Name: Morgan C. Benton Date: Tuesday, May 11, 2010

Department of Integrated Science & Technology Faculty Activity Report

2009-2010 Academic Year—Morgan C. Benton

Teaching Activities

Courses Taught Summer 2009- Spring 2010

Course #	Section #	Semester	# of Credits	# of Students	Team Members
GISAT 160	0003	Fall	3	12	Papadakis (lead), Pete Bsumek, Julia
ISAT 340	0001	Fall	3	21	Tony Teate
ISAT 348	0001	Fall	3	23	
ISAT 480	0010	Fall	1	1	
ISAT 480	0011	Fall	3	1	
ISAT 499B	0008	Fall	2	1	
ISAT 492	0023	Fall	2	5	
ISAT 640	EX01	Fall	3	22	Drago, Salib, Camilleri, Kolvoord
ISAT 252	0001	Spring	3	26	Teate, Salib
ISAT 252	0002	Spring	3	26	Teate, Salib
ISAT 499C	0001	Spring	3	1	
ISAT 348	0001	Spring	3	2	
ISAT 493	0005	Spring	3	5	
ISAT 640	0001	Spring	3	22	Drago, Salib, Camilleri, Kolvoord

NOTE: Officially I had a full course release to work on the ISAT website both fall and spring. ISAT 640 is the course that I co-teach with University of Malta faculty, but I had little responsibility for that this time.

Curriculum Development

Notable achievements this year included re-writing the goals and objectives for the ISAT 252 course, and doing more exploration into ways to minimize the detrimental impact of grades on learning, as well as pioneering a pre-semester questionnaire with other members of my Madison Teaching Fellows team. In addition, I successfully recruited enough students to make my Japan study abroad program viable this year. I participated in the Freshman Eco-Learning Community, and I ran a successful "hacking session" that ran every Monday night all year long.

In the fall, as part of the Foundations Committee, I led the rewriting of the educational goals and objectives for ISAT 252. I moderated the discussion among the IKM team members where we discussed this course and I also drafted the goals and course calendar. These were accepted and are pending C&I approval, but were used successfully this spring.

I continued to explore a "no strings attached" choose-your-own-grade approach during the fall in ISAT 348 and ISAT 340, with mixed results. On the positive side, students remained engaged for the majority of the semester, yet the semester projects were not as powerful as the projects turned in by the ISAT 252 students last spring. On the whole, learning was at least on par with that in other semesters. Another challenging aspect was an unexpectedly strong hostile reaction to my teaching method from colleagues on my teaching team. We had two group meetings about this and I had numerous side discussions with members of the team. This experience led me to moderate my approach somewhat this past spring and look for a middle ground between my approach and the "traditional" approach. This moderation took the form of teaching ISAT 252 with a portfolio-based evaluation. I learned more interesting things by running the class this way, as well, and will work to incorporate these lessons into the experiences I create for students in 340 and 348 this coming fall.

As a member of the Millennial Connections Madison Teaching Fellows team I spent the year exploring the question of how we, as faculty, can better understand and relate to our students who have grown up under circumstances so different from our own. This endeavor resulted in the creation and piloting of a pre-semester questionnaire, which we found allowed us to get to know our students prior to the first class and tailor our syllabi accordingly to increase our perceived responsiveness to students, and also students' resulting motivation to work in the course. The results of our work were presented at a gathering of all past and present Madison Teaching Fellows hosted by CFI in late April. We plan to turn the results of this project into a paper and/or a workshop for faculty in the upcoming year.

My efforts to recruit students for a summer study abroad program in Japan have finally paid off. I will be taking my first group of ten students to Tokyo on May 15th and we will be in the country studying language and culture for five weeks. In this process I was able even to attract two students from other universities who will participate.

I was invited by Maria Papadakis to help run a section of GISAT 160 in support of the Freshman Eco Learning committee. This was a challenge for me since the content of the course was significantly outside of my area of expertise. I really enjoyed the opportunity, especially to take trips with students hiking and to Montpelier.

Finally, I also continued to host a Monday night "hacking session," which grew and expanded this year. Every Monday from 8-midnight I invited any students who wanted to attend to come and hang out in the lab and work on code-related projects. Attendance ranged from 15 to over 50 on occasion, and grew in time to include not just students from my courses but those from Nicole Radziwill's courses, other senior project students who needed help (notably Chris Brill and Corinn Pope). I became even more deeply convinced that the best way to foster programming skills is to make sure that there is sufficient "quality time" spent sitting together at the machine. My mentoring skills improved greatly.

Senior Project Advising: 7+ hours/week

I advised six students in the successful completion of four senior projects this year. Since there were only 57 students in the graduating class, that means that I advised more than 10% of the students. One of these projects became a successful published poster presentation that will be at this year's AWEA

conference in Dallas, TX. This same project, by David Ramsey and Brian Rapp, also won a Best Honors Thesis, and Integration Awards. Spending time with my senior project students was not only one of the most time-consuming parts of my week, but probably the most fulfilling. In addition to weekly meetings in my office amounting to about 6 hours, I also frequently met my students on the weekends and at their apartments to make progress on their applications. I also made significant contributions to the senior projects of Christopher Brill, Cyril Thornton, and Corinn Pope.

Teaching-related Professional Development

I performed a Teaching Analysis Poll (TAP) in my classes both fall and spring to find out from my students what things I was doing well, and what things that could be improved. I received one on one counseling from the TAP consultants who performed the TAPs.

As part of Thomas Haney's senior project in which he was working to build an online peer evaluation tool, I attended a training session at CIT that taught me how to use the peer evaluation tool that is built into Blackboard. I also attended a CFI workshop on the more effective incorporation of writing into my teaching strategies.

In March, during spring break, I attended CSEET 2010 (Conference on Software Engineering Education & Teaching). There were several excellent workshops including one by Alistair Cockburn (co-author of the Agile Manifesto) on reducing software development cycles to increasingly small increments, and another by Jan Acosta from IBM who trains IBM's legendary follow-the-sun global teams on how to be productive using an agile technique called scrum. Both of these workshops resulted in concrete concepts and experiences that I could bring to the classroom reflecting cutting edge practice in professional software development. There was also an excellent paper presentation on a model for training software developers in Sweden that used a cross-cohort model that spanned multiple years of their program. It is exactly the kind of model many have talked about for ISAT in many respects.

Professional Service Activities

JMU Teams & Committees

Departmental Teams & Committees

I took on a significantly expanded role on two teams this year, becoming the team lead for both IKM and Recruiting this year.

IKM Team

Leading the IKM team taught me about many of my strengths and weaknesses. We had a productive year:

- We revamped the ISAT 252 syllabus.
- We implemented a new successful strategy for managing software in the 3rd floor computer labs, and included TSEC and LabOps personnel into our meetings

- We recruited Emil Salib to teach ISAT 252 and further integrate that content with the Telecom sector, further increasing interest in the newly revived Telecom sector as well
- We wrote promotional content for our courses to be placed on the new ISAT website
- We spent time working on rewriting the IKM Charter, but didn't make much tangible progress
- We mentored Nicole Radziwill as she was the newest member of our team

I learned, though, that I much prefer high level discussion to the detail-orientedness necessary to send out meeting invitations, agendas, and get minutes typed up and out effectively.

Recruiting Committee

I chaired the recruiting committee this year. All of our activity took place during the fall semester. We did not meet during the spring. Our fall recruiting event for undeclared students was poorly attended, but regardless, we managed to attract about 10 new students into the major, which is on par with our past years' efforts at this event. We made diversity, particularly gender diversity, a priority this year and spent a great deal of time brainstorming and discussing ways we might be able to increase the number of women in ISAT. Louise Temple and Joy Ferenbaugh agreed to co-teach a section of GISAT 160 that would be focused on issues related to women in science. From our discussions also came the idea to change the way that people search for majors on the JMU website. I began a discussion about these things with Andy Perrine and got an initial positive reaction. I hope to move this effort forward over the next year. I'm most disappointed that I did not get the ISAT Video Contest off the ground again this year.

Foundations Committee

I represent the IKM Team on this committee, primarily for ISAT 252. I led the effort to write the CAR for ISAT 252 in the fall.

C&I Committee

I represent the IKM Team and vote on matters that come before the committee.

SCOTS Team

I don't teach any courses in this sector, but I'm a fairly regular participant at meetings.

Assessment Committee

I worked closely with Mary Handley this year to move forward on the adoption of TK20, a system we're planning to use for a portfolio-based assessment of the ISAT program. I also recruited some students to lead the effort to teach the rest of the student body about how (and why) to use the system.

Biosystems Faculty and Department Head Search Committees

I was a not officially a member of either of these teams, but I attended all of the research talks and provided written commentary on all of the candidates.

ISAT Golf Challenge Committee

I handled all of the web-based registration and publicity as well as participating in the event.

ISAT Webmaster

We launched a new website this year! This was a tremendous effort. Feedback has been extremely positive. Our next hurdle is to replace much of the content that we took down from the previous site. We also need to create a culture of participation whereby people naturally feel compelled to submit content on a regular basis that will be fresh and exciting. Early discussions with Dr. Maslen indicate that this will be a priority for him as well. We plan to reconstitute the web advisory committee in the fall to spread out the responsibility for gathering and analyzing the content that is on the site and its traffic.

ISAT Honor Society Advisor

I was the advisor for the ISAT Honor Society this year. IHS is going through a significant doldrums at present and I plan to work with them a bit more this year to revitalize this group.

College Teams & Committees

I did not serve on any college-level teams or committees this year.

University Teams & Committees

CFI TAP Consultant

I served as a TAP (Teaching Analysis Poll) consultant for the third year in a row. I provided feedback to faculty in Art History, Education, Spanish, Business, and CS this year. A number of the relationships I've formed as a result have continued to be productive.

Asian Studies Minor

I contributed to the writing of questions on the senior exit survey for Asian Studies minors. I also participated in the Asian Studies symposium in February that focused on food-related issues in Asia. Also, I put together the Japan Summer Study Abroad program which will take ten students to Tokyo and other parts of Japan this summer.

Advising on Web Strategy to Andy Perrine

Andy Perrine, Director of Marketing for JMU included me on a committee that he convened to consult on the adoption of Web 2.0 marketing strategies for JMU. We met three times over the course of the year. I also began working with him and David Taylor to introduce a tag-based organizational structure for majors at JMU so that students can search for programs based on key words rather than the administrative hierarchy that currently governs the organization of the site.

Judging a Debate Competition

The JMU Debate Team hosted a national competition that brought in debate teams from all over the country. I served as a judge for a debate on whether or not health care was a right.

Japan Club

I served as the advisor to the newly formed Japan Club.

Contributed language for the JMU Faculty Handbook

My suggested wording for section III.A.2.b.(15) of the JMU Faculty Handbook was adopted verbatim by the faculty handbook committee.

Community Teams & Committees

Harrisonburg City Schools Gifted Advisory Committee

I was asked to serve this year on the committee that advises the Harrisonburg City School Board on setting policies and practices within the city with respect to the practice of providing differentiated instruction to students who are "identified gifted." This year we moved the definition of "gifted" away from one that narrowly focused on just reading and mathematics skills and towards a more varied and inclusive definition that recognizes giftedness in other areas such as the arts, humanities, and industrial arts. I've spent time working towards perhaps implementing a Montessori-style classroom that would have a cross-generational cohort of students at Waterman Elementary School.

Friendly City Food Coop Member

I became a member of the Friendly City Food Coop this year whose mission is to promote the consumption of locally grown and raised foods particularly those that employ sustainable methods of production.

Professional Consulting and Service Activities

Became Regional Coordinator for the Software Division of the American Society for Quality

As regional ASQ representative, I attended a couple of meetings and conferences to network with people engaged in software development and promote discussions about how to improve the quality of the process and the resulting products.

PPMRN Website

I continue to consult on the development of the 2000+ member Public Performance Measurement and Reporting Network's website. This activity gives me experience and credibility when instructing students in the hazards of building and deploying larger scale web applications.

Morphatic, Splashkit and 9Davine

Through a relationship with these businesses I've been involved in the analysis, design, development, and deployment of approximately nine websites in the past year.

Reviewer for Journal of Information Systems Education

I reviewed articles for the first time this year for JISE, which is edited by Susan Kruck, a professor here in JMU's business school.

Scholarship and Professional Development Activities

Conference and Invited Presentations

AWEA 2010, Dallas

I advised the successful submission of a poster presentation to this year's AWEA conference. The paper was titled *Development of a Residential Site Assessment and Economic Feasibility Calculator for Behind-the-Meter Wind Energy Generation in Virginia*.

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CISAT Faculty Research Day

I presented at poster at the research day entitled *Choose-Your-Own-Grade: A Pedagogical Approach Grounded in Psychometrics and Self-Determination Theory*.

STEM Brown-bag Lunch Series Invited Speaker

I was invited to present at a brown-bag lunch event sponsored by the Bridging the Valley program which is designed to increase the numbers of students entering and remaining in STEM programs both at JMU and other partner institutions. My talk was titled *Do Grades Impede Learning*?

CSEET Participant

I attended the Conference on Software Engineering Education and Training in Pittsburgh in March. As mentioned earlier, this conference contributed to both my theory and practice of software development.

Paper Accepted for next year's ATMAE Conference

I co-authored a successful abstract submission for the annual meeting of the Association of Technology, Management, and Applied Engineering for 2010. The paper is entitled *Using the Agile Organizing Framework to Create Adaptive Learning Environments for Technology Development*.

Other Scholarly Activities and Student Involvement

I am developing a set of skills and talents needed to build and deploy an open-source online learning management system that I'm calling UMatter2Us. Many of my scholarly activities are related to this either directly or indirectly. I continued to work on my skills in the technologies I named in last year's report, namely:

- Ruby on Rails
- Version Control with Subversion
- Virtual Server management with VMWare Server
- Windows Server 2008 and SQL Server 2008 management
- Linux Server Management
- TRAC
- The Dojo Toolkit Javascript Framework

To these technologies I added:

The ASP.Net MVC Web Application Framework

Every major programming language used in web development has developed a web application framework based on the Model-View-Controller pattern over the last several years. The MVC pattern has proven to be one of the most popular and successful methodologies for both the analysis, creation, and maintenance of web applications. Microsoft's entry to this world is the ASP.Net MVC Framework. I learned this framework and introduced it to my ISAT 340 students. Rachel Palmquist, Brian Rapp, and David Ramsey all used this framework in completing their senior projects.

The PHP Zend Framework

This is another MVC-based web application framework. Darrin Whitley and Arthur Burwell used this framework to complete their senior project. This is decidedly a more difficult framework to learn and implement.

UMatter2Us

UMatter2Us is the learning management system that I'm building with the help of my students. Forward progress was made this year by Thomas Haney, who worked on this system as his senior project. Thomas was successful in converting all of our page templates from ERB format into HAML format, which offers significantly shorter code and easier maintenance.

I also received training in Qualtrics and Web Manager 2, both of which increase my value to the department and the university.

General Comments

My Most Outstanding/Satisfying Activities for 2009-2010

Of all of the things I've done this year, I feel best about the following:

- Mentoring 6+ of our 57 seniors through their senior projects and getting an Integration Award and Best Honors Thesis Award (teaching)
- Launching the new ISAT Department websites (service)
- Having many, many rich and lively conversations with faculty about the role of grades and other rewards in student motivation and pedagogy (scholarship)

If you're noticing a theme here, it is that I try to make every activity in which I'm engaged have some direct impact on student learning here at JMU. I am deeply and passionately committed to creating a safe atmosphere where students can feel comfortable exploring the world and a diversity of ideas and taking the risk that they might find meaning in their lives. I also strive to model what it means to be constantly engaged in learning as much as I can about the world.

What we accomplished as a department in 2009-2010

We hired a new department head, and welcomed him with a very well-crafted vision statement. We launched a new website and started moving towards a more coherent and focused web strategy. We saw our enrollment increase.

Priorities for improvement as a department in 2009-2010

The only way I can really describe it is that I sense that people feel a lack of esprit de corps. I don't particularly feel that way, but I get the sense from people who have been in the department a while that we used to be closer to one another, and that now things feel kind of fragmented. People have lost touch with each other. Only about 1/3 of the faculty attended the undergraduate graduation ceremony. If there was some way for us to begin rebuilding that sense of camaraderie, that would be great.

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Suggested Discussion Topics for the August 2010 Summit

(This is what I said last year, but particularly after this SpringFest, it is still apropos, and we didn't cover this stuff last year.) I was alarmed to learn that JMU's students drink far more alcohol than the average for US colleges and universities. I knew they drank a lot, but I didn't realize that it was more than at other schools. The JMU Counseling Center does a very good presentation not just on drinking but on many of the other pressures that our students face. I think it would be an excellent use of our time to have the Counseling Center come and do the presentation for our faculty so that we can remain in touch with our students. We had a student commit suicide last year, and another had an outburst in class. I'm not suggesting that this somehow was the fault of our faculty at all, but it would be very healthy for us as a faculty to have a discussion about what we can do to be more sensitive and supportive to our students in ways that may help them deal better with the pressures that they face. It might also be a time to discuss setting up some sort of more formal advocacy apparatus for our students, or at least publicizing what we have better.

(Also from last year, still relevant, I feel.) Also I'd like an opportunity to talk about my studies of the role of grades in learning and motivation with the faculty. As Mike Deaton said at our recent IKM meeting, when ISAT was created we decided to make a commitment to remaining on the cutting edge of pedagogy. I realize that my approaches are unorthodox and that there are at least a couple of faculty who have reservations about my methodology. I'd like to present the theory and data upon which the pedagogy is founded and also some of the results. I have several goals for this presentation: 1) to foster discussion among the faculty about pedagogy, 2) to invite ongoing conversations/collaborations among those people who are interested in trying out some version of this approach to teaching, 3) to make those who are not interested in trying this aware of the effort and the research upon which it is based.

Alignment of Faculty Activities with Departmental Goals

Increase the number and diversity of students in the four degree programs and in JMU STEM programs as a whole.

- ISAT Recruiting committee (pretty much everything we did there)
  - Organized fall event for undeclared students
  - Participated in open houses and Choices
  - Represented the department at the Future Focus Expo in Lynchburg
- Work on the ISAT website to focus on student recruitment
- Contributed to adding a new female faculty member to the Biosystems team

Continue to develop and implement a comprehensive curriculum assessment process.

- Worked to help configure portfolio management software for the assessment committee
- Led the IKM Team in revamping the ISAT 252 syllabus and also talking about revamping our curriculum

- Served as a TAP consultant for CFI, had TAPs performed in my classes, and encouraged fellow faculty to do so as well

Support and recognize excellence in teaching and education research.

- Ran my own study to explore the strengths of self-grading in introductory programming courses
- Became a Madison Teaching Fellow focusing on "Millennial Connections" and helped pilot a new pre-semester questionnaire that faculty can use to better get to know their students

Develop and maintain a comprehensive departmental strategic planning process.

- Note taker at departmental meetings
- Contributed as an interviewee to writing the strategic vision statement for the department

Continue to support and grow the Information Analysis program

- Launched the new IA website
- Built a website for INSA (not launched yet, unfortunately!)

Continue to support and grow the ISAT Master's program and the MSISAT in Malta (SERM).

- Launched a new MSISAT website

Develop and maintain appropriate organizational structures.

- N/A

Secure and maintain necessary financial and physical resources.

- N/A

Support and recognize research, scholarship, and service activities.

- Worked with Emil Salib to plan the integration of Telecom content into the sophomore year IKM courses in order to help boost the number of students who move into that sector
- Volunteered support of students doing new research in wireless sensor networks

Faculty Anticipated Activities Plan for 2010-2011

Teaching Activities—Estimated percentage of workload: 45%

Courses I expect to teach: ISAT 252, ISAT 340, ISAT 348, ISAT 492, ISAT 493, ISAT 640 (in Malta Spring 2011)

I also plan to continue research into the pedagogical techniques.

Professional Services Activities—Estimated percentage of workload: 25%

Anticipated service activities:

- Department Level
  - ISAT websites
  - IKM Team Lead
  - Recruitment Committee Chair
  - IHS faculty sponsor
  - Other committees: C&I, Assessment, Foundations
- College Level
  - No plans
- University Level
  - CFI TAP Consultant
  - Organizing study abroad trip to Japan
  - Work with Andy Perrine on using Web 2.0 strategies to market JMU
- Profession
  - Journal reviewing
- Community
  - Harrisonburg City Schools Gifted Advisory Council

Scholarship and Professional Development Activities—Estimated percentage of workload: 25%

- Continued development of UMatter2Us
- Continued development of the new pedagogical style begun this past year

Other Activities—Estimated percentage of workload: 5%

- Continued work on websites for external clients

Faculty Conflict of Interest Disclosure for 2009-2010

Companies/organizations for which I have consulted this year

- American Home Bank Reverse
- Public Performance Measurement and Reporting Network
- Institute for National Security Analysis
- Splashkit
- 9Davine
- Tony Doggett

Companies which I own or have significant financial interest

Morphatic

Other areas of potential conflict of interest

N/A