarily format rather than the actual concept of a web discussion, so I focused on how different our software was from Web CT and emphasized that we had chosen software specifically to counter many of the problems associated with Web CT. Thus far students are extremely pleased with our software--they find it easy to negotiate the options and access what they need. I think my students are doing a great job of extending our class discussion via the forum.

Additional Assistance needed to advance work:

The forums need to be password protected and we need to address FERPA issues. The TEL group at the Twin Cities Campus has raised concerns over student privacy.

VIII.a.2.2. COURSE 2

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Gretchen Minton**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: **ENGL 4019 - Research Seminar: Rewriting Shakespeare for Film and Stage (HUM)**

Number of Students Impacted by Course twelve students

Student Learning/Teaching Issue: **Forum for English Seminars**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Spring 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

ENGL 4019 **- Research Seminar: Rewriting Shakespeare for Film and Stage (HUM)** (4.0 cr; Prereq-1131, two from 2201, 2202, 2211, 2212, #; offered when feasible; fall, spring)
Study of plays and films from the Restoration until today that involves a rewriting or revision of a Shakespearean play. Through detailed analysis of these revisions, students explore questions about the authenticity of the Shakespearean "original" and how people from other time periods have appropriated his plays for their own purposes.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Forum for English Seminars
Becca Gercken-Hawkins, Gretchen Minton, Janet Schrunk Ericksen
This project seeks to enhance student learning through the development of a web forum for all English seminars. Our discipline requires all majors to take a research seminar. This course is designed to foster not only written research, but also dialogue regarding primary and secondary readings and student-generated research. Because discussion is such a vital part of the class, enrollment is capped at 12 students. While the small class size does aid in discussion, we believe that a web forum will dramatically enhance the debate and thus the learning that takes place in our research seminars. The primary enhancement will be in the opportunity for students to continue class discussion outside of the seminar. Students will have time to respond to comments made in class, to discuss concepts and texts in greater detail, and in general to expand the conversation beyond class time constraints. In addition, this discussion format benefits those students who feel less comfortable speaking in class and will lead to a more balanced discussion

that allows all students an equal opportunity to participate.

We are requesting that two permanent forums be established on the English Discipline Website. Each semester these forums could be tailored to the two Research Seminars offered, giving faculty with little or no experience in web-based teaching practices the opportunity to make IT-supported learning part of their pedagogy.

This project will benefit the entire English discipline and its majors. However, we are including only the names of myself, Gretchen Minton, and Janet Schrunk Ericksen as the core faculty for this project because Gretchen Minton and I are teaching Research Seminars in the fall and Janet Shrunk-Ericksen is the discipline coordinator.

Activities/Work completed:

Training session with Scott and Aaron on Tuesday to set up the web discussion forum for my fall class.

Scholarly approach:

Successes/Challenges encountered:

- Last year I began implementing a web forum for my seminar, and found it very useful, but was unfamiliar enough with the technology to believe that I did not use it in the best way. I am looking forward to trying again with more assistance, hoping for a more thorough inclusion of it in my class this year.
- Because I have just returned from a summer away, I have not yet been able to devote the needed time to this project, and have not been able to complete the requested reflections.

Assessment/Evaluation of the project:

Feedback received:

My colleagues are generally excited about this project. Last year my students were somewhat resistant to the web forum as a major componant of the class, so I am hoping for more success this year.

Additional Assistance needed to advance work:

- More short training sessions that give me a sense of the range of options available for this project.

VIII.a.2.3. COURSE 3

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Janet Ericksen**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: ENGL 4004 **- Research Seminar: Old English Literature and Language (HUM)**

Number of Students Impacted by Course Twelve Students

Student Learning/Teaching Issue: **Forum for English Seminars**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Spring semester 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

ENGL 4004 **- Research Seminar: Old English Literature and Language (HUM)**
(4.0 cr; Prereq-1131, two from 2201, 2202, 2211, 2212, #; fall, spring)
Prose and poetry of early medieval England (650-1100) in translation and in Old English (which is studied), with attention to material (manuscripts) and cultural contexts and to reception history.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Forum for English Seminars
Becca Gercken-Hawkins, Gretchen Minton, Janet Schrunk Ericksen
This project seeks to enhance student learning through the development of a web forum for all English seminars. Our discipline requires all majors to take a research seminar. This course is designed to foster not only written research, but also dialogue regarding primary and secondary readings and student-generated research. Because discussion is such a vital part of the class, enrollment is capped at 12 students. While the small class size does aid in discussion, we believe that a web forum will dramatically enhance the debate and thus the learning that takes place in our research seminars. The primary enhancement will be in the opportunity for students to continue class discussion outside of the seminar. Students will have time to respond to comments made in class, to discuss concepts and texts in greater detail, and in general to expand the conversation beyond class time constraints. In addition, this discussion format benefits those students who feel less comfortable speaking in class and will lead to a more balanced discussion that allows all students an equal opportunity to participate.

We are requesting that two permanent forums be established on the English Discipline Website. Each semester these forums could be tailored to the two Research Seminars offered, giving faculty with little or no experience in web-based teaching practices the opportunity to make IT-supported learning part of their pedagogy.

This project will benefit the entire English discipline and its majors. However, we are including only the names of myself, Gretchen Minton, and Janet Schrunk Ericksen as the core faculty for this project because Gretchen Minton and I are teaching Research Seminars in the fall and Janet Shrunk-Ericksen is the discipline coordinator.

Activities/Work completed:

- We have set up the forums for use, and I have begun planning how to incorporate them into my spring seminar course.
- I met with staff last summer to help me understand how to run the system.

Scholarly approach:

Student collaboration or faculty collaboration? On the student side, the forums will facilitate collaboration in the learning of the language (Old English) and its literature. I hope students will use the forums to ask both specific translation questions and to raise issues that we can continue to discuss in class or that we began in class but did not have time to pursue. On the faculty side, because three of us are trying out these forums, we are also collaborating on ideas for incorporating them into the classes and on improving use of the forums.

Successes/Challenges encountered:

- None for me individually, yet, although the possibility of having forums is something in which students I've talked to about it are interested.
- Until I actually put the forums into use in my spring course, I won't have much to comment on here, although I'd like to have more of my colleagues interested in using the forums.
- Maintaining, updating the forums. Without ongoing technical support, the forums will quickly disappear, because faculty simply have neither the skills nor the time to acquire the skills to adapt the system in any large ways. We have, for instance, no knowledge of and no instructions about how to add a new class to the forums.

Assessment/Evaluation of the project:

- I have collected none yet, as I do not begin using the forums until spring semester.
- With any major new element in a class, I use mid-term written evaluations as well as trying to talk to students on a regular basis, inside class and out of it, about the innovation. Though the conversations do not yield data, they are often the most helpful means of learning about what problems and successes students are encountering, so I do plan to continue them. With the forum set-up, I can also monitor participation and apply this to evaluation of the success of the technology.
- This is the first year of the project.
- While I have no data from my own class yet, I do plan to adapt to the responses to this technology from students in other classes. I have been told by my colleagues that the postings must be required to get students initially involved in the system.

Feedback received:

- Positive responses to the idea have been received, although none of the faculty not directly involved in the grant have yet incorporated the forums. As I plan next semester's class, I have consulted my colleagues who have used the forums, and they've offered useful guidance on incorporating the system into my class.
- One significant problem that has emerged lies in our ability to adjust the forums. One colleague who was interested in using the technology but who was not part of the grant team has now been told that the forums are not recommended by our computer services department, and we have, moreover, no way of adding her class into the list of classes initially set up for the forums, so her feedback has been negative.

Additional Assistance needed to advance work:

- More web training would be helpful, so that I felt more comfortable running the forum (and related things)--but this is an issue of time, and my schedule is full.
- I've partially addressed this above, but it bears repeating: we need ongoing technical support. We need someone to call when we have questions, someone to provide instructions (easy to use ones!) for making changes to what was initially set up, someone to tell us about technical updates and so on. We do not seem to have that, and this will severely limit the life of the forums.

VIII.a.3. PROJECT 3: *Foreign Language Work Group*

VIII.a.3.1. COURSE 1

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Tammy Berber**i

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: **Fren 1001 and 1002**

Number of Students Impacted by Course fifty students

Student Learning/Teaching Issue: ***Foreign Language Workgroup***

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Spring Semester, 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

FREN 1001 **- Beginning French I (FL)**
(4.0 cr; fall, every year)
An introduction to oral and written French, its basic structure, and to French culture.

FREN 1002 **- Beginning French II (FL)**
(4.0 cr; Prereq-1001 or placement or #; spring, every year)
Continuation of 1001.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Foreign Language Work Group
Tammy Berberi is researching universal design in learning as its principles might be applied in the foreign language classroom. She is co-editing a collection of essays devoted to this topic, which is under contract with Yale UP and has also begun creating multimedia materials based on the principles of UDI to present the first-year French textbook.

Activities/Work completed:

- I am coming at the work from a variety of different angles, developing the research component (in the form of an Introductory chapter to the book) while I work to develop multimedia tools that are attentive to the principles of Universal design
- I am already involved in a MAP with a student to create interactive course materials to supplement instruction in the first-year, required sequence and engage the best practices of Universal Design in Instruction. However, this project was too ambitious for one academic year, and the project will not be complete by the end of this AY. Somewhat of a setback: our discipline adopted a different text for the coming year, so the part of the project that I had already developed needs to be reworked
- Molly has been great about gathering research resources for my project.

Scholarly approach:

- I really appreciated collaborating with the student assistants that were available over the summer, and especially the extensive help of Molly Kloek. I also collaborated with two students for a MAP. Of course, the book under contract with Yale UP. Worlds Apart: Disability and Foreign Language Learning, is also collaborative: My co-editors are from Oberlin C and Gallaudet U. Our work may lead to new collaborations with experts in the field of Universal design in learning

Successes/Challenges encountered:

- I have had a very successful mentoring relationship with one student who plans to become a HS French teacher. Together, she and I created 5 chapters of lesson plans and Powerpoint presentations to accompany them. Together, we presented at the Foreign Language Conference of the Red River (12/04) and she authored a brief article based on our experiences together for the FLARR newsletter (a non-refereed publication) I was also invited to present work based upon the collection of essays under contract at Macalester College, and spoke there in early October.
- I would really like to incorporate French popular songs into the tool I am building. It has been difficult to find the songs I am looking for to download.
- Well, we in French have switched textbooks for the coming year, so I have had to begin anew, at least in part (Chapter 4 of 10 was complete in May, with the older textbook). To teach with a new FL textbook is a daunting prospect (prep is very intensive at beginning level of acquisition). I will teach 1002 in the spring and use the materials I develop as I can. Once I have a strong sense of the rhythm of the textbook and how best to use it, I will adjust and complete these IT materials and request to teach the full-year sequence 2006-07 (the following year). This is a lengthier timeline than I imagined, of course, and means that I will not be able to evaluate the effectiveness of these materials for some time.

Assessment/Evaluation of the project:

- I have been on Single Semester Leave this year and so have been unable to collect data.
- I plan to solicit feedback by means of a tailored evaluation of the new approaches I have incorporated. The research I have done on UDI and learning styles has transformed the way I think about evaluating student progress. This spring for the first time I will adopt a modular syllabus wherein students may tailor the ways they are assessed to their own strengths. I will also allow for multiple modes of completion for assignments (that is, students can opt to complete the same assignment in a variety of different ways.
- I did not teach this semester, so I have not been able to try this new approach

Feedback received:

- Colleagues have been very enthusiastic about this, both at the FLARR conference and at Macalester; besides those students who have been involved in developing these materials, students don't know about this, yet

Additional Assistance needed to advance work:

This project has gone quite well, but it is a small fraction of the potential for transformation in the classroom. I intend to apply for a TEL grant to expand this project

VIII.a.3.2. COURSE 2

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Viktor Berberi**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: ITAL 1301 **- CE: Beginning Italian I (FL)**

ITAL 1302 **- CE: Beginning Italian II (FL)**

Number of Students Impacted by Course Fifty-three students

Student Learning/Teaching Issue: **Foreign Language Work Group**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Spring Semester, 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

ITAL 1301 **- CE: Beginning Italian I (FL)**
(4.0 cr; fall, every year)
Introduction to Italian as it is presently spoken and written. Basic sounds, structures, and vocabulary of Italian. Understanding, reading, and writing the language and communicating in Italian about everyday situations. Relationship between culture and language.

ITAL 1302 **- CE: Beginning Italian II (FL)**
(4.0 cr; Prereq-1301 or placement or #; spring, every year)
Continuation of 1301

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Foreign Language Work Group
Tammy Berberi, Viktor Berberi, Min Zhou

Along with the CSci major and Italian student Michael Anderson, Viktor Berberi proposes to develop the Italian content for a pop-up program that Michael is designing. This program would present users with a vocab word or grammatical structure at regular intervals, and could be adapted for use with any foreign language.

Activities/Work completed:

I have organized the content for the pop-up program into three categories for each the chapters in our first-year text. These include vocabulary and grammar exercises that follow two formats, multiple-choice and another that require the student to generate the correct response. I am also including feedback for incorrect responses. As the pop-up program is not yet complete, I have used some of the content in on-line exercises, which lack, however, the ability to function as a stand-alone program running in the background as students use the computer for other tasks.

Scholarly approach:

I have used collaboration and a scholarly approach only in a broad sense, discussing approaches to teaching with other instructors and attending conference sessions addressing issues of pedagogy. Through this project I have done a certain amount of mentoring with the undergraduate working on the pop-up program.

Successes/Challenges encountered:

- The on-line resources that Molly put together for Tammy have helped me think about making this project respond to students' needs, particularly in terms of flexibility and ease of use.
- I think I have been successful in using on-line exercises to improve students' mastery of vocabulary and to contextualize language.
- The greatest challenge is certainly that of finding the time to prepare additional materials.

Assessment/Evaluation of the project:

- I haven't yet made these adjustments, but based on student reactions I would be inclined to streamline the computer work required of students, as they already have a significant amount, and much of it could be better focused to address specific needs.

Feedback received:

Once I have a working version of the pop-up program, I will try it out with my content. At that point I'm sure I'll want some feedback.

VIII.a.3.3. COURSE 3

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Min Zhou**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: **GER 3041 New German Cinema, Beginning Chinese 1001.**

Number of Students Impacted by Course forty-five students

Student Learning/Teaching Issue: ***New German Cinema***

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Spring Semester 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

GER 3041 **- New German Cinema (IP)**
(4.0 cr; =[HUM 3041]; Prereq-3011; offered when feasible; fall, spring)
Same as Hum 3041. Traces the development of New German Cinema, which began in the 1960s, and continues in the post-unification period. Introduction to films by both East and West German directors who define this national cinema; the cultural, political, and economic context of its production; reference to theories and critiques to provide an overview of German film and culture of the period. Film presentations are in German with English subtitles. Readings and lectures are in English. Final papers are either in German (for German credit) or English (for Humanities credit).

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Foreign Language Work Group
Tammy Berberi, Viktor Berberi, Min Zhou
We propose a foreign language workgroup comprised of the following faculty members: Min Zhou (German), Viktor Berberi (Italian) and Tammy Berberi (French). We are developing different IT projects that would be geared toward exploring different learning styles and priorities. Tammy Berberi is already involved in a MAP with a student to create interactive course materials to supplement instruction in the first-year, required sequence and engage the best practices of Universal Design in Instruction. However, this project was too ambitious for one academic year, and the project will not be complete by the end of this AY. Along with the CSci major and Italian student Michael Anderson, Viktor Berberi proposes to develop the Italian content for a pop-up program that Michael is designing. This program would present users with a vocab word or grammatical structure at regular intervals, and could be adapted for use with any foreign

language. Finally, Min Zhou plans to learn how to edit and compress short film clips for previewing activities for a film course she will teach in fall 05. These ideas all deserve further explanation and development, but the best part of this proposal is the opportunity to work with faculty members across languages, to share ideas, resources, and skills.

Activities/Work completed:

- I ordered video tapes and read through books I will use for my film course next year. I also replaced an out-of-print book with recently published one
- I watched films, read through related secondary literature, wrote down specialties of each individual film in regard to camera work, sound, and other visual effects, and recorded those parts I would like to record in August into clips.

Scholarly approach:

- Without a scholarly approach, the project would not have been carried out since it all depends on my understanding of the films.

Successes/Challenges encountered:

- It is very rewarding to find out the specialty of camera work in each of the films, how it is related to the director's intention and the film's content.
- It was difficult to find video tapes I wanted to purchase - some of them have no English subtitles, some of them were unavailable.
- It is not always easy to make myself aware of the camera work. Sometimes, it takes lots of readings and screenings to find them

Assessment/Evaluation of the project:

- After I sent my reflection note, I received an email from the assistant student group. We set up a time to meet and to talk about my project. After the first meeting, we went to meet with the media Service people, and to my surprise, Roger told me that he could help me copying and editing tape clips, which, as it turned out, saved me so much time and efforts.
- What I did not know is that because of the copy rights, only 10% of a tape is allowed to be copied. This limited my initial plan, and I wish I had known more about it.

Feedback received:

- I talked to a couple of friends about their experience working on films, and received valuable advices

Other Notes:

- I just hope that we will have the equipment to record video clips next month.

Additional Assistance needed to advance work:

- I will need to work with students next month, and finish the project.

VIII.a.4. PROJECT 4: Dynamic Web Page Teaching Tools

VIII.a.4.1. COURSE 1

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Elena Machkasova**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: **CSCI 1101 Dynamic Web Programming (M/SR)**

Number of Students Impacted by Course thirty-five students.

Student Learning/Teaching Issue: **Dynamic Web Page Teaching Tools**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Spring semester 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

CSCI 1101 **- Dynamic Web Programming (M/SR)**
(2.0 cr; offered when feasible; fall, spring)
Basics of dynamic web design; programming and problem-solving using web languages, such as PHP and HTML, and languages for data storage and manipulation, such as SQL and XML; introduction to client/server model; aspects of online privacy and security. Hands-on experience with creating and maintaining interactive web pages. No previous programming knowledge or experience required.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Dynamic Web Page Teaching Tools
Elena Machkasova, Nic McPhee
As web technologies have progressed, the possibilities and expectations have increased to the point where simple, static web pages constructed with HTML are no longer sufficient for many applications. Many important applications require the ability to manage significant collections of data and provide users with dynamic, customized access to information as well as the ability to add new content (like posting to a bulletin board). Students are familiar with such applications and are interested in creating their own. This interest can bring a diverse student population to a course that teaches algorithms and problem solving through development of dynamic web pages.

Our goal in this grant would be to create a set of tools we can use to teach a variety of

students fundamental programming concepts and algorithm through development and maintenance of dynamic web presences. These tools would be initially used in support of a new course for non-majors that will provide an opportunity for a broad spectrum of students to learn the basics of dynamic web page creation.

Once that course is established, we would also like to explore the possibilities of bringing these ideas into earlier stages of UMM's computing curriculum (e.g.,CSci 1301 and CSci 2101).

Activities/Work completed:

- We studied open-source PHP-based blogging software to be used as a sample large-scale project in the course and system requirements for each software. Thanks to Matt Justin for investigating this.
- We have identified HTML/CSS features we plan to teach in the course and created series of examples to introduce these features step-by-step. We identified and installed the versions of PHP and MySQL that we will use for the course.
- We created a prototype of a blog-like web site that we expect students to build during the course.

Scholarly approach:

- We plan to incorporate some elements of methodology of team work and of software design, known as agile software development, into the course. We are also looking into use of tools for project collaboration for students during the course.

Successes/Challenges encountered:

- At this point it looks like we will go with either WordPress (likely) or bBlog for blogging software. Both require PHP 4.1 or higher and MySQL 3 of sorts or higher.
- We have identified HTML/CSS features we plan to teach in the course and created series of examples to introduce these features step-by-step. We identified and installed the versions of PHP and MySQL that we will use for the course.
- While the blogging software seems to be compatible with either PHP 4 or PHP 5, it seems to be less flexible in switching between different versions of MySQL (there is a difference in password setup between different versions of MySQL and in the corresponding PHP modules. We have to decide on the setup in this respect. Matt Justin is currently studying database features used in WordPress and bBlog and at the relevant security issues.
- We had a minor issue with setting up a web-based administrator interface for the database (PHPAdmin).

Assessment/Evaluation of the project:

- The course is scheduled to be taught in the Spring 2006, no data has been collected yet.

Other Notes:

- We worked with a student (Matthew Justin) to investigate various options of the software and to create a prototype of a blog-like web site that the students will construct in the class.

VIII.a.4.2. COURSE 2

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Nic McPhee**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: _____

Number of Students Impacted by Course not implemented

Student Learning/Teaching Issue: **Dynamic Web Page Teaching Tools**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Spring Semester 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Dynamic Web Page Teaching Tools
Elena Machkasova, Nic McPhee
As web technologies have progressed, the possibilities and expectations have increased to the point where simple, static web pages constructed with HTML are no longer sufficient for many applications. Many important applications require the ability to manage significant collections of data and provide users with dynamic, customized access to information as well as the ability to add new content (like posting to a bulletin board). Students are familiar with such applications and are interested in creating their own. This interest can bring a diverse student population to a course that teaches algorithms and problem solving through development of dynamic web pages.

Our goal in this grant would be to create a set of tools we can use to teach a variety of students fundamental programming concepts and algorithm through development and maintenance of dynamic web presences. These tools would be initially used in support of a new course for non-majors that will provide an opportunity for a broad spectrum of students to learn the basics of dynamic web page creation.

Once that course is established, we would also like to explore the possibilities of bringing these ideas into earlier stages of UMM's computing curriculum (e.g.,CSci 1301 and CSci 2101).

Activities/Work completed:

Elena and I have gotten a number of necessary resources (a MySQL database, apache, php4, and phpmyadmin) up and running in the CSci lab so that our student (Matt Justin) can continue to work on developing labs. After considerable exploration and discussion, we've decided to use the idea of a blog as the key idea to built the projects around. We're using WordPress as a rough approximation of the "target" for the course project. Matt's also been able to

Successes/Challenges encountered:

- Got some tools up and running as mentioned above. Matt's made considerable success in simplifying the HTML and CSS for the blog to help construct the early labs and exercises.
- The biggest challenge for me is simply the time required to work through the many issues. We've got a nice overall structure worked out, but sorting out the details is taking quite a while.

Feedback received:

Very little beyond the conversations with Elena and Matt Justin.

Additional Assistance needed to advance work:

I could use an extra month somewhere? :-)

VIII.a.5. PROJECT 5: Using Mathematica on Teaching Calculus to Diverse Learners

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Byungik Kahng**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: MATH 1101 **- Calculus I (M/SR)**

MATH 1102 **- Calculus II (M/SR)**

Number of Students Impacted by Course seventy students

Student Learning/Teaching Issue: ***Using Mathematica on Teaching Calculus to Diverse Learners***

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Spring 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

MATH 1101 **- Calculus I (M/SR)**
(5.0 cr; Prereq-high school higher algebra, geometry, trigonometry or 1011; fall, spring, every year)
Limits and continuity; the concepts, properties, and some techniques of differentiation, antidifferentiation, and definite integration and their connection by the Fundamental Theorem. Partial differentiation. Some applications. Students learn the basics of a computer algebra system.

MATH 1102 **- Calculus II (M/SR)**
(5.0 cr; Prereq-1101; fall, spring, every year)
Techniques of integration. Further applications involving mathematical modeling and solution of simple differential equations. Taylor's Theorem. Limits of sequences. Use and theory of convergence of power series. Students use a computer algebra system.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Using Mathematica on Teaching Calculus to Diverse Learners
Byungik Kahng
The purpose of this project is to revise Mathematica notebook files that are currently being used in some calculus sections in UMM. The project has two main objectives. The first is to update the Mathematica programs so that they support recent additions to the

software, such as traditional mathematical symbols, colored graphics, animation, etc. This is long overdue, because our current notebook files did not go through significant update since they were created in 1993.

The second goal is to reorganize the notebooks so that each chapter can be taught and used independently. This will enable all calculus instructors to adopt any part of the notebook files and incorporate them in their teaching, without having to change their curricula and class schedules. The investigator believes that the latter aspect is particularly important. For past 5 years, UMM has been offering at least 13 sections of calculus courses each academic year. Therefore, the incorporation of information technology in majority of those sections, if not all, will contribute substantially to UMM's effort to enhance students learning through innovative teaching and technology.

Activities/Work completed:

I have finished Calculus I part of the project. Current students had several computer-based home-works and had one final project. After the fall semester, I plan to revise and correct the Calculus I modules and release them to other mathematics faculty members so that they can incorporate the modules in their classes.

The final project is not due yet. When I get all the projects back from the students and finish grading them, I will have better picture about the students' proficiency in Mathematica.

Calculus II modules are scheduled to be completed by the summer of 2006 so that its pilot program can start in the following fall semester.

Successes/Challenges encountered:

- The first success was the interaction with students assistants. They are learning a lot while helping me with the project.
- I am spending a bit more time of my own than expected. It turned out that some part of my project that I originally set aside for student assistants weren't suitable for students.

Feedback received:

The feed back I have so far is only between myself and students assistants, because the actual implementation did not begin yet.

Additional Assistance needed to advance work:

Just more time. In time, everythng that I set out to do will be done.

VIII.a.6. PROJECT 6: Computer Modeling of Materials in Physics

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Sylke Boyd**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: PHYS 3003 **- Computer Modeling of Materials (SCI)**

Number of Students Impacted by Course twelve students

Student Learning/Teaching Issue: **Computer Modeling of Materials in Physics**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Spring semester, 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

PHYS 3003 **- Computer Modeling of Materials (SCI)**
(4.0 cr; Prereq-1101, 1102; offered when feasible; spring)
The description of materials as assemblies of microscopic particles. The various approximations for interparticular forces and their use in order to gain insight into the behavior of the macroscopic system. Aspects of molecular dynamics simulations and Monte Carlo simulations in various statistical ensembles. Projects include questions from experimental research.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Computer Modeling of Materials in Physics
Sylke Boyd
Course, Computer-Modeling of Materials" in Spring 2006
We need to se up a software environment on our existing cluster of Macs in the Physics Lab, which has to enable students to do the following:
-visualize and manipulate structures (GopenMol)
-use existing modeling software (Gaussian, self-written programs)
-write, compile and run code (Fortran, C)

Activities/Work completed:

- Outlined detailed plan of work and forwarded it to the student participants
- The Macs in the physics lab can be used for the modeling class after all, however, have been reduced to mere terminal status. All class activities will take place on SB's Beowulf cluster, and pull X -applications over. Alternatively, a linux lab of computer science has been discussed as location for the class.
- The software interface is installed and ready to run for next semester (Spring 2006)

Scholarly approach:

- The project entailed collaboration with the computer science department, in order to get the graphical interfaces to work. The course will use a modular approach, allowing students to proceed with any module and develop it into a personal programming code. Various visualization techniques will be available.

Successes/Challenges encountered:

- Class docs for the first few weeks have been written, as well as sample programs.
- Instead of gopenmol, xmakemol will be used.
- There is still no way to use gopenmol for the class. Tcl on the cluster and the Macs does not cooperate.

Assessment/Evaluation of the project:

- Student feedback in conversation.

Feedback received:

All installations should work. Received input from division chair.

Other Notes:

The course will be taught in Spring 2006, therefore there is no feedback from students yet.

VIII.a.7. PROJECT 7: Financial Management

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Minh Vo**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: **Mgmt 4101, Investment and Portfolio Analysis**

Number of Students Impacted by Course 20 students, 7 groups

Student Learning/Teaching Issue: ***Financial Management***

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Spring 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

MGMT 4101 **- Investment and Portfolio Analysis (SS)**
(4.0 cr; Prereq-2101, 2102, 3101; spring, every year)
The institutional environment of investment, techniques used to price financial products, and how to design a portfolio of many assets.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Financial Management
Minh Vo
Objectives: The purpose of this project is to enhance teaching financial management skills through direct experience. Students will gain insights by applying several investment concepts covered in Investment and Portfolio Analysis course to building and managing a dynamic real-world portfolio over a semester. These concepts include:

1) Portfolio Balance and Diversification: Students will understand how to construct a well-diversified portfolio to minimize risk given the vagaries of the market.

2) Margin Trading: Students will understand the mechanics, risks and requirements when investors borrow money to invest.

3) Trading Orders: Students will learn the mechanics of trading in NYSE, AMEX and NASDAQ and how to use various kinds of trading orders to profit from market declines as well as market increases.

Methodology: Simulation will be done using simulators such as the Online Trading and Investment Simulator of the Wharton School of Business, the StockTrak of McGraw-Hill Publisher, or the virtualstockexchange.com. Real-world market data will be used in the simulation.
Students will form groups of 2 or 3. Each group will build and manage a $1 million portfolio during the semester. There will be an investment competition among groups

Activities/Work completed:

- Select the simulation software STOCKTRAK and incorporate it into the course
- System selection and incorporating the practical component into the course.
- The project was implemented the first time in Spring semester 2005 in the course "Investment and Portfolio Analysis" and will be incorporated into the course.

Scholarly approach:

- This project
- Within groups, students work together to manage their portfolio.
- There is a competition among groups to get 5% bonus points

Successes/Challenges encountered:

- I have learned various features of the simulation from different types of software which I will use to expand my proposed simulation
- Partly incorporated the simulation into the course as a project
- Find a way to incorporate the competition component into to the course.
- The challenge I have encountered is how to motivate everyone to be involved in the process. It seems that only 1 or 2 students got involved into the project.

Assessment/Evaluation of the project:

- The project was implemented in spring 2005 in the following context:
    - Class size: 20 students
    - Number of group: 7
    - Duration: 13 weeks
- Return of group portfolio is evaluated based on the return of the market (S&P500) in the same period.
- Each portfolio should have clear objectives and a strategy to achieve those objectives.
- The group with the best investment return got 5% bonus grade.
- Among 7 groups, 6 underperformed the S&P500 and 1 outperformed the S&P500 during the project period.
- To encourage students to be more aggressive in their investment, a negative bonus (-3%) will be given to the group with lowest return on investment.

Feedback received:

- Positive feedback from the students who took the course "Investments and Portfolio Analysis" in spring 2005 in terms of great real experience in a class-room context.

Other Notes:

- Given a period of 16 weeks, we cannot see the results of long-term investment strategies.

VIII.a.8. PROJECT 8: Horizontal Integration of Constitutional Law

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Greg Thorson**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name:

POL 3231 **- Constitutional Law: Civil Liberties and Civil Rights (HDIV)**

POL 3232 **- Constitutional Law: Governmental Powers and Constraints (SS)**

Number of Students Impacted by Course thirty eight students

Student Learning/Teaching Issue: **Horizontal Integration of Constitutional Law**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Spring Semester 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

POL 3231 **- Constitutional Law: Civil Liberties and Civil Rights (HDIV)**
(4.0 cr; Prereq-1201 or #; not offered 2006-07; spring)
Examination of major Supreme Court opinions in the areas of freedom of religion, speech, assembly, and the press. Topics include the definitions of obscenity and libel, the Court's struggle with the right to privacy, and civil rights.

POL 3232 **- Constitutional Law: Governmental Powers and Constraints (SS)**
(4.0 cr; Prereq-1201 or #; not offered 2005-06; spring)
Examination of major Supreme Court opinions in the areas of congressional, executive, and judicial authority; nation-state relations, and economic liberties. Topics include substantive vs. procedural due process, the Takings Clause, the contract clause, and the powers to tax and spend.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Horizontal Integration of Constitutional Law

Greg Thorson

My problem stems from the fact that I teach two constitutional law classes that alternate every other year. Neither course is a prerequisite for the other. Each year, roughly half of the class has previously taken the other constitutional law class, and that group enjoys a large advantage in that they have previously read and interpreted literally hundreds of Supreme Court decisions. In this project, I propose to level the playing field a bit by offering all students the opportunity to collaboratively brief cases prior to class. At this point, I am still uncertain which product I will use to facilitate this process (WebCT's Discussion Board, collaborative online writing functions available through Microsoft Word, etc.) If my proposal is accepted, I will use the Bush Foundation support to examine the available options, be trained on them, and adjust my course so as to incorporate this change. I welcome any assistance from the IT Core group in this process.

The expected benefits include both providing a forum, that rewards student cooperation in studying, as well as reducing the disadvantage that has frequently occurred by students who not taken the other constitutional law courses.

Activities/Work completed:

Working with the technical staff, I have now identified the software that will allow students to collectively write (WIKI) and installed it on UMM's web server. I am still experimenting with formats. I am planning to complete this testing during the Winter Break.

Scholarly approach:

Successes/Challenges encountered:

- I spoke with one of the student researchers today and it appears that we have some good collaborative writing tools available. He is creating a demo site so that he can show me the features. That test software has now been installed on the UMM server and I am actively experimenting with it.
- Nothing, I am progressing as I have planned.

Assessment/Evaluation of the project:

- None, as the class does not begin until Spring Semester.
- Supplemental Evaluation Form in Spring 2006.

Feedback received:

As soon as I finish my testing, I will ask students for additional feedback on the ease of use.

Additional Assistance needed to advance work:

Continued assistance from the student workers. Thanks!

2006-2007 SECOND YEAR PROJECTS

VIII.b.1 PROJECT 1: *Literacy and Language Instruction in the E.Sch,* ***Pam Solvie***

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Pam Solvie**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: ELED 3102 **Literacy and Language Instruction in the E. Sch.**

Number of Students Impacted by Course Twenty-two

Student Learning/Teaching Issue: ***Implementing Kolb's Learning Style Model in the Delivery of Education Curriculum***

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: fall, 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

From course bulletin

ELED 3102 **- Literacy and Language Instruction in the Elementary School**
(4.0 cr; Prereq-admission to elementary teacher education program; fall, every year)
Beginning and advanced reading instruction in the elementary grades. Includes study of theory, issues, literacy frameworks, assessment, materials, organization, and instructional strategies to scaffold children's literacy development.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Much was accomplished as a result of my 2005 Bush Grant project to enhance student learning, improve delivery of course content, and increase communication with and among students. Findings from the data point to changes and additions to this project that may benefit student learning. As a result of these finding I will work on the following things that will support student learning during class presentations, in follow-up after class presentations, and as a result of improved communication with students about course content.

- *Use technology to address assessment and evaluation in the course by implementing frequent and consistent checks of student work, student understanding, and student achievement. Create rubrics/checklists for all course projects. Use technology to allow students to complete self assessments and submit these electronically. Investigate and make use of the polling device within the discussion board to request feedback on student learning and use frequent checks within Breeze.*
- *Continue to use Kolb's learning style model with increased attention to learning styles in the course (discussions, reflections, information presented, explicit naming of activities and purpose). Focus attention on Kolb's Four-Stage Learning Cycle in class presentations using technology tools at each stage of this learning cycle.*
- *Improve the use of the discussion board by using higher level questions to promote higher level thinking. Make use of UM Wiki.*
- Make use of podcasting and Breeze Presenter sessions for review of course material (saving class time formerly used to review the protocol for reading and writing analysis components in the class). Create 4 Breeze Presenter sessions for projects that involve important protocol and sequence. (Investigate use of Flash within the Breeze presentations.) Use these podcast/vodcasts and Breeze sessions to assist students in preparation for assessment of course content as well as the practical application of this information in their practicum classrooms.

Activities/Work completed:

- (8/2/06)I continue to work on Breeze information and will upload this work soon, as Breeze presentations. I continue to work with Moodle for use a course management tool. I have also continued to work with iMovie and Windows Movie Maker for instructor and student presentations. I've also investigated use of concept maps for formative and summative assessment purposes.
- (7/3/06) At this point, with the help of Matt Senger, I have a SMF Discussion Board ready for use in my project course. I will set parameters for each section of my course and will prepare question prompts and a schedule. Molly and Brady have assisted me with set up of a wiki for my course. I will review the reference guides and prepare the wiki for use in class. Nic has helped me set up Moodle as a course managment tool and provided great assistance in use of this tool for my project class. I will continue to investigate the tools available and select ones for use in my course. I have been working on a script for Breeze Presenter.
- (5/31/06) I have decided to make use of David A. Kolb's Learning Style model and am organizing my course and instruction around this model. I have obtained The Kolb Learning Style Inventory (version 3.1) for use with students in ELED 3102, the course that is the focus of my project. I have completed an IRB form for research that is a part of this project. I have met with Molly, Brad, and Trent about a calendar for submission of course assignments, setting up a wiki, and creation of video clips. They have found several useful tutorials for me to review. I've also spoken with them about organization of my course webpage and we discussed how it might be organized around Kolb's themes. Trent and Brady have helped with setting up a discussion board and review of calendar tools. I have met with Nic and Pam, consultants for my project. Discussion involved discussion boards, Moodle, and Breeze Presenter. I am excited about the possibility of collecting data on who and how often the Breeze Presentations are accessed. This information will be helpful in determining how useful the tool is in supporting student learning. Tools within Moodle may prove helpful for me as well, including a calendar and an RSS Aggregator.
- (12/11/06) Students in ELED 3102 completed discussion board and wiki exercises

and had access to Breeze Presenter that included information on the reading and writing analysis project. .Students in ELED 3102 have completed a midsemester and end of semester course questionnaire. Questions pertained to use of technology tools in the course and their value in supporting learning styles and learning course content. The questionnaires and reflections on assignments that required use of technology tools are being evaluated. The data is being reviewed through the lens of Kolb's learning styles.

Scholarly approach:

I continue to read more about Kolb's learning cycle model and the four identified learning styles. I am working to more clearly link the technology tasks to these identified styles. I am also considering how I can help students use task analysis to think about the tasks involved in projects. For example, what skills might a diverger need to focus on when completing a task that is largely focused on theory and research?

Successes/Challenges encountered:

- (8/2/06) All of this work has proven successful. I am excited about the use of these tools and presentations for my fall course.
- (7/3/06) All of the work described above has been successful. I will continue to work with and add to each of these 'pieces' this month.
- (7/3/06) Some project tasks are taking a bit longer than I had envisioned. For example, creating Breeze presentations is taking some time, but I am excited about anticipated results.
- (5/31/06) All of the above tasks have been successful for me. In addition, the project planner will help me stay focused and meet my project goals.
- (5/31/06) At this point I have received a great deal of information. While all of this is great I realize it will take time to sort through it and make use of it in tangible ways.
- (10/4/06) I have successfully created, uploaded, and used a Breeze Presentation with my students. While my goal was four, I learned from creation of this first one that much time is involved in planning, scripting, and creating the presentation. It has been a wonderful tool for teaching and I hope it will serve as a wonderful resource for my students' learning as they revisit the presentation as a whole or for the individual components within the whole. I will continue to work on the other three presentations over time.
- (10/4/06) Due to the difficulties with Moodle on the server I lost my Moodle site and as it could not be retrieved I set up a new site. However I have not developed it to the point I had it at the end of the summer and therefore am not using it for my language arts students at this point. I hope to continue work and use it the next time I teach the course.

Assessment/Evaluation of the project:

- Data will be collected on students' use of technology tools. Both quantitative and qualitative data will be used to evaluate students' learning as supported through use of these technology tools.

Feedback received:

- (7/3/06) I greatly enjoyed discussing assessment with others involved in the Bush Grant projects at the recent workshop on assessment (June 20th). As a result of these discussions I came away with some great ideas about task analysis in terms of helping students understand expectations for course activities and assignments. I hope to use these ideas to support integration of learning styles in my course project.
- (5/31/06) Questions others ask about my project are prompted by their interest in the

capabilities of certain tools and how they might be applied in their work. This sharing of ideas and information is exciting.

- (10/4/06) E-mails to my consultants (Pam and Nic) even in the fall (after summer work concluded) yielded great support and useful information and direction. Most recently this support and feedback regarded use of Moodle and uploading Breeze presentations.

Feedback from the TEL Office:

1. Pam requested a number of things for her project. The TEL office has aided her in the following:

- The creation of a UMWiki
- The assessment of various calendar systems for her students
- Help with iMovie and Windows Movie Maker
- The creation of a new SMF discussion board
- Course webpage edits
- Information of the progress of the Croquet project
- Information on Moodle
- The location of video clips of children's book authors speaking and reading

2. The TEL office had little communication with the office towards the end of the summer.

Feedback from consulting group:

- Pam Solvie continues to be one of our most involved participants in not only her own project, but other Bush Grant projects as well. It is wonderful to see her try new tools and become successful with them. Pam's willingness to work with everyone and share her knowledge is a true asset to this grant and to UMM faculty, staff, and students. (Pam Gades)

VIII.b.2 PROJECT 2 : *Increasing Technology in Elementary Education with the ProScope Microscope* ***Carol Marxen***

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Carol Marxen**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: ElEd 4103 **Science in the Elementary School**

ELEd 4107 **Health and Physical Education in the Elementary School**

Number of Students Impacted by Course 30

Student Learning/Teaching Issue: **Increasing Technology in Elementary Education with the ProScope Microscope**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Fall, 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

From course bulletin
ElEd 4103 Science in the Elementary School: Standards, curriculum, and assessment of elementary school science. Includes theoretical basis of methodology and its application, assessment, selection and use of instructional media and computer software, and meeting the needs of cultural diverse and special needs students.

ElEd 4107 Health and Physical Education in the Elementary School: Scope, sequence, and related activities in elementary health and physical education

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Students who enroll in my ELED 4103 Science in the Elementary School are at varying levels of confidence and competence in science subject matter. Research verifies that the majority of preservice elementary teachers, of whom the majority are females, do not like science and are not motivated to teach it. To help students learn about science and demonstrate new ways to teach science in the elementary classroom, I would like to integrate more technology into my course. I am hoping to increase future elementary teacher's content knowledge in science, as well as to demonstrate a way in which they can motivate their elementary students in engaging science lessons.

More specifically, I want to learn how to use and effectively integrate the ProScope microscope into my ELED 4103 Science in the Elementary Classroom School course through demonstration lessons. In addition, the students will plan lessons using the ProScope microscope. The ProScope microscope displays and captures still images, movies, and time lapse movies directly to a computer for image viewing in class or in the filed.

I will create pre – and post assessments to evaluate the student's increase in subject matter knowledge, and their motivation to teach science. In addition, I will look for how they integrated technology into their elementary science unit and lessons.

Activities/Work completed:

- (7/31/06) I searched the ProScope website to find ideas for lessons. I wrote one demonstration lesson plan and am working on a second one.
- (7/5/06) I am currently working on my science syllabus for fall to evaluate where I can best integrate the demonstration lessons with the Proscope. I have also used some articles in which elementary teachers have used similar (tone) in classroom lessons.
- (6/14/06) Kristen and I met on June 8 and loaded the ProScope software on my laptop computer. We also explores some of the capabilities of the microscope.

Scholarly approach:

Successes/Challenges encountered:

- 8/28/06 The same elementary education students are in ElEd 4107 and ElEd
- I found that this is a tool that can be used in my health class as well as
- science, so I created a lesson for my health class using the ProScope microscope.
- (7/31/06) I tried the proscope out with my grandchildren, ages 11 and 14 to see if my lesson would be appropriate. First, I let them explore with the proscope--which gave me an idea of what 6-9 graders would do with it on their own. They were most interested in looking at gross body parts such as ear wax, buggers, moles, scabs, and pimples. The lesson I wrote on mealworms went fine, except they were more motivated when they were exploring on their own--very typical of this age!! The lesson will be easier to implement in a classroom.
- (7/31/06) The only challenge I have is that I have too many ideas for lesson demonstrations and not enough class time to do all of them. Although, my students may be trying some of them out in their student teaching classrooms next spring.
- (7/5/06) The challenge is to decide which lessons to use as I have too many ideas and not enough time in the (day).
- (6/14/06) We successfully loaded the software and brainstormed ideas on lessons that could be used in my science methods course.
- (6/14/06) Due to some glitches--it took us over an hour to load the software--but with Kristen's expertise and problem solving skills--we were successful. Or should I say, she was successful. I could not have accomplished it without her!!

Assessment/Evaluation of the project:

Feedback received:

Feedback from the TEL Office:

1. Carol has worked relatively independently from the TEL office, though we did have had a bit of communication with her. We located a few articles on the use of the ProScope as well as female engagement in the sciences. The progress of this project seemed to be in-line with the project planner.

Feedback from consulting group:

- Dr. Marxen and I worked together to get her started using this technology. She had planned to contact me when her students begin using the ProScope in classes, and I would be interested in hearing how that goes even if my help is not needed. This tool seemed like it would be really fun for kids, or even adults. - Carol's project required the expertise of primarily one member of the consulting group. However, we are excited about Carol's project and ready to assist in whatever way possible. Much of the project centers on the pedagogy and proper use of the ProScope rather than simply learning how to use it on a technical level. Carol has extensive knowledge and understanding of pedagogy; therefore, she needed relatively little assistance from the group. We look forward to seeing the data outcomes of the assessment process Carol is implementing.

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Nancy Carpenter**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: Chem 2301-2: Organic Chem I- II

Number of Students Impacted by Course 70

Student Learning/Teaching Issue: **Increasing Student Engagement in the Organic Chemistry Curriculum through Instructional Technology**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Until we are able to figure out funding for the purchase of the PRS systems, we cannot implement and assess this aspect of the project. Self-assessment re. the utility of other aspects (chat, smartpad) will be collected at the end of each course (fall 2006, spring 2007)

Course Description: *(Please provide the course overview that appears in course bulletins)*

2301: Introduction to the structure and reactivity of organic molecules; nomenclature and functional groups; stereochemistry; mechanisms of substitution and elimination pathways; physical organic chemistry; introduction to synthetic strategy; fundamentals of spectroscopic techniques.

2302: Continuation of topics from Chem 2301; spectroscopy; chemistry of polyenes, aromatic systems, and amines; enol and enolate chemistry; free-radical chemistry; retrosynthetic analysis; special topics.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Research on the use of personal response systems ("clickers") in lecture classes was carried out over the summer of 2006. As noted above, a date for implementation is uknown, but ideally would be spring 2007. Implementation of the use of a "smartpad" (already purchased) into Chem 2301 will take place during fall 2006. Improvement/enhancement of my use of WebCT in this course is ongoing. Finally, I would like to take advantage of UMChat as an interactive tool for use with my students (also fall-spring 06-07).

Activities/Work completed:

- (7/31/06) evaluated turning point system, helped set up and attended Greg Thorson's presentation on e-instruction PRS system
- (7/10/06)- Got the meeting set up to review clicker work by Benson and Thorson, and evaluate demo clickers - Interviewed Greg Thorson re. his work with clickers
- Have been reading info about classroom response systems
- Fall 2006: using UMChat and WebCT in 2301. About to start using smart pad.

Scholarly approach:

Successes/Challenges encountered:

- (7/31/06) evaluated turning point system, helped set up and attended Greg Thorson's presentation on e-instruction PRS system
- (7/31/06) It would have been nice if we could have had "all" (or at least several) of the PRS systems available for evaluation at the same time and place.
- (7/10/06) All of the activities describe above (in (1)) have been successful and informative
- (7/10/06) It is inconceivable to me that there has been so much work on/with clickers and so few informative OVERVIEW/SUMMATIVE articles.
- Fall 2006: funding for PRS system remains to be found.

Assessment/Evaluation of the project:

Feedback received:

- 7/31/06) n/a
- (7/10/06) n/a

Feedback from the TEL Office:

- The TEL office located a number of resources on PRS and Moodle for this project. We have also demonstrated the use of two PRS systems for Nancy. The progress of this project seemed to be in-line with the project planner.

Feedback from consulting group:

- Dr. Carpenter seemed to have things under control for this project. I would be curious to find out how easily the “smartpad” can be integrated with the PRS, and which PRS she ended up using.
- We were able to evaluate both the e-Instruction RF CPS and the Turning Point RF systems. Turning Point is not going to be an option because it is not cross—platform. We are still going to have two additional evaluation systems delivered to UMM for demo and practice: iClicker and GTO-Calcomp (InterWrite PRS). This is being arranged by Media Services and Computing Services. The barrier to purchasing a system is mainly that whatever system is chosen needs to be a campus decision. We are hoping that we can make the decision and have a system purchased by the end of Fall semester. I look forward to working with Nancy in integrating the use of UMChat and enhancing her course materials with the use of Moodle and/or WebCT. (Pam Gades).

VIII.b.4 PROJECT 4: *Student Response System,* ***Ted Pappenfus***

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Ted Pappenfus**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: Chem 1101 **– General Chemistry I (SCI-L)**

Chem 2301 **– Organic Chemistry I (SCI)**

Number of Students Impacted by Course seventy; seventy-five

Student Learning/Teaching Issue: **Student Response System**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Fall, 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

From course bulletin
CHEM 1101 **- General Chemistry I (SCI-L)**
(4.0 cr; Prereq-Math 0901 or placement beyond Math 0901 using ACT/placement exam score; fall, every year)
Scientific method, measurements, nomenclature, stoichiometry, atomic and molecular structure, chemical periodicity and properties of common elements and ions. Development of scientific reasoning and problem-solving skills. Laboratory exercise concomitant with these topics. (3 hrs lect, 3 hrs lab)

CHEM 2301 **- Organic Chemistry I (SCI)**
(4.0 cr; Prereq-1102, coreq 2311; fall, every year)
Introduction to the structure and reactivity of organic molecules; nomenclature and functional groups; stereochemistry; mechanisms of substitution and elimination pathways; physical organic chemistry; introduction to synthetic strategy; fundamentals of spectroscopic techniques. (4 hrs lect)

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

I would like to incorporate the use of personal response systems in my general chemistry course. A common complaint students have in the course is the lack of interaction between student and instructor. Adding this new technology to the course

may help to alleviate the deficiency.

Activities/Work completed:

- (8/1/06) Attended a demonstration of E-Instruction PRS system on July 10, 2006 (with Greg Thorson). Viewed a demo of TurningPoint PRS system on July 21, 2006 (with Molly Jo Kloek).

- (7/10/06) Looked at some preliminary information related to Xythos software (data managing system). Reviewed information related to personal response systems. Attended assessment workshop on 6-20-06.

- (5/31/06) Met with faculty, staff and students to draft a project plan on Tues., May 31, 2006. Present were: Nancy Carpenter, Jimmy Schryver, Kristin Lamberty, Pam Gades, and Brady Alsaker

Scholarly approach:

The approach involves collaborative efforts between faculty interested in similar/related technologies. This approach should prove effective as there is a desire for uniformity across campus. This should encourage interaction between faculty and will place less of a burden upon support staff.

Successes/Challenges encountered:

- (8/1/06)Narrowed down the PRS systems to e-instruction, interwrite and i-clicker (due to Mac/PC capabilities).
- (8/1/06Haven't been able to test the I-cliker system. It sounds like an attractive system and had hoped to have tested it by this time
- (7/10/06) Obtained preliminary information on Xythos. Actually tested a personal response system (CPS RF model...eInstruction).
- (7/10/06) Getting faculty together to meet has been a challenge as most faculty have unique schedules in the summer.
- (5/31/06) A project plan was drafted and completed.
- (5/31/06) No noteworthy challenges yet to report.

Assessment/Evaluation of the project:

Once the technology is implemented, one method of assessment will be to place the personal response systems into one of two general chemistry lecture sections. The effectiveness of the technology will be gauged by a comparison of student performance in each of the two sections. Appropriate measures will be taken by the faculty to ensure an accurate assessment of student performance.

Feedback received:

- (8/1/06) N/A
- (7/10/06) My two summer students are encouraged by our efforts to explore the use of Xythos and personal response systems in our chemistry courses.
- (5/31/06) Pam and Kristin have offered good suggestions for achieving project goals.

Feedback from the TEL Office:

The TEL office located a number of resources on PRS and Moodle for this project. We have also demonstrated the use of two PRS systems for Ted. The progress of this project seemed to be in-line with the project planner.

Feedback from consulting group:

- Dr. Pappenfus seemed to have things under control for this project. I would be curious to find out how easily the data from Xythos can be integrated with the PRS, and which PRS he ended up using.
- We are still going to have two evaluation systems delivered to UMM for demo and practice. One from iClicker, one from GTO-Calcomp (InterWrite PRS). This is being arranged by Media Services and Computing Services. The barrier to purchasing a system is mainly that whatever system is chosen needs to be a campus decision. We are hoping that we can make the decision and have a system purchased by the end of Fall semester. (Pam Gades)

VIII.b.5 PROJECT 5: *Addition of a Learning Styles Assessment to Existing Online Interactive Study Guide,* ***Jeffrey Ratliff-Crain***

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Jeffrey Ratliff-Crain**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: **Psyc 1051 & 1081 (primarily); other UMM intro.-level courses**

Number of Students Impacted by Course Psyc 1051 = 150 students; Psy 1081 = 100 per year

Student Learning/Teaching Issue: **Addition of a Learning Styles Assessment to Existing Online Interactive Study Guide**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: SSI '07 (Psyc 1081 online)

Course Description: *(Please provide the course overview that appears in course bulletins)*

From course bulletin

PSY 1051 **- Introduction to Psychology (SS)**
(4.0 cr; fall, spring, every year)
An introduction to the science of mind and behavior. Topics include history of psychology, research methods, biological bases for behavior, life span development, sensation and perception, learning, cognitive and social processes, personality, psychopathology, and applications of psychology. Includes laboratory/discussion sessions.

PSY 1081 **- Drugs and Human Behavior (SS)**
(2.0 cr; spring, every year)
Survey of psychoactive drugs, their effects on mind and behavior, and prevention and treatment of drug abuse.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

As a continuation of the work Katherine Klopfleisch and I have been doing with regard to

assisting students to develop learning skills, the inclusion of a learning styles assessment and the possibility for making our existing web-based supplement more effective is intriguing. I would like to use this opportunity to explore ways to better assess student learning needs and work to match our advice to their needs. Using technology to allow for varied means of delivering this information and advice is a logical next step.

Activities/Work completed:

- (8/1/06)Trent Wold has completed a prototype, php-run, survey page that will serve as the core interactive piece for the revised 'study tips' web page. His work this month on learning php and setting up this page has been a great help!
- (7/5/06) Have met with Nic to discuss project's goals and set a workable plan of action; * Had set time to meet with student to get project going, but needed to reschedule (will meet with tomorrow (July 6)). Student (Trent) has been learning how to do php programming for interactive web page. * In process of breaking issues covered in skills web page into factors and developing questions for students to self-test and the information that each connects to. This last will be the feedback generated to students.

Scholarly approach:

Successes/Challenges encountered:

- (8/1/06)Kudos to Trent for his work. We met a couple times this month to discuss direction, formatting, and how results may be used, but the real leg work was done by him. This is exactly the piece that was needed.
- (8/1/06)Some bumps related to getting web materials on/off the server because of the crash earlier this summer, but nothing with the project itself. Progressing nicely.
- (7/5/06) Overall, I am satisfied with the progress. I need to review last term's evaluations for modifications for next year's administrations.

Assessment/Evaluation of the project:

Feedback received:

- (8/1/06 NA
- (7/5/06) Very positive. Students enjoyed using the clickers and getting credit for their daily work.

Feedback from the TEL Office:

- We created a PHP web survey that points users to appropriate parts of the online study guide. This survey includes all the functionality requested in the last meeting and seems to be finished. The progress of this project seemed to be in-line with the project planner.

Feedback from consulting group:

- Jeff worked with one primary member of the consulting group to get his project off the ground. The goals of Jeff's project fit well with the overarching goal of the Bush grant for the UMM campus. We look forward to seeing how the php survey enhances the learning of students in the courses.

VIII.b.6 PROJECT 6 : *Creating Associative learning Tools for French and Italian Courses,* ***Tammy Berberi, Viktor Berberi***

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Tammy Berberi, Viktor Berberi**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: French language sequence Fren 1001-1002; Italian 1301-1302

Number of Students Impacted by Course Twenty-five

Student Learning/Teaching Issue: **Creating Associative Learning Tools for French and Italian Courses**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Fall, 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

From course bulletin

FREN 1001 **- Beginning French I (FL)**
(4.0 cr; fall, every year)
An introduction to oral and written French, its basic structure, and to French culture.

FREN 1002 **- Beginning French II (FL)**
(4.0 cr; Prereq-1001 or placement or #; spring, every year)
Continuation of 1001.

ITAL 1301 **- CE: Beginning Italian I (FL)**
(4.0 cr; fall, every year)
Introduction to Italian as it is presently spoken and written. Basic sounds, structures, and vocabulary of Italian. Understanding, reading, and writing the language and communicating in Italian about everyday situations. Relationship between culture and language.

ITAL 1302 **- CE: Beginning Italian II (FL)**
(4.0 cr; Prereq-1301 or placement or #; spring, every year)
Continuation of 1301

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

What does it mean to complete the FL requirement at UMM? Are we trying to help them acquire and retain culture, language, or both? In a two year requirement (which is the acknowledged standard) proficiency in both language and culture can be achieved. Yet the implied time bind of the one-year requirement puts these goals at odds with one another. Inevitably, the best intentions to cover both fields falter in the face of a vast majority of students who just want to do the bare minimum to finish. Although associative materials such as CD-ROMs are available as ancillaries to the textbook, a student who lacks motivation may never investigate materials to the extent that these become useful to him/her. Every component of a text package should engage multiple ways of learning at every stage of learning.

Research indicates that a student who arrives at college without basic foreign language skills will struggle far more to acquire them than would a younger student. Learning difficulties coupled with American Isolationist rhetoric and the enduring notion that languages are "impractical" combine to convince students that languages are a waste of time and that they "can't" learn them. Tammy and Viktor seek to develop materials that capitalize on associate learning strategies rather than the linear strategies used in a traditional print textbook. This will enable students whose low level of proficiency at this late stage in their academic career indicates a lack of interest in foreign language or learning issues. These materials will condition them to engage multiple strategies in acquiring and mastering a particular concept and move them more quickly to synthesize concepts for better retention.

Activities/Work completed:

We have worked on developing a scholarly approach as articulated in _Worlds Apart: Disability and Foreign Language Learning_, which Tammy completed this summer and has under contract with Yale UP. Tammy has given a presentation on language learning and Universal Design to some 40 faculty members at TAFS on Oct 5, 2006, and to another group at the Faculty Retreat in Aug 2006.
We have researched the WebQuest format and developed ideas for syllabi with more coherent incentive components, based on the Tour de France and Paris-Dakar races (for the French sequence), and on the Giro d'Italia (for the Italian sequence).

Scholarly approach:

Our scholarly approach is based on Universal Design for Learning with an emphasis on technology. We are preempting the implementation in higher education of NIMAS (the National Instructional Materials Accessibility Standard, currently in effect for K-12), which mandates the availability of alternate-format versions of instructional materials.

Successes/Challenges encountered:

Our great challenge was to make progress on our project in the face of significant additional, unforeseen commitments: this year, Viktor has taken on a 40% teaching overload, while Tammy is serving as the only stable faculty member in French, which will mean additional discipline duties, including serving on the French search committee. In addition, Tammy has had her book manuscript to finish over the past summer. Both Tammy and Viktor are organizing summer study-abroad sessions: July in Paris and a May session in Rome. Our schedule has forced us to revise the timeline for the completion of our project (see below).

Assessment/Evaluation of the project:

New timeline: we will finish developing materials over the 2006-07 academic year and implement and assess the materials in FREN 1001/1002 and ITAL 1301/1302 in 2007-08.

Feedback received:

None

Feedback from the TEL Office:

2. The TEL office has invested significant amounts of time in locating web resources for this project. These resources include: Croquet links, articles on Flash, links to video/audio/interactive websites, and numerous links to be used on a French WebQuest. One student worker created some examples of Flash resources.
3. They were in contact with the office for much of the summer.

Feedback from consulting group:

VIII.b.7 PROJECT 7: *Introduction to World History since 1500,* ***Bert Ahern***

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Bert Ahern**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: History 1102 **– Introduction to World History since 1500; carryover into History 3251 and 3451**

Number of Students Impacted by Course sixty to seventy in 1102; 35-40 in the other two

Student Learning/Teaching Issue: **Framing Hist 1102 Introduction to World History since 1500**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Spring, 2007

Course Description: *(Please provide the course overview that appears in course bulletins)*

From course bulletin

HIST 1102 **- Introduction to World History Since 1500 (HIST)**
(4.0 cr; spring, every year)
Methods, themes, and problems in the study of world history since 1500.

HIST 3251 **- American Indians and the United States: A History (HDIV)**
(4.0 cr; not offered 2006-07; spring, every year)
The experience of the original Americans and their interaction with later immigrants.

HIST 3451 **- Facing West (HDIV)**
(4.0 cr; not offered 2005-06; fall, every year)
History of the American West. What is the West to the United States? Examination of the meaning of the West as both place and process for U.S. history; exploring the distinctive role that the West has played in the development of the United States from 1790 to the 21st century. Special emphasis on the interplay between different peoples in the vast and varied region.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

I will be teaching Hist 1102 for the first time under semesters in spring 2007. I last taught the course in spring 1998, when it covered only 1850 to the Present and I was not yet familiar with web-based instructional opportunities. My limited use of web-based instructional technology in other courses [WebCT for threaded discussions and access to instructional resources [lecture notes, reference materials]; PowerPoint for lectures and some use of on-line resources in class presentations or as supplemental resources] makes me eager to address some opportunities that IT provides to reach the diverse needs of the students enrolled.

- Enabling interaction between me and the students both in-class perhaps through PRS and out-of-class through threaded discussions – especially important for a large-enrollment course so that I can gain a sense of how all students are learning

- Encouraging student interaction over the course material so that they can learn from each other – threaded discussions do this but also I would like to incorporate student projects that can be shared with other students and beyond the class

- Providing more frequent feedback to students of their progress – e.g,, on-line quizzes to establish understanding of lectures and course readings; study guides

- Identifying appropriate on-line resources – e.g., maps, primary sources, photos/paintings; video and audio clips – and determining how to use them whether in class sessions or for student access outside of class

- Designing a course website that is accessible and responsive to diverse learning styles

- Relevant results of this project will be available to other instructors of this course – I will be seeking advice from them as well as sharing my work with them.

Activities/Work completed:

1. Reflected further on a series of SOTL essays concerning beginning history courses and internet resources. These underscored the importance of assessment and offered some good ideas. They also will help me organize a discussion among my colleagues who share instructional responsibility for the course. 2. Met with my support team (Michelle, Karen and Kristin) to consult about accomplishments and directions for my work. 3. Participated in Assessment Workshop 4. Identified some assigned reading material for the course 5. Initial exposure to Moodle and PRS
2. 10/06 Since my last report, I have continued to explore some instructional technology features that I can incorporate in Hist. 1102 next semester.
    a. This semester I am using Moodle for both of my courses. While both of these courses are upper-division and more discussion based than is Hist 1102, they involve threaded discussion and posting of content and communications that will be relevant to my practice next semester. I find Moodle to be much more accessible for me and for the students and will definitely use it rather than WebCT Vista in the next semester.
    b. I have not moved very far on the PRS feature but still expect to use it to some extent, if it is available.
    c. A recent presentation on Universal Design Instruction to improve accessibility to learning by disabled students brought www.cast.org to my attention and I expect to make use of it.

d. In the near future, I will be consulting with Michelle Page and Kristin Lamberty about approaches to assess the value of the changes that I will be making next semester.

Scholarly approach:

Successes/Challenges encountered:

- 1. I have gained some sharper focus on the innovations on which to concentrate for this project 2. The Assessment workshop helped me clarify my assessment approach - which is to build on the Chickering and Gamson model and test for this.
- 1. The UMM website problems have slowed my exposure to Moodle but I expect to learn about it this month. 2. My slow-speed internet access from a distance has slowed my use of some of the on-line resources
- 10/06 since mid-August I have achieved some competency using Moodle and have explored some additional tools to expand my attention to diverse learning styles and situations.

Assessment/Evaluation of the project:

Feedback received:

1. Again I am an early stage of the project. The session with my support team was helpful. I have also had one open-ended discussion about the needs for the course with another instructor of the course.

Feedback from the TEL Office:

1. Based off of Bert's project's planning sheet, the TEL office located a number of resources on PRS and Moodle for Bert. 2. There was never any official communication between Bert and the TEL office, so no further work had been done on this project.

Feedback from consulting group:

- Dr. Ahern contacted Michelle and me (Kristin) with questions about using Moodle forums for threaded discussion versus using a wiki. He seemed interested in weighing the benefits and drawbacks of the different technologies. He seemed receptive to the idea of keeping in touch throughout his ongoing preparation and once the course is actually underway if any more questions should arise.
- Bert's project is complex and he is trying to take into account very important areas such as an assessment system to be incorporated into his teaching that appropriately merges with the teaching tools in use (technological and otherwise). The consulting group would be happy to meet with Bert this academic year to support his continued knowledge and growth about Moodle and other potential tools that he will use in the spring offering of the course. We have confidence that despite some obstacles that have slowed the project overall (discussed above), Bert will be able to significantly rework several courses as a result of this project.
- On Wednesday, May 31, Michelle Page, Kristin Lamberty, and I met with Bert

Ahern about his Bush Grant project for 2005-2006. Bert talked with us about possibly including online journals, quizzes, and threaded discussion in his project, and at that time was leaning toward the use of Moodle as a content management system. We also discussed having a balance of online materials (maps, other audio and visual resources to address multiple learning styles), as well as using personal response systems in the classroom. Bert participated in the Assessment Workshop offered by the Consulting Group on June 20, 2006. ~ Karen C.

VIII.b.8 PROJECT 8: *Developing Mathematica modules for UMM Calculus Courses,* ***Byungik Kahng***

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Byungik Kahng**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: Math 1101 **- Calculus I (M/SR)**

Math 1102 **- Calculus II (M/SR)**

Math 1021 **- Survey of Calculus (M/SR)**

Number of Students Impacted by Course 150, 50, 10, respectively each year (estimated).

Student Learning/Teaching Issue: **Developing Mathematica modules for UMM Calculus Courses**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: **Spring 2006 (for Math 1101 only).**

Course Description: *(Please provide the course overview that appears in course bulletins)*

From course bulletin

MATH 1101 **- Calculus I (M/SR)**
(5.0 cr; Prereq-high school higher algebra, geometry, trigonometry or 1011; fall, spring, every year)
Limits and continuity; the concepts, properties, and some techniques of differentiation, antidifferentiation, and definite integration and their connection by the Fundamental Theorem. Partial differentiation. Some applications. Students learn the basics of a computer algebra system.

MATH 1102 **- Calculus II (M/SR)**
(5.0 cr; Prereq-1101; fall, spring, every year)
Techniques of integration. Further applications involving mathematical modeling and solution of simple differential equations. Taylor's Theorem. Limits of sequences. Use and

theory of convergence of power series. Students use a computer algebra system.

MATH 1021 **- Survey of Calculus (M/SR)**
(4.0 cr; Prereq-high school higher algebra, geometry or 1011; fall, every year)
Short course for students in social sciences, biological sciences, and other areas requiring a minimal amount of calculus. Topics include basic concepts of functions, derivatives and integrals, exponential and logarithmic functions, maxima and minima, partial derivatives; applications

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

The title of my project is "Developing *Mathematica* modules for UMM Calculus courses". This project is a continuation from the Bush-TEL project that I engaged in 2005-2006 academic year, with the generous support from Bush foundation and UM-TEL. The preliminary versions of Calculus I modules were finished before the beginning of fall 2005 semester and I was able to run the first pilot program in the fall 2005 semester. Although there are still some more revisions to be done during the winter of 2005 – 2006, most of the primary goals of this project had been successfully met. Through computer modeling and visualization, I was able to satisfy the students with diverse learning styles in the same class. Mathematics, traditionally, is not known as a subject with realistic applications. The computer modules helped the students to deal with more realistic applications than any problems and projects in textbooks. *Mathematica* is very difficult software to learn, because it requires a good deal of both computer programming and mathematics. Not all the students achieved the desired level that they can start using and learning *Mathematica* on their own. It will take one more semester (Calculus II) even for talented students, and still more (Calculus III as well) for majority of the students. This, among others, necessitates the continuation of this project.

I am scheduled to teach Calculus I again in the spring of 2006. This will be a good opportunity to incorporate the revised, stable versions of the modules. Also, being scheduled to teach Calculus II in the fall of 2007, I am in an ideal position to continue this project and create Calculus II modules over the summer of 2007. With the support from Bush foundation, I hope I can duplicate the success of my Calculus I modules in Calculus II project, too. My Calculus I project is being funded by UM-TEL, too, but it is difficult to tell if I could get their support for Calculus II project as well. (The call for the proposals did not come out yet.) At this moment, therefore, I am counting only on Bush foundation for the continuation of my project. The Calculus III project will be far bigger than the previous two combined, and I plan to apply for an external grant (such as NSF CCLI). Hopefully, I could get enough intermediate results from my Calculus I and Calculus II projects, which will enable me to apply for the external grant

Activities/Work completed:

- (8/9/06)The first two chapters of Calculus II notebooks (out of 4) are completed. Calculus
  notebooks are constantly being revised.

Scholarly approach:

Successes/Challenges encountered:

- (8/9/06)The biggest success I had was to give students realistic and challenging projects
- that requires substantial amount of time outside class. Too many students were
- settling with lower grade not spending enough time outside class before.

- (8/9/06)Undergraduate teaching assistants had trouble helping and leading the students. Also, a lot of students did not utilize the TA's and claimed they were not aware, even though I announced it very often (almost weekly) in class.

Assessment/Evaluation of the project:

Feedback received:

- (8/9/06)More than one colleagues are either using some of my modules or planning to use them in their classes.

Feedback from the TEL Office:

1. Byungik was neither in contact with the office in any way (email, reflection logs, or otherwise), nor did he ask for any help with his project from the office.

Feedback from consulting group:

We met as a consultative group (Karen, Nic, and I) with Byungik on May 31st to discuss his project plans and the progress of his project. We asked Byungik to explain the work he was undertaking this year as it related to the work of the past year. He demonstrated how the modules work. We asked Byungik to consider how he might assess the effectiveness of his work using the new Mathematica modules in terms of student learning. Suggestions were given as to questions he might consider asking on the survey he planned to give students. He indicated he wanted more useful data than had been collected the previous year. A rubric was also suggested for use in assessing student progress on the Mathematica project. Byungik was encouraged to share his work with other professors in the math department for purposes of informing, collaborating, and receiving feedback.

VIII.b.9 PROJECT 9: *Art History Image Library,* ***Jimmy Schryver***

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Jimmy Schryver**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: **All of the courses in the Art History discipline will be effected**

Number of Students Impacted by Course 1000 –level: 50 students 3000-level:15 students

Student Learning/Teaching Issue: **Art History Image Library**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Fall 2007

Course Description: *(Please provide the course overview that appears in course bulletins)*

From course bulletin

ARTH 1101 **- Principles of Art (FA)**
(4.0 cr; fall, spring, every year)
An introduction to the theories, methods, and vocabulary of art history. Involves development of basic skills of research and of analysis and interpretation of individual works of art. Helps the student to understand the intrinsic as well as the historical-cultural meanings of works of art.

ARTH 1111 **- Ancient to Medieval Art (FA)**
(4.0 cr; fall)
Origins of art in the Paleolithic period; survey of monuments of ancient Mesopotamia, Egypt, Greece, and Rome as well as the Early Christian, Romanesque, and Gothic styles of western Europe. Also treatment of non-western traditions in ancient and medieval periods.

ARTH 1121 **- Renaissance to Modern Art (FA)**
(4.0 cr; spring, every year)
Survey of the major works of art of western Europe from 1400 to the present.

ARTH 3101 **- Art and Archaeology of Ancient Greece (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2006-07; fall, spring)

Beginning with the Bronze Age civilization of the Aegean, Minoan, Cycladic, and Mycenaean, this course follows the development of painting, sculpture, and architecture of ancient Greece, concentrating on the classical period in Athens and the Hellenistic period in the Mediterranean.

ARTH 3111 **- Art and Archaeology of Ancient Rome (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2006-07; spring, odd years)
The Etruscan civilization in central Italy originating in the 7th century B.C.E. initiates the study of the development of Roman painting, sculpture, and architecture with concentration on the Imperial period of ancient Rome to the 4th century C.E.

ARTH 3112 **- Art and the Byzantine Empire (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; offered every other yr; fall, even years)
A chronological and socio-political exploration of the development of art within the Byzantine Empire. The various roles that this art took within and beyond the borders of Byzantium.

ARTH 3113 **- Islamic Art and Culture (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; offered every other yr; spring, odd years)
An investigation of Islamic art and architecture in both the secular and religious realm. Examination of these works in the context of the cultures and historical periods that produced them. Begins with the birth of Islamic art and continues up until today.
Effective: Spring 2007

ARTH 3121 **- Medieval Italian Art (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2006-07; spring, even years)
Painting, sculpture, and architecture of central Italy, notably Tuscany, from the 12th to 14th centuries, with attention to the influence of the mendicant monastic orders of the Franciscans and the Dominicans on the art of the period.

ARTH 3131 **- Northern Renaissance Art (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; offered when feasible; fall, spring)
Painting, sculpture, and architecture of France, Belgium, the Netherlands, and Germany during the late 14th century to the mid-16th century, tracing the development of oil painting and interpreting the significant imagery of the period.

ARTH 3142 **- Art of the Italian Renaissance, 1300-1520 (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2005-06; spring, odd years)
A variety of methods (including stylistic, gender, and contextual theories) are used to explore the painting and sculpture of such artists as Giotto, Donatello, Leonardo, Raphael, and Michelangelo.

ARTH 3161 **- 16th-Century European Art (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2006-07; fall, odd years)

A study of art during a period of cultural upheaval and radical change in Italy and northern Europe from 1520 to 1590.

ARTH 3171 **- Baroque Art (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2006-07; spring, even years)
A sociohistorical consideration of the stylistic and thematic diversity present in the works of such 17th-century masters as Caravaggio, Bernini, Velazquez, Rembrandt, and Vermeer.

ARTH 3181 **- Rococo to Revolution (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; offered when feasible; fall, spring)
An examination of the visual arts in relation to social and historical developments in 18th-century Europe, such as the Enlightenment, the French Revolution, archaeological discoveries, the Grand Tour, and the rise of art criticism.

ARTH 3191 **- American Art to 1900 (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2006-07; fall, odd years)
A thematic exploration of the role of painting, sculpture, and the decorative arts in American society, from colonial times to 1900. Topics include the landscape and Manifest Destiny, American icons, folk art, and the representation of Native Americans, African Americans, and women.

ARTH 3201 **- 19th-Century European Art through Post-Impressionism (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2006-07; fall, odd years)
Survey of major movements from Neoclassicism through Romanticism, Realism, and Impressionism to Post-Impressionism. Attention is given to iconographical and formal analysis as well as to the social conditions in which artists lived and worked.

ARTH 3211 **- Early Modernist Art: Symbolism to Surrealism (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2006-07; spring, even years)
Survey of the major early modernist movements from Symbolism through Cubism, Futurism, Expressionism, Constructivism, De Stijl, and the Bauhaus to Surrealism. Attention is given to theories of modern art as well as to formal and iconographical analyses and to the social conditions in which modern art was created and experienced.

ARTH 3221 **- 20th-Century Art: 1945 to the Present (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2005-06; fall, even years)
An examination of selected artists and movements from the 1940s through the present. Equal emphasis is given to the art and the social context in which it was made and experienced, and to modernist and postmodernist aesthetic and critical thought.

ARTH 3231 **- History of Photography (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2006-07; spring, even years)
Survey of European and American photography from the period of invention to the

present. Major artists and movements are examined in the context of a variety of aesthetic, social, and technical issues.

ARTH 3241 **- African American Art (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2005-06; spring, odd years)
Survey of African American art from colonial times to the present, focusing on social context and aesthetic and biographical issues.

ARTH 3261 **- Chinese Art (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2005-06; fall, even years)
Survey of Chinese arts from the Neolithic times to the 20th century, presented in the context of Chinese culture.

ARTH 3281 **- Women and Art (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; not offered 2005-06; fall, even years)
A historical survey of women's roles as creators and patrons of the visual arts in Western European and American societies, from antiquity to the present.

ARTH 3291 **- Facing the Past: Portraiture and Social History (FA)**
(4.0 cr; Prereq-any 1xxx ArtH course or jr status or #; fall, spring)
This seminar examines functions and formats of portraits created primarily in Western Europe between 1400-1800, in order to gain greater insight as to how various social identities (such as that of husband and wife, child, friend, and freak of nature) were visually constructed and verbally interpreted.

ARTH 3311 **- CE: Italian Renaissance and Baroque Art in Context**
(1.0 cr; spring)
An opportunity to view and interpret art of the Renaissance and Baroque periods (c. 1400-1700) in its original contexts in Italy and to better comprehend how powerfully art can affect a viewer.

ARTH 3993 **- Directed Study**
(1.0 - 5.0 cr [max 10.0 cr]; Prereq-any 1xxx ArtH class or jr status, approved directed study form; fall, spring, every year)
Content and nature of the course to be determined by faculty and student consultation. May include individual research and writing, working in relation to the Art Gallery program, or travel and study.

ARTH 4901 **- Capstone Assessment of Student Experience in Art History**
(1.0 cr; Prereq-ArtH major, #; S-N or Aud, fall, spring, every year)
Allows students majoring in art history to reflect on the connections among the different courses and experiences they have had in the discipline by compiling a portfolio of their work, writing a short paper, and discussing their experiences with the faculty and other majors.

ARTH 4993 **- Directed Study**
(1.0 - 5.0 cr [max 10.0 cr]; Prereq-any 1xxx ArtH class or jr status, approved directed study form; fall, spring, every year)

Content and nature of the course to be determined by faculty and student consultation. May include individual research and writing, working in relation to the Art Gallery program, or travel and study.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

Art history necessarily addresses visual and verbal learning styles. In fact, one of the major skills we teach is to link the visual to the verbal. To do so, and indeed to teach art history at all, we must have an up-to-date and extensive image library so that students can see a rich variety of art and related images (such as photographs showing art in context, maps, portraits of artists, pictures of unusual art materials, photographs of locations artists have painted, etc.). The art history discipline has an extensive slide library for these purposes, but shifts in the photography industry are mandating that we change to a digital image database. We are applying for the Bush grant to fund the creation of such a database. The first step in this process will be the scanning of the images to be stored within from books and from the current slide collection. Our goal is to create a database that can be used by faculty and students in class, and used by students outside of class for various projects. In the end, such a database will be much more versatile and cost-effective than slides, allowing students to access images independently for study and research, something they cannot now do easily with the slide library.

Activities/Work completed:

- (12/6/06) I have ordered PRS units for my Spring '06 class and will be implementing this technology on a trial basis throughout the semester.
- (8/7/06) We have now compiled a list of the other schools using MDID in order to look at their approach to its use and to make sure there are no other problems waiting for us that we have not yet encountered.
- 7/20/06) We have set up the local test server and have made a dry run through the steps of loading pictures and associated metadata. This has allowed us to identify and address problem areas.
- 5/31/06) Things have gotten off to a running start. We have downloaded the MDID demo and had a run through it with the students to assess some preliminary issues that might become challenges. I compiled these and gave them to the UMMtel group as a word doc. This will function as a runnning list of issues to tackle. Otherwise, I provided the group with a list of fields that we will need to isolate or program into the database. I also drew up a list of file types and scanning instructions for the group. I handed over a nuber of CD Roms with about 300 images to the students for loading into the database. I attended a meeting of the clicker group to explore this possibility. I attended a group meeting with my core group to assess progress at this stage and brainstorm ideas for the next stages of the project. We were able to identify and solve problems associated with the loading of images and the attachment of metadata to these images in the database. This in turn has helped us to refine our scanning

procedure.

Scholarly approach:

Successes/Challenges encountered:

- (10/6/06) We have now run into the challenge that although the database is ready to receive images, this can currently only be done at the expense of other essential duties that our work-study student is engaged in. This is due to the amount of information that we want to add to each entry in the database and the need to check both image quality and information accuracy in terms of things such as dates (which we can enter only as numbers and then must edit to add BC or AD, for example). Barring the receipt of funds dedicated to image importation, this now looks as though it will be a longer process than we had originally envisioned.
- (8/7/06) The database is ready to receive images and the list of other users has proven quite helpful.
- (7/20)06)We were able to identify and solve problems associated with the loading of images and the attachment of metadata to these images in the database. This in turn has helped us to refine our scanning procedure.
- (7/20/06)Luckily, the problems that we encountered with the association of metadata to image within the database were easily solved.
- (5/3/06) We are just about to get the test version of MDID up and running. I have gotten jabber enabled on the computer in my office, which has allowed high speed, real time exchanges with the UMMtel group concerning project needs and questions. My core group meeting was very helpful regarding ideas for assessment and ways that I might try to integrate the database more into classroom and homework assignments. This meeting was also very helpful regarding the ways in which we might allow student access to the database while keeping it "private" to the UMM community.
- (5/31/06) So far, we have met and overcome all of the challenges encountered.

Assessment/Evaluation of the project:

- This will prove difficult at first because the process involved in importing and testing the images for quality can currently only be accomplished at the expense of the other tasks assigned to our work-study student at present. However, once a critical mass of images has been imported and are available to students, we intend to integrate evaluation into our course evaluation processes.

Feedback received:

- (8/7/06) I have found that a number of other institutions have similar approaches to the use of the MDID database.
- (7/20/06)Pending

Feedback from the TEL Office:

4. We created a test installation of MDID on a temporary server and provided resources for the management of this server. The TEL office looked into a permanent place for MDID with computing services and created instructions for adding images to the database. With the exception of the permanence of the MDID server, the progress of this progress seemed to be in-line with the project planner.
5. He was in contact with the office for most of the beginning of summer.

Feedback from consulting group:

- The consultative group (Pam, Nic, and Karen) met with Jimmy on May 30th to discuss his project plans and offer assistance. Trent was also present to discuss work on the database.

  The software (Mdid) used to create the database for Art History slides and Content DM for images and archival purposes were discussed. Use of Excel spreadsheets for batch loading images and uploading to the file folder as well as Graphic Converter (for the Mac) for converting graphics to other forms and sizes were also discussed.

  In addition to discussing how images could be saved, stored, and retrieved by students for the course, we also considered tools for assessing student learning as a result of using the digital images. Jimmy was encouraged to think about success of the project as more than just use of the images by professors and students, and move to some form of data collection that would document student learning. Benefits of using rubrics and surveys to assess student learning were discussed.

  Jimmy also indicated interest in exploring use of clickers sometime in the future for the purposes of engaging students in the learning process.

VIII.b.10 PROJECT 10: *Student Response System,* ***Greg Thorson***

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Greg Thorson**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM

Course Name: **Pol 4221 - Judicial Politics (SS)**

Pol 1201 - American Government and Politics (E/CR)

Pol 3232 Constitutional Law: Governmental Powers and Constraints (SS)

Number of Students Impacted by Course Seventeen, fifty-five, thirty-five

Student Learning/Teaching Issue: **Student Response System**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: Fall, 2006

Course Description: *(Please provide the course overview that appears in course bulletins)*

From course bulletin

POL 4221 **- Judicial Politics (SS)**
(4.0 cr; Prereq-1201 or #; Stat 1601 or Stat 2601 recommended; not offered 2006-07; fall, every year)
Role of judges, police, attorneys, and interest groups within the political system, with analysis focusing on each as political actors. Areas of discretion in the legal system. Extra-legal predictors of judicial decision making and certiorari voting.

POL 1201 **- American Government and Politics (E/CR)**
(4.0 cr; fall, spring, every year)
Analysis of principles, organization, procedures, and powers of government in the United States. The federal system, national constitution, civil and political rights, party system; nature, structure, powers, and procedures of legislative, executive, and judicial departments of the national government.

POL 3232 **- Constitutional Law: Governmental Powers and Constraints (SS)**

(4.0 cr; Prereq-1201 or #; not offered 2005-06; spring)
Examination of major Supreme Court opinions in the areas of congressional, executive, and judicial authority; nation-state relations, and economic liberties. Topics include substantive vs. procedural due process, the Takings Clause, the contract clause, and the powers to tax and spend.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

I would like to work on integrating student response systems into my classes. I will need training on the use of such devices, as well as assistance in developing policies regarding their use.

The device that I intend to use can be found at:
http://www.einstruction.com/

The use of student response system has the potential to reward students for daily effort rather than through exams. This can be a significant benefit to students who suffer for test anxiety. It will also serve to reward students who have difficulty speaking in class but nevertheless prepare daily for class.

The use of student response systems can also be helpful for the instructor. By administering frequent quizzes, the instructor has a better sense of student's understanding of material. Rather than simply relying on feedback from the most vocal students, the instructor will get timely feedback from students of all learning styles. The instructor can then respond to this feedback appropriately, either by reviewing the difficult material or moving on to a new topic.

Activities/Work completed:

- (7/25/06)Evaluated previous use of system. Conducted talk on its use.
- (7/5/06) I attended the Assessment workshop put on by the grant. I also downloaded and worked with the new version of the CPS software.
- (5/26/06) I have completed my first semester's use of SRS in the classroom. I have also researched a bit some of the improved technology that is available through eInstruction next year.

Scholarly approach:

Successes/Challenges encountered:

- (7/25/06)Stronger awareness of previous work.
- (7/25/06)Some difficult setting up new classes.
- (7/5/06) Overall, I am satisfied with the progress. I need to review last term's evaluations for modifications for next year's administrations.
- (7/5/06) None yet.
- (5/26/06) Although I have just "eyeballed" the assessment result, they appear very positive.
- (5/26/06) I need to expand the use of the SRS beyond simply the initial testing of students for attendance and pop quizzes.

Assessment/Evaluation of the project:

Feedback received:

- (7/25/06) Very positive
- (7/5/06) Very positive. Students enjoyed using the clickers and getting credit for their daily work.
- (5/26/06) That SRSs reward students who do daily work and show up for class. Students like the reward.

Feedback from the TEL Office:

6. The TEL office, working off of Greg's project planner, found a number of resources on PRS. The office also gave Greg a demo on a different PRS.
7. The progress of his project seemed to be in-line with the project planner.
8. He was in contact with the office for much of the summer.

Feedback from consulting group:

- Dr. Thorson seemed to have a grasp on how to use PRS by the time consulting began. He seemed to have concerns about which model would be best for students (which pricing/use model), and I wondered if he had any information about that he would like to share with others on campus. The talk he gave was extremely helpful in getting other faculty thinking about this technology and how it relates to the different learning styles of our students or ways to assess student understanding.
- Greg has been a leader at UMM in the use of student response systems. He has been a very willing presenter on SRS and has shared informational resources with everyone involved in the Bush Grant. I would like to see how Greg used materials researched by the TEL student consultants and whether any of those resources helped him regarding classroom policies and usage of the SRS . (Pam Gades)

University of Minnesota
Bush Foundation Grant
Research Project Profiles

Faculty Member or Instructor: **Pam Gades, Karen Cusey**

Number of people involved in course redesign team (e.g., teaching, specialists, Graduate TAs, Undergrad TAs, technical support undergrads, Educational, Technology consultants) 4 students, 3 faculty, 2 professional staff (ITConsulting Group)

Campus: UMM (online course)

Course Name: Innovative Teaching with Technology (new prototype course for faculty)

Number of Students Impacted by Course no min. or max. enrollment

Student Learning/Teaching Issue: **COURSE PROTOTYPE**

If assessment of student learning or evaluation data was not collected this year, please indicate when this will occur: spring 2007

Course Description: *(Please provide the course overview that appears in course bulletins)*

Innovative Teaching with Technology is a new non-credit course with information about a variety of tools that can be used to promote elements of the Seven Principles of Effective Learning.

Description of Research Project: *(Include specifics about your project such as your goals and objectives, the implementation timeline, etc.)*

We will use the UMWiki as the course container and integrate many tools and examples -- closely tied to the seven principles of effective learning. Research appropriate readings to go along with the 7 principles. Pay attention to the technology adaptation paper regarding the 7 principles. Find also, research about the effect on student learning using various tools such as discussion boards, PRS (clickers) chat, blog, wiki, etc.

Activities/Work completed:

(10/2/06) Ideas for implementing the seven principles of effective learning through the use of technology for innovative teaching have been created by Pam Gades and Karen Cusey with much help from the student consultants, Molly, Brady, and Trent. Examples include a generic name for each tool suggested (email, discussion, etc.), advantages and applications for each tool, and specific brand name tools available at UMM (Webmail, WebCT Vista mail, Moodle Mail, Thunderbird mail).

The current version of this project can be found at:
https://wiki.umn.edu/twiki/bin/view/InnovativeTeaching/WebHome

Scholarly approach:

Researching relevant journal articles and online resources. Investigating what technologies are being used at other Universities to support innovative teaching and student engagement.

Successes/Challenges encountered:

Successes: A success while working with this project, was being able to find an abundance of easy to find relevant materials online. Another success would be the participation of the Bush Grant student consultants in helping to find resources and integrate information about those tools into the course wiki.
Challenges: Some tools identified would require user training and more development or customization. It is difficult due to time and personnel constraints. Some tools that could be utilized are not currently being supported at UMM.

Assessment/Evaluation of the project:

- Planned pre- and post-assessments will be included to evaluate faculty awareness of possible applications/tools for innovative use of technology in teaching.
- Pre-assessment will be self-paced as participants begin the course in late fall 2006.
- Post-assessment will also be self-paced, upon partipants' completion of the course.

Feedback received:

We will begin soliciting feedback in Spring 2007.

IX. CONCLUSION AND NEXT STAGE

The interest from the UMM faculty, staff, administrators, and students on the grant activities were very high. Based on the evaluation of the administration of the grant during the first and second year, ITCORE group decided to modify the application process for the third year. The objective of this modification is to get more detailed information on the proposed projects. Below is the details for the third year:

- The Statement of Interest will be sent on December 19, 2005 by hard copy, e-mail and posted on the web site.
- The Bush IT Core Group will evaluate received Statements of Interest on January 6, 2007.
- Interviews to obtain details about projects will take place after January 6, 2006 with detailed project proposals due January 27.
- First week of February 2006 – Bush IT Core Group will select the projects.

During the third year of the grant implementation focus will be on content delivery component of the teaching/learning process. To achieve sustainability of project efforts instructional support system that is created within grant will be institutionalized. IccIT, Inter-campus Communications on Innovative Teaching will be continued with enhancements, and grant findings will be presented to the rest of the UMM faculty during the 2007 Fall Faculty Retreat as it has been done during the 2006 Fall Faculty Retreat. Through the campus governance structure findings of the grant will be disseminated and required changes and funding will be sought.

Other detailed changes that will be implemented during the third year are:

- The new group of participants will be encouraged and supported to apply UMM Morris Academic Intern (MAP) program and UMN TEL Small Grants to increase impact of their project.
- A mechanism that is developed by the ITCore group will be implemented to provide constant and continuous flow of work for the student and faculty/staff consultants.
- ITCore group will develop templates and resources that has an successful potential for the projects.

APPENDICES

Year 1 (2005-2006)

- Bush Grant Participants
- November 1, 2005 Event, *"Inter-Campus Conversations on Innovative Teaching"*,
  - Announcement
  - Attendance
  - Content
- July 7, 2005 Event, "*Engaging Students with Multiple Learning Styles Using Technology Tools",*
  - Announcement
  - Attendance
  - Content
- Training Course,
  - Announcement
  - Attendance
  - Content
- Social Event
- Innovative Teaching Consulting Center Status Report (August, 2005)
- Update Report (June, 2005)
- Grant Innovative Teaching & SharePoint Websites
- Innovative Teaching Consulting Center
- Interaction Communication Matrix

Year 2 (2006-2007)

- Bush Grant Participants
- November 7, 2006 Event, *"Inter-Campus Conversations on Innovative Teaching"*,
  - Announcement
  - Attendance
  - Content
- August 21-22 Fall Faculty Retreat, "*Enhancing our Academic Environment",*
  - Announcement
  - Content
  - Attendance
- Training Course, "Assessment Workshop, June 20, 2006
  - Announcement
  - Content
  - Attendance
- Projects Meeting, May 16, 2006
  - Content

    - Attendance
- Social Event, May 3, 2006
- April 4, 2006 Event, *"Inter-Campus Conversations on Innovative Teaching"*,
    - Announcement
    - Content
    - Attendance
- Update Report (Summer, 2006)

ENHANCING STUDENT LEARNING THROUGH INNOVATIVE TEACHING AND TECHNOLOGY STRATEGIES: ENGAGING STUDENTS BY TEACHING TO MULTIPLE LEARNING STYLES

BUSH GRANT PARTICIPANT(2005-2006)

ITCORE GROUP

YEAR 1	**YEAR 2**
Engin Sungur, Campus Coordinator, Professor of Statistics, Director of Faculty Center for Learning and Teaching	Engin Sungur, Campus Coordinator, Professor of Statistics, Director of Faculty Center for Learning and Teaching
Katherine Benson, Associate Professor of Psychology, Chair of UMM Assessment of Student Learning Committee	Katherine Benson, Associate Professor of Psychology, Chair of UMM Assessment of Student Learning Committee
Paul Myers, Associate Professor of Biology	Paul Myers, Associate Professor of Biology
Pam Gades, Instructional Technology Specialist, Computing Services	Pam Gades, Instructional Technology Specialist, Computing Services
Karen Johnson, GenEdWeb Program Coordinator	Karen Cusey, GenEdWeb Program Coordinator
Scott Esler, Student, Project Manager	Pam Solvie, Assistant Professor of Elementary Education
	Roger Boleman, Director of Media services
	Molly Kloek, Student, Project Manager

CONSULTING GROUP

Scott Esler, Student, Project Manager
Pam Gades, Instructional Technology Specialist, Computing Services
Karen Johnson, GenEdWeb Program Coordinator
Tom Johnson, Associate Professor of Psychology
Pam Solvie, Assistant Professor of Elementary Education
Greg Thorson, Associate Professor of Political Science

PROJECT PARTICIPANTS

Tammy Berberi, Assistant Professor of French
Viktor Berberi, Assistant Professor of Italian
Sylke Boyd, Assistant Professor of Physics
Becca Gercken-Hawkins, Assistant Professor of English
Byungik Kahng, Assistant Professor of Mathematics
Elena Machkosova, Assistant Professor of Computing Sciences
Nic McPhee, Associate Professor of Computing Sciences
Gretchen Minton, Assistant Professor of English
Janet Schrunk Ericksen, Assistant Professor of English
Pam Solvie, Assistant Professor of Elementary Education
Greg Thorson, Associate Professor of Political Science
Minh Vo, Assistant Professor of Economics and Management
Min Zhou, Assistant Professsor of German

NOTE: *Instead of five, eight projects have been supported.*

STUDENTS

Scott Esler, Project Manager
Matt Harren
Molly Kloek
Aaron Vasecka

ADMINISTRATION

Engin Sungur, Campus Coordinator, Director of Faculty Center for Learning and Teaching
Linda Pederson, Faculty Center for Learnng and Teaching, Secretarial Support

BUSH FOUNDATION GRANT YEAR 1

Inter-Campus Conversations on Innovative Teaching

November 1, 2005

11:30-13:00
Crookston, Duluth, Morris, Minneapolis

Duluth Campus
KPlz 173

Morris Campus
Oyate Room
Student Center

Crookston Campus
125 Dowell Hall

TC Campus
405 Walter Library
East Bank

These conversations on innovative teaching aim to enhance and promote collaboration among the University of Minnesota campuses. They will provide an opportunity for the various campuses working on the Bush Foundation Grant to share their experiences focusing on innovative teaching with technology.

We will use Breeze LIVE[1] to present this event from the Morris Campus. The link for this event is: https://breeze.umn.edu/cgi-bin/auth.pl?url-path=r23587616.

Schedule

11:30 - 11:35	***Introduction, Logistics of the Event***, Engin Sungur, Director of Faculty Center for Learning and Teaching, UMM
11:35 - 11:45	***Bush Foundation Grant: Innovative Teaching and Technology strategies to Enhance Student Learning***, Linda Jorn, Director of Digital Media Center, UMN
11:45 - 11:50	***Introduction of Presenters***, Pamela Gades, Instructional Technology Specialist, Computing Services, UMM
11:50 - 12:00	***Worlds Apart: Disability and Foreign Language Study***, Tammy Berberi, Assistant Professor of French and grant participant, UMM
12:00 - 12:10	***Biology of Plant Food Systems and the Environment***, Kevin Smith, Associate Professor of Agronomy and Plant Genetics and grant participant, UMTC
12:10 - 12:20	***Learning Style Awareness and the Reflective Process for Improving Large-Enrollment Classes***, James Allert, Assistant Professor of Computer Science and grant participant, UMD
12:20 - 12:30	***Promoting High Quality Collaborative Learning***, Marilyn Grave, Associate Professor of Early Childhood Education and grant coordinator, UMC
12:30 - 1:00	Lunch with slideshow presentation

[1] **Connecting to a Breeze Live Meeting**
Breeze Live is a Web conferencing tool that facilitates online collaborations by sharing graphics, PowerPoint presentations, live audio and video, and interactions using text chat, whiteboard, and polling.

To participate in a Breeze Live meeting, you will need an Internet browser enabled with the Macromedia Flash Player 6 or later. To confirm that your computer is ready to connect to a Breeze Live meeting, please visit the following test page: http://breeze4.umn.edu/common/intro/intro.html

If you experience any difficulties with this test please contact Breeze Support at breeze@umn.edu.

This Breeze Live meeting will include live audio and video. You will need headphones or speakers to listen to the broadcasted audio. Questions from Breeze Live participants during the meeting will be taken through text chat. Presenters in the meeting will then verbally respond to participant questions.

Technical assistance will be available through text chat if you experience difficulties once you are in the Breeze Live meeting. If you cannot access the Breeze Live meeting, technical assistance will be available by sending an email to Breeze Support at breeze@umn.edu.

ORGANIZERS: Roger Boleman, Lance Cunningham, Pamela Gades, Kellie Greaves, Marilyn Grave, Hope Johnson, Linda Jorn, David Loewi, Andy Lopez, Engin Sungur, Bilin Tsai, Dave Wehner

November 1, 2005
11:30-13:00
Crookston, Duluth, Morris, Minneapolis

Attendance: 17 connections were made to the Breeze Live session. Some of these were individual people and the others were the 'group' locations at each campus. Below is the list of participants from UMM. (40 onsite at Morris, 6 onsite at Twin Cities, 5 onsite at Duluth)

Morris Campus

1. Sylke Boyd
2. Karen Cusey
3. Paul Myers
4. Pam Gades
5. Tom Johnson
6. Elena Machkasova
7. Tammy Berberi
8. Engin Sungur
9. Janet Ericksen
10. Greg Thorson
11. Katherine Benson
12. Nic McPhee
13. Michael Korth
14. Linda Pederson
15. Molly Kloek
16. Becca Gercken-Hawkins
17. Casey Wagner
18. Jeffrey Ratliff-Crain
19. Michael Eble
20. Jong Min-Kim
21. Peh Ng
22. Rita Bolluyt
23. Edith Borchardt
24. Gordon McIntosh

SCIT, *University Senate Committee on Instructional Technology*, Members

25. Andy Lopez
26. Nancy Herther
27. Mark Sanders
28. John See
29. Dale Swanson
30. Steve Cawley*
31. Eric Celeste
32. Linda Jorn
33. Douglas Ernie
34. Greg Laden
35. Jim Waddell
36. David Moretz
37. Mahmoud Sadrai
38. Bernie Gulachek*?
39. Myron Lowe*
40. Renee Dempsey

ENHANCING STUDENT LEARNING THROUGH INNOVATIVE TEACHING AND TECHNOLOGY STRATEGIES: ENGAGING STUDENTS BY TEACHING TO MULTIPLE LEARNING STYLES

Engaging Students with Multiple Learning Styles Using Technology Tools:

Learning Styles Workshop

July 7, 2005 Bush IT Workshop
Science 3650, University of Minnesota, Morris
2:00-4:00 P.M.

You will notice that the workshop has been moved from the Prairie Lounge to Science 3650, which is located directly across the hall from the TEL office. We hope to see you all there from 2-4pm.

Those that cannot attend in person can join us online through Breeze Live. To access

our Breeze Live session go to http://breeze4.umn.edu/r24109897 and enter as a guest.

Breeze Live is a web based program that does not require any software other than an

installation of Flash, everything else you need to participate is available through this link.

If you do not currently have Flash, please visit

http://www.macromedia.com/go/getflashplayer/ to download the most current version.

We thank you all in advance for making time in your busy schedules to come further the communication of learning styles through technological tools.

If there are any questions about this Workshop or its location feel free to contact us either by email or telephone.

Thank you,
Scott Esler Projects Manager
esle0010@morris.umn.edu
589-6399

Engaging Students with Multiple Learning Styles
Using Technology Tools: Learning Styles Workshop
July 7, 2005 Bush IT Workshop
Science 3650, University of Minnesota, Morris
2:00-4:00 P.M.

Attendance:

- All Bush Grant Participants (ITCore group members, Consulting Group Members, Innovative Teaching Consulting Center student workers, and project participants).
- Graduate course students (approximately 20) of Helen Mongan-Rallis, associate professor, College of Education and Human Service Professions (UMD). The course was in educational computing and technology.

Content:

1. Very brief overview of grant goals and objectives (linking learning styles to technology tools)
2. One half hour panel presentation on learning styles:

- Issues of learning styles (what are they, what the results are of not addressing students' learning styles, how addressing learning styles might benefit learners)
- Models of learning styles and theorists behind the models (this might include an alignment of components of these models and or gaps evidenced)
- Purposes in selection of learning style models (how will the model support students' learning in the current setting as well as in other courses)

3. One half hour presentation on technology tools that might be effectively used with the learning style models presented above
4. One half hour (or more) workshop in which participants engage in identified activities to consider and respond to the information presented above. Participants might identify which models might be more effective than others for their work, share models not presented by the panel, identify tools that would align with their (and others') needs, and or select combinations of models and tools to address particular course and student needs. Activities might include small group tasks and then reporting out to the large group for further follow up discussion.
5. Large group discussion on what projects and or individuals would like direction on and help with in terms of meeting project goals.

ENHANCING STUDENT LEARNING THROUGH INNOVATIVE TEACHING AND TECHNOLOGY STRATEGIES: ENGAGING STUDENTS BY TEACHING TO MULTIPLE LEARNING STYLES

TRAINING

TEL: Fostering Online Communication and Collaboration
Apr 28, 2005
1:00 PM-4:30 PM
Seminar
Walt210, Minneapolis

Attendance:
Pam Gades
Pam Solvie
Minh Vo
Engin Sungur
Michelle Page
Min Zhou
Karen Johnson

Content:
This 3.5-hour seminar provided participants with an opportunity to explore a variety of strategies for promoting online communication and collaboration in TEL environments.

Topics Include:
- fostering successful online discussions
- creating productive online working groups
- hosting effective educational web conferences
- using blogs creatively in class assignments
- considering assessment of online activities.

SOCIAL EVENT

LaFave House
May 4, 2005
5-7

Kick-off event to promote collaboration

TEL Office Activity Summary

May 2005-August 2005

Forum for English Seminars

Becca Gercken-Hawkins, Gretchen Minton, Janet Shrunk-Ericksen

This project was the first of many that we worked on. In May, we researched, installed and compared three different web forum programs. In the end, we felt that the Simple Machines Forum program was superior to the others. An example was installed on our website (www.morris.umn.edu/TEL/smf/index.php) on May 31st. Once it was set up, we contacted the participants on this particular project, asking them to review our findings and test the forum to see if it was to their liking. While we waited for a response, we also found many articles on integrating a web forum into the curriculum and posted them on the English project resource page.

Sometime in mid July, the English faculty responded to our emails and asked us to install the forum on their website. The forum was set up on July 20th and all of the requested boards were added. Once it was set up, we got to work on writing a tutorial for both the use and administration of the web forums and posted them online upon completion. The project participants were again contacted on August 1st requesting a date that they could be instructed on the use of the forum software. A date has yet to be set.

In all, we are pleased at the outcome of this project. It seems that all of the technology aspects have been fulfilled. We did, however, experience frustration at the amount of time that it took for everything to be completed. This project could have been completed in a week, but we have still not yet finished everything because of a lack of communication from the English faculty (0 reflection logs and very few emails). It is our hope that, if we are unable to assist them with the rest of their project by the end of the summer, they will be able to complete it successfully on their own. (Follow up – we have made contact with this group and were able to teach them how to use their new software 8-16-05).

Foreign Language Work Group

Tammy Berberi, Viktor Berberi, Min Zhou

Tammy Berberi:

Tammy was the first project participant to visit our office and request work. We located numerous articles and resources related to Universal Design in Instruction, the Orton-Gillingham Method for instruction, students with disabilities and their transition to college, and using PowerPoint to engage students. In addition, we helped to locate

several sites from which French music could be downloaded legally. Finally, we helped her to learn new ways to use PowerPoint. We have not had much contact with Tammy for a while, but her 2 reflection logs seem to indicate that she is progressing on her project.

Viktor Berberi:

We have not had any contact with Viktor, though his project description seems to suggest that he was not in need of our assistance this summer. He has not submitted any reflection logs.

Min Zhou:

The TEL office has just started working with Min. We met with Roger Boleman in Media Services and he offered to help her complete her project (copying short clips from movies onto a DVD for easy access), as his office has all of the equipment necessary to make a professional product quickly. It is unlikely that she will need more assistance from us. She has completed 2 reflection logs.

Dynamic Web Page Teaching Tools
Elena Machkasova, Nic McPhee

We did not do any work on this project, though Nic and Elena did make a point of visiting our office and chatting with us about their project. Their 3 reflection logs indicate that they are going well on their own.

Using Mathematica on Teaching Calculus to Diverse Learners
Byungik Kahng

We have not had any contact with Byungik, though his project description and 1 reflection log seem to suggest that he was not in need of our assistance this summer.

Computer Modeling of Materials in Physics
Sylke Boyd

C and Fortran compiler were installed on the Macs. Our office did not do anything else on this project and we are unsure as to its progress. 1 reflection log has been submitted.

Financial Management
Minh Vo

Minh has not ever requested any work from our office, though we did find him a number of stock market simulations and articles on integrating them into the curriculum. He chose to use a program that we did not find. Minh has been good about replying to any emails that we send and has never indicated needing help. His 3 reflection logs seem to show that he is progressing as planned.

Horizontal Integration of Constitutional Law
Greg Thorson:

Greg contacted us, asking for a private, interactive chat room and online collaboration software/discussion board. At the time, he was interested in using a wiki for his collaboration piece.

We suggested that he use a free download of either MSN or AOL instant messenger as the chat room, as it seemed to serve the purpose that he described to us. In terms of the wiki, we did find a wiki program, but he decided that it was not what he wanted. We suggested using the SMF discussion forum as a discussion board. Later, we found out how to make boards in the forum to behave like a wiki and allow for collaboration on a post.

Greg's project is another that has been frustrating for us. Communication has been extremely difficult. He has responded to some of our emails requesting a meeting time, but then does not respond when we ask him what times work for him. Even more aggravating is the fact that he helped to plan how our office works and should know that we are available for walk-ins from 8:30 am-4:00 pm Monday-Friday. This information is also posted on our website. Greg has submitted 1 reflection log.

Technology Integration to Support Constructivist and Collaborative Learning
Pam Solvie

Pam's project is the one of which we are the most proud. She came to us early on with a long list of things that she needed done. The list seemed rather daunting and we were concerned that we might not be able to finish everything, but when requests for other work did not come in at the rate that we thought they would, our concerns subsided.

Pam's list of tasks included:

- **Conceptual mapping software.** We looked at and compared several different options. In the end, we recommended that Pam continue to work with Inspiration.
- **Video clips of classroom instruction and learning, particularly in phonics, fluency, vocabulary, comprehension, read-alouds, shared reading, and guided reading.** We found numerous clips online, sorted them into categories, and devised a method to copy them onto DVDs so Pam could show them in class without having to pull up the websites.
- **A tool to gather baseline data on learning styles.** We located and posted several online learning style inventories on Pam's project resource page. She selected one for use in her class.
- **Further information on Kolb and Kirby's theories on learning.** We were able to find a lot of articles on Kolb, but Kirby did not seem to have published anything beyond a 1979 book and 1982 dissertation. We also located an example of the Kolb inventory online.
- **A discussion space for her students, such as UM Portals with desktop video conferencing capabilities.** Pam decided on using the SMF discussion forum, which was set up on her website. Pam was later instructed on how to use it.
- **Instruction on Flash animation over words and pictures in a webpage and PowerPoint.** We created a tutorial on using Flash on concept maps. Pam also received some desk side coaching for this task.

- **A Wiki.** Pam decided not to use a wiki after we discovered how to configure individual boards to behave like a wiki in the discussion forum.
- **More information on Bruner's theories, especially in language instruction and guides on how to apply these to her courses**. Several articles were posted on Pam's resource page on Bruner.
- **Articles on interactive PowerPoint and on using it to engage students**. Numerous articles on PowerPoint were posted on Pam's resource page.
- **Help editing her concept maps to make them more interesting**. We went through the concept maps that Pam had created for her class and edited them with pictures and bubble shapes to make them more interesting to look at.
- **Copying video clips from CDs.** We copied video clips from several instructional CDs that Pam owned onto 2 CDs for easy access.
- **Help on her website.** Pam received some instruction and suggestions on how to improve her website.
- **Help learning Breeze Presenter.** Pam figured this piece out on her own.

These tasks received our undivided attention for much of June, July, and August as a result of continued communication on both sides (3 reflection logs and countless emails). We are very pleased with the outcome of this project.

Other projects
We undertook a number of other tasks not directly related to any specific project.

1. **The UMMTEL website**: we have been adding things to this site all summer.
2. **The list of learning styles resources**: we compiled a list of links and articles related to various learning styles theories and practices for use by the project participants.
3. **The July 7th Breeze Live presentation**: we planned and executed a Breeze Live presentation during a workshop on learning styles and technology.

Update on TEL Activity

June 16, 2005

The student consultants (TEL) working on the Bush Grant have been working for the past few weeks with some of the faculty on their respective projects. The following is a summary of the work that has been done thus far.

Forum for English Seminars (Becca Gerken-Hawkins, Gretchen Minton, Janet Shrunk-Erickson)

A number of web forums were located and tested. A model of the best forum software has been posted on the TEL website for demonstration purposes as well as for general use by the various people involved in the IT project. http://www.morris.umn.edu/TEL/smf/index.php In addition to the software, several articles relating to the use of web forums in the classroom have been found and made available to the project participants.

"We are looking forward to continued work on this project in collaboration with the English faculty."

Foreign Language Work Group (Tammy Berberi, Viktor Berberi, Min Zhou)

There are quite a few things in the works for Tammy Berberi. Microsoft PowerPoint is being tested and worked through so, at a later date, Tammy can be coached through all of the more advanced capabilities of the program. In addition, a number of resources have been located on Universal Design for Instruction and the Orton-Gillingham Method of Instruction, which have been made available online.

Finally, several websites have been suggested on which Tammy can find French music to download for use in her classes.

The TEL work group is looking forward to continued work with Tammy and the other project faculty. http://www.morris.umn.edu/TEL/resources/for_lang.html

Dynamic Web Page Teaching Tools (Elena Machkasova, Nic McPhee)

Nic and Elena have both visited the TEL office to discuss their project. The TEL team is hoping to get started on this project soon.

Using Mathematica on Teaching Calculus to Diverse Learners (Byungik Kahng)

No progress to report at this time.

Financial Management (Minh Vo)

A few online stock market simulators have been located and the links have been made available on the TEL Web site.
http://www.morris.umn.edu/TEL/resources/fin_man.html

Computer Modeling of Materials in Physics (Sylke Boyd)

Preliminary discussion with Sylke has begun. The TEL team is ready to collaborate on this project.

Horizontal Integration of Constitutional Law (Greg Thorson)

Preliminary discussion with Greg has begun. The TEL team is beginning work on this project.

Technology Integration to Support Constructivist and Collaborative Learning (Pam Solvie)

Pam's project has been the main focus for quite a while as she has been the most explicit in her needs for resources, as well as deadlines for the most pressing items. Research has been collected and made available on Kolb, Kirby, and Bruner's learning theories. Several online tools for gathering baseline data on learning styles have been posted for her use. Concept mapping software has been researched and the strongest program has been recommended. A large number of video clips of classroom instruction and learning have been located and downloaded; these are in the process of being sorted and will later be burned onto a DVD for instructional purposes. Finally, research has been done on how to use Flash for animation and a tutorial is being made on the program so Pam can teach herself how to use it.
http://www.morris.umn.edu/TEL/resources/tech_int.html

Other investigations and research being performed by the TEL work group

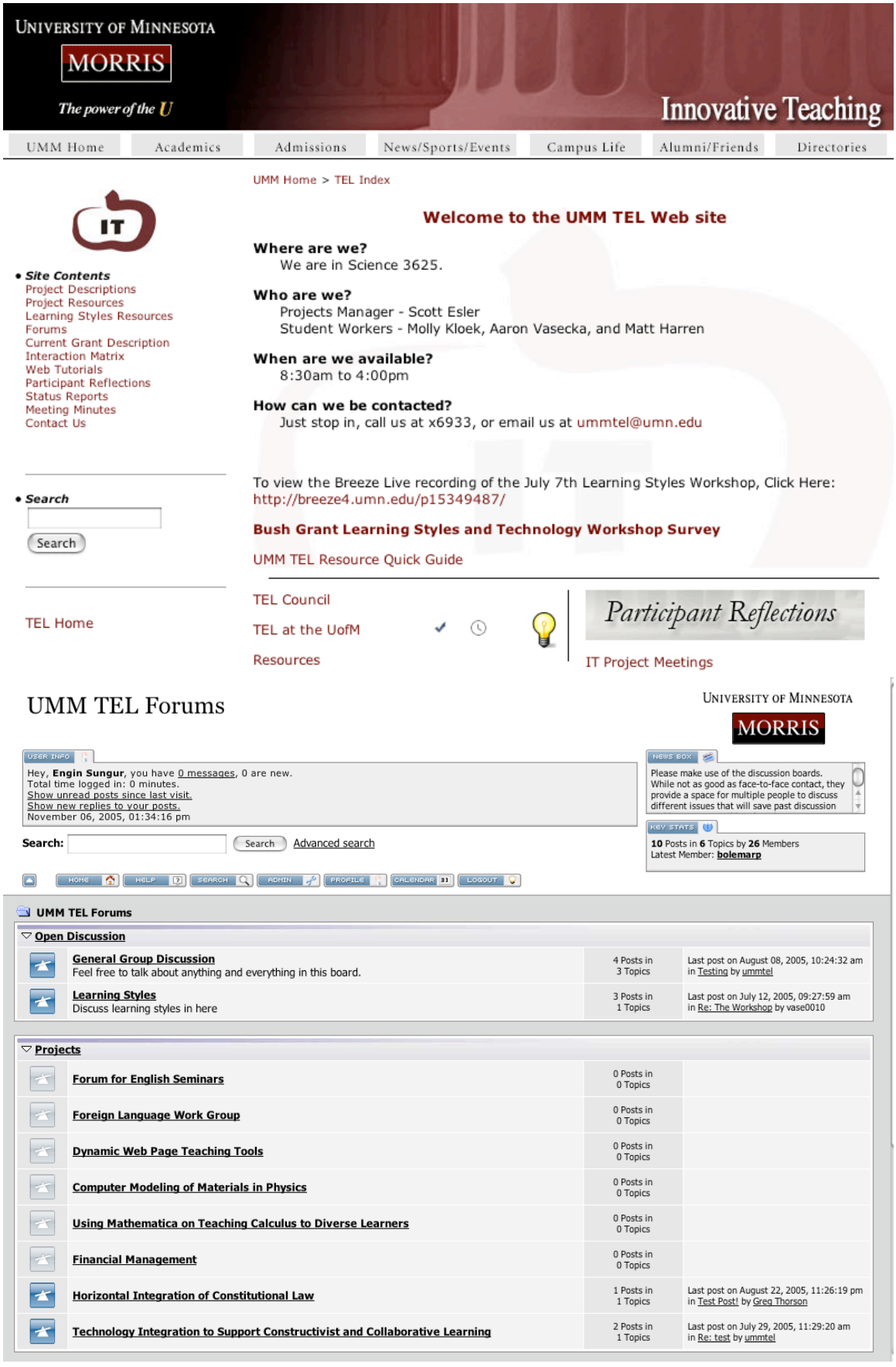
In addition to the faculty projects, the TEL group has built an extraordinary website (http://www.morris.umn.edu/TEL) on which all of the resources for the faculty have been posted. The site also features a web forum for online discussion on the project, status reports, tutorials on building a webpage, contact information, and a variety of resources on learning styles. This information is available for public viewing. The TEL group is also working on updating the Faculty Center website to the new template.

For more information on the activity of the TEL group or to request help on a specific project, please feel free to contact them:

Phone: 6933
Email: ummtel@umn.edu
AIM: ummtel
MSN: ummtel@umn.edu
Office location: Science 3625

Or contact the individual members:

Matt Harren, harr0760@morris.umn.edu, 6933
Molly Kloek, kloe0038@morris.umn.edu, 6933
Aaron Vasecka, vase0010@morris.umn.edu, 6933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MORRIS
The power of the U
Innovative Teaching
UMM Home
Academics
Admissions
News/Sports/Events
Campus Life
Alumni/Friends
Directories
UMM Home > TEL Index
IT
Site Contents
Project Descriptions
Project Resources
Learning Styles Resources
Forums
Current Grant Description
Interaction Matrix
Web Tutorials
Participant Reflections
Status Reports
Meeting Minutes
Contact Us
Search
Search
TEL Home
Welcome to the UMM TEL Web site
Where are we?
We are in Science 3625.
Who are we?
Projects Manager - Scott Esler
Student Workers - Molly Kloek, Aaron Vasecka, and Matt Harren
When are we available?
8:30am to 4:00pm
How can we be contacted?
Just stop in, call us at x6933, or email us at ummtel@umn.edu
To view the Breeze Live recording of the July 7th Learning Styles Workshop, Click Here:
http://breeze4.umn.edu/p15349487/
Bush Grant Learning Styles and Technology Workshop Survey
UMM TEL Resource Quick Guide
TEL Council
TEL at the UofM
Resources
Participant Reflections
IT Project Meetings
UMM TEL Forums
UNIVERSITY OF MINNESOTA
MORRIS
USER INFO
Hey, Engin Sungur, you have 0 messages, 0 are new.
Total time logged in: 0 minutes.
Show unread posts since last visit.
Show new replies to your posts.
November 06, 2005, 01:34:16 pm
NEWS BOX
Please make use of the discussion boards. While not as good as face-to-face contact, they provide a space for multiple people to discuss different issues that will save past discussion
KEY STATS
10 Posts in 6 Topics by 26 Members
Latest Member: bolemarp
Search:
Search
Advanced search
HOME
HELP
SEARCH
ADMIN
PROFILE
CALENDAR
LOGOUT
UMM TEL Forums
Open Discussion
General Group Discussion
Feel free to talk about anything and everything in this board.
4 Posts in 3 Topics
Last post on August 08, 2005, 10:24:32 am in Testing by ummtel
Learning Styles
Discuss learning styles in here
3 Posts in 1 Topics
Last post on July 12, 2005, 09:27:59 am in Re: The Workshop by vase0010
Projects
Forum for English Seminars
0 Posts in 0 Topics
Foreign Language Work Group
0 Posts in 0 Topics
Dynamic Web Page Teaching Tools
0 Posts in 0 Topics
Computer Modeling of Materials in Physics
0 Posts in 0 Topics
Using Mathematica on Teaching Calculus to Diverse Learners
0 Posts in 0 Topics
Financial Management
0 Posts in 0 Topics
Horizontal Integration of Constitutional Law
1 Posts in 1 Topics
Last post on August 22, 2005, 11:26:19 pm in Test Post! by Greg Thorson
Technology Integration to Support Constructivist and Collaborative Learning
2 Posts in 1 Topics
Last post on July 29, 2005, 11:29:20 am in Re: test by ummtel

INNOVATIVE TEACHING CONSULTING CENTER

Center has been set up by contributions from Faculty Center, Computing Services, and Science and Mathematics Division. Grant only provided partial support for the students. The remaining students salaries, cost of computers (1 IMAC, 2 PC) are covered from other UMM sources.

1. Enabled ethernet jacks before May 18th as follows:

Science 3625 (Bush IT Work Room): 2 jacks - D1 and D2 Dave S. will provide a hub/switch to accommodate an additional workstation and printer

Science 3515 (Bush IT Projects Manager - Scott): 1 jack - D1

Computing Services will donate the one-time connection fees ($400) and the network maintenance fees for this summer ($300). The annual network maintenance fees will be billed to the Grant beginning this Fall at $100 per workstation (x3). The printer network maintenance fee is not billable.

Telephones:

Phones were being ordered by Faculty Center. One phone per room above (installation fees + monthly phone charges paid by the Faculty Center and Bush Grant).

Computers:

Faculty Center provided tan IMAC computer, Computing Services provided 2 Dell PCs for the work room, Scott Estler had his own computer.

Printer:

Science and Mathematics Division provided a printer for Science 3625 (the work room).

INTERACTION MATRIX

Seven Principles of Effective Learning	Teaching/ Learning Component	Teaching/Learning Modality	Teaching Learning Activity	Instructional Tool or Strategy
1.encourages contact between students and faculty 4. gives prompt feedback	**Interaction** Karen Johnson	One to Alone (Resource Paradigm)	Online Databases	E-library resources
			Online journals	E-library resources
			Online interset groups	online discussion groups
			Interviews	Internet archived interviews
			Learning checks	Interactive quizzing
		One to One (email paradigm) Usually student to teacher	Learning contract	E-mail
			Apprenticeship	E-mail or Blog
			Assignments submission	Assignment drop box
			Interviews	E-mail Synchronous chat
		One to Many (Discussion Board Paradigm)	Lectures	Streaming video PowerPoint Lecture Notes
			Symposia	Moderated Chat
			Distributed facilitation (student researches problem/topic and presents)	Discussion board Web page Blog
			Survey of Class/polling	Personal Response Units
		Many to Many (Conferencing Paradigm)	Debates	Online discussion
			Case Studies	Online discussion
			Role Play	Online discussion
			Group Projects	Web site Power Point Blogs Wiki Moodle WebQuest
			Brainstorming	Concept Mapping (inspiration) Small group online discussion
			Simulations	Discipline specific software
			Roundtable discussions (with others at a distance)	Online discussion
			Online class meeting	Moos/MUDS Chat